

PROGRAMMING - HISTORY - INTERVIEWS - REVIEWS - INSIGHTS

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future days are back



Sinclair ZX81

**The beloved and
hated... Datasette**

**Archimedes: 32-bit
computers from the
future**

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Bloodstone
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Retrocomputing and AI?

Artificial intelligence may seem like the last thing you'd associate with an 8-bit computer, yet it's rapidly becoming one of the most exciting trends in the retrocomputing community. AI is proving to be an invaluable ally, helping enthusiasts write code, understand vintage hardware, recover damaged program listings, and even explore programming languages that have been largely forgotten for decades (remember "Super Turtle Pilot" from the last issue?).

For newcomers to 8/16-bit development, creating software for machines like the Commodore 64, the ZX Spectrum, the MSX, or the Amiga has always involved a rather steep learning curve. AI drastically lowers this barrier by explaining hardware architecture, generating sample code in BASIC or Assembly, translating programs between different languages, and helping to solve hard-to-pinpoint problems. Tasks that once required hours of research in manuals can now be completed in just a few minutes, allowing developers to devote more time to creation and experimentation. Fabrizio Radica discusses intelligent experimentation with AI in his article in this very issue.

Perhaps the most fascinating aspect of this trend is its contribution to digital preservation. AI can assist in restoring magazine printouts acquired via OCR, documenting old source code, identifying obscure programming languages, and making decades of computer science knowledge accessible to a new generation. In this way, it helps preserve not only the software itself but also the culture and technical expertise surrounding these classic machines—and anyone who regularly follows our RetroLiPS column knows exactly what we're talking about.

In addition to assistance and preservation, AI is actively fueling a wave of new creativity. Enthusiasts are now using generative models to produce original pixel art, chiptune music, and even entire game levels tailored to the strict memory and processing constraints of 8-bit systems. This synergy between human ingenuity and machine learning isn't limited to recreating the past; it's reimagining what these classic platforms can do in the present. It's up to future generations to judge whether this is a good thing or not!

We're likely just at the beginning of a new phenomenon destined to leave its mark on the world of retrocomputing as well. Artificial intelligence already offers tools capable of simplifying and speeding up many of the most time-consuming and repetitive tasks, allowing enthusiasts to devote more time to creativity, experimentation, and the rediscovery of systems from the past. Of course, it's not a magic wand: without a solid understanding of the platforms and their languages, even AI can make mistakes or propose inaccurate solutions. But when used with a critical eye and combined with study and experience, it can become a valuable ally, contributing not only to the development of new software but also to the preservation and promotion of the historical heritage of computing.

Francesco Fiorentini

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Sinclair ZX81

by *Leonardo Miliani*

About a year after the debut of its predecessor, the ZX81 (Fig. 1) was released in 1981. This new computer, designed by Sir Clive Sinclair, quickly gained popularity—just like its predecessor—thanks to its affordable price, and soon became the driving force behind the computerization of the United Kingdom.

Development

In early 1980, Science of Cambridge—a company recently founded by the flamboyant Sir Clive Sinclair—began selling one of the first computers available at a truly modest price: the ZX80, a microcomputer based on the Z80 processor with just 1 KB of RAM and a mere 4 KB of ROM—enough to hold minimal firmware to handle user input and a stripped-down version of the BASIC language. In addition, the CPU also had to shoulder the burden of rendering the image on the screen: to keep production costs low—a decision Sinclair made to offer the computer at a modest price—all support for the Z80 was eliminated, forcing it to read data from memory on its own and generate the video signal. Because of this extra workload, not only is the machine's overall performance poor, but the ZX80 also suffers from an annoying video glitch, which causes the image to disappear when the user presses a key or while programs are running: the computer was, in fact, designed so that the CPU suspends video processing while performing other tasks.

Despite these flaws, the computer sold very well: thanks to an extremely low price (the assembled version cost less than 100 pounds) and a strong advertising campaign, the ZX80 quickly climbed the ranks of popularity, reaching an impressive 10,000 units sold per month.

But Sinclair did not rest on his laurels. Once he had achieved the success he'd hoped for, with his company's finances finally breathing easier, he immediately began thinking about how to improve the computer. He once again entrusted the task to Jim Westwood, the designer of the ZX80, who—fully embracing Sir Clive's philosophy—sought new ways to further simplify the design and lower the already low production costs even more. He took a look at the ZX80's circuit diagram, and what immediately caught his eye were the many chips mounted on the motherboard: more than twenty. He therefore turned to Ferranti, a British company specializing in electronics, which had become famous after World War II for producing the Ferranti Mark I, one of the world's first general-purpose electronic computers to go on sale. Ferranti suggested encapsulating the functions of the vast majority of the ZX80's integrated circuits into a single chip: an uncommitted logic array (ULA) (Fig. 2).

The ULA consists of logic gates and transistors that are initially unconnected to one another but are then interconnected according to Sinclair's specifications to replicate the functionality of the ZX80 chips it replaces:



Fig. 1: Sinclair ZX81
(source: Wikimedia Commons – author: Evan-Amos)

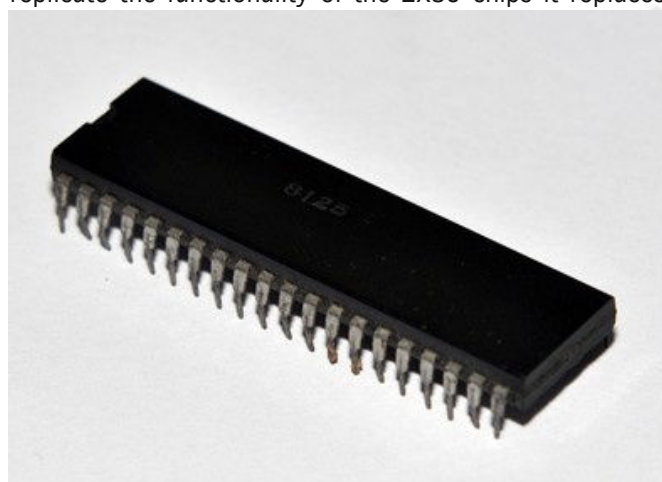


Fig. 2: ZX81 ULA (source: Wikimedia Commons - author: Russian Rocket)





thanks to the ULA, Westwood reduces the number of integrated circuits to just four, pairing the ULA with the CPU, the ROM, and a RAM chip. In some later models, the number of chips increased to 5, depending on whether 8x1 kbit or 4x1 kbit RAM chips were used (in the latter case, two chips were required).

The cost savings resulting from the reduction in the number of integrated circuits allowed the ROM to be expanded from 4 to 8 KB, enabling the computer to incorporate a version of BASIC with a richer set of commands and functions. Sinclair once again turned to John Grant of Nine Tiles, the company that had developed the 4 KB version built into the ZX80: Grant was joined by programmer Steve Vickers, who added support for floating-point numbers and trigonometric functions to the original BASIC, while Grant worked on the code that interfaces with the hardware. Vickers was also responsible for writing the BASIC manual that came with the computer, which was praised for being not only a reference guide to the language but a full-fledged BASIC programming course—a tangible added value to the computer purchase. The problem of screen flickering when the CPU executed instructions or read input was also resolved. The programmers introduced SLOW mode, activated by the command of the same name: In this mode, the CPU devotes about 3/4 of its processing power to generating the video image, reserving the remaining time—that is, the period during which the CPU does not need to provide data for the image, which runs from the moment the video scan line leaves the bottom edge of the screen until it returns to the top edge—for program execution or input operations. There is also the FAST command, which restores the CPU's full power but, as with the ZX80, also results in the loss of the image while a program is running.

The computer's appearance was also redesigned to give it a more professional look. The task was entrusted to Rick Dickinson, an in-house designer who had assisted John Pemberton in designing the ZX80. Dickinson designed a sleek, compact black plastic case and replaced the ZX80's calculator-style keyboard with a membrane keyboard that had a more refined look and was flush with the top cover. The ZX81's design was so iconic that in

1981 it received an award from the British Design Council, an organization that promotes inclusive design.

The Failed Collaboration with the BBC

Toward the end of 1980, while development was proceeding at full speed, Sir Clive Sinclair learned that the BBC intended to launch a mass computerization program and planned to air a television series in 1982 serving as an introduction to home computing; the BBC had begun selecting the machine that would star in the series. Sinclair decided to enter the selection process with the ZX81, which was still under development, counting on the fact that there was already a base of about 40,000 ZX80s in circulation and that, by the time the program aired, there would likely be many more ZX81s in British households. BBC executives, however, did not share Sinclair's vision, deeming the ZX81's specifications too limited to make it a practical computer, and selected, from among the many proposals, the Proton from Acorn Computer, which would become the BBC Micro a year later.

Immediately after selecting the computer, the BBC released a list of machines compatible with the future BBC Micro; schools and public institutions that purchased these machines were entitled to a 50% reimbursement from the British government. Sinclair did not take it well that the BBC had rejected its ZX81, but it was even more upset about being excluded from the list of compatible computers. Following the ZX81's unveiling, Sinclair launched its own promotional campaign, offering schools the opportunity to purchase a bundle consisting of the computer, a memory expansion, and the ZX Printer for just 90 pounds. Although the most affordable computer eligible for the reimbursement cost 130 pounds, the fact that it was not on the BBC's list of recommended computers for following the television course did not work in the ZX81's favor, and only 15% of schools took advantage of Sinclair's offer. However, this percentage ultimately translated into a respectable final result, as it still amounted to more than 2,300 packages sold.

Technical Specifications

At the heart of the ZX81, as in its predecessor, is a Z80A processor manufactured by NEC, clocked at 3.25 MHz.



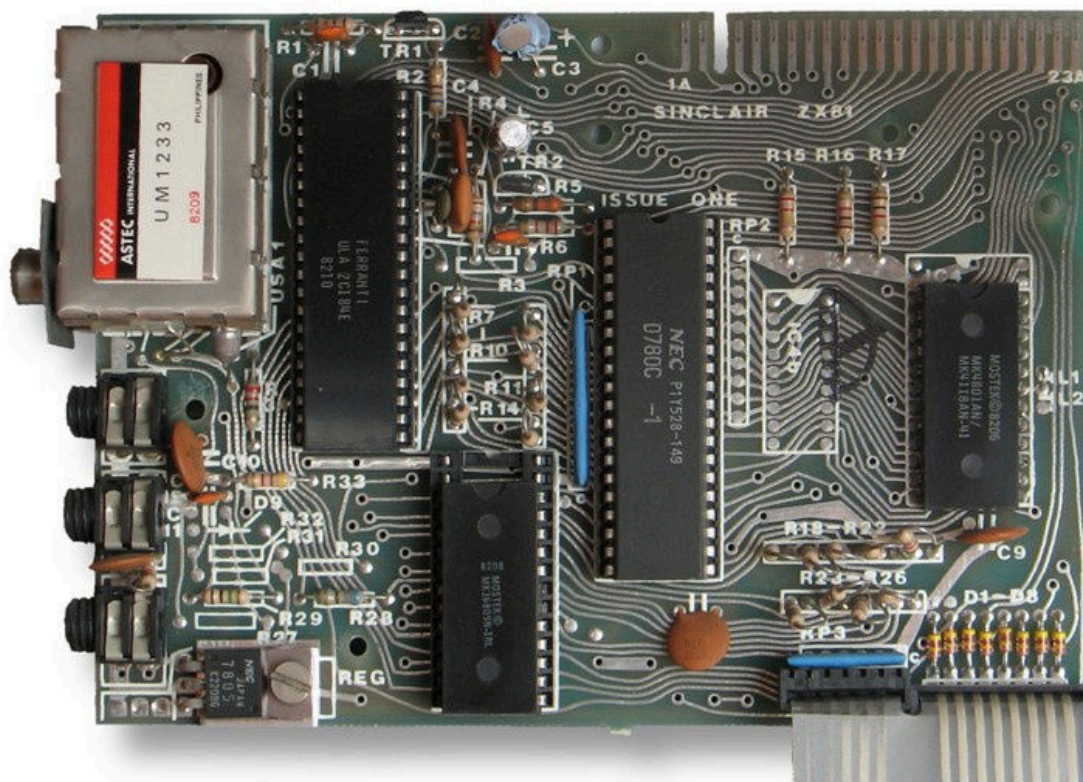


Fig. 3: The bare ZX81 motherboard. The CPU is the large central chip, while the ULA is located at the top left (source: Wikimedia Commons - author: Journey234)

The computer's standard memory consists of 1 KB of RAM and 8 KB of ROM. The RAM holds the user's program and its variables, as well as the video buffer: the display consists of 32x24 characters, for a total of 768 characters. To ensure that the screen does not occupy all of these bytes, a clever trick is employed so that the memory used reflects only the characters actually present on the screen. Each line is treated as a text string, terminated by a carriage return character: in this way, if the text to be displayed occupies only the first 10 memory locations, the length of the first line will be just 11 bytes (including the carriage return character) rather than 32. Another method for saving memory is the use of numeric tokens to store the language's keywords in RAM, so that even a command consisting of several letters actually occupies only a single byte of memory.

The ROM contains the 8K version of Sinclair BASIC: compared to the original BASIC integrated into the ZX80's 4 KB of memory, this version offers support for floating-point numbers as well as trigonometric functions. The first version of BASIC has two defects well known to users: the bug involving the square root of 0.25, which returns an incorrect value, and the lack of support for the ZX

Printer, even though the latter was introduced alongside the computer. Both flaws were resolved by a BASIC update which, strangely enough, was released several weeks after the machine went on sale, forcing Sinclair to replace the defective ROMs under warranty once computers began rolling off the assembly line with the corrected versions. Another interesting aspect of Sinclair BASIC is its behavior as a line editor, which differs from that offered by competing computers such as Commodore and Atari. Unlike those, in fact, the user cannot freely move the cursor around



Fig. 4: The numerous functions of each key on the computer (source: Flickr - author: Mikey Walters)



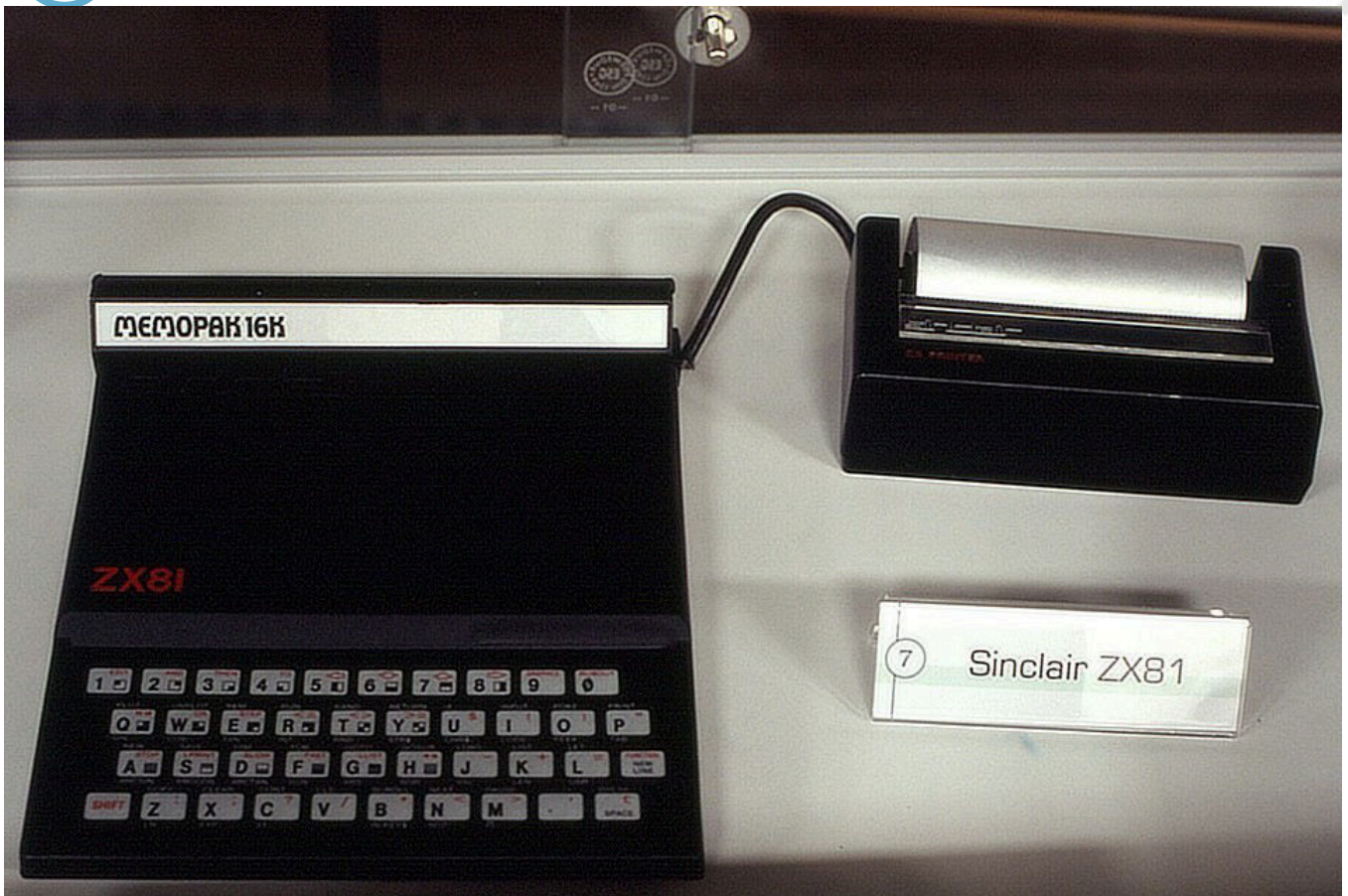


Fig. 5: The ZX81 with the “Memopak 16K,” an unofficial memory expansion, and the ZX Printer (source: Wikimedia Commons - author: Rama)

the screen and enter a line of code or a simple command wherever they please. Instead, the interpreter offers an input management mode over which it exercises greater control. Upon startup, the machine is in “Keyword” mode, indicated by the letter “K” in reverse: in this mode, pressing a key causes the full command listed above the key to appear. Once a keyword is entered, the computer switches to “Letter” mode, indicated by the letter “L”: in this mode, whatever the user types is what actually appears on the screen. By pressing a key combination, you can enter “Function” mode, represented by the letter “F”: pressing any key displays the function shown below the pressed key. Pressing another key combination puts the ZX81 into “Graphics” mode, which allows you to display the semi-graphic characters shown on the keys on the screen. Pressing the SHIFT key along with another key activates that key’s extra function (such as “RUBOUT” to delete text) or displays the symbols or commands shown in red. It’s a complex system, but one that helps minimize errors when entering commands and reduces the number of keys you need to press to enter programs.

Returning to screen management, if the user wants to edit a line of the program, they must use the dedicated EDIT command, since, as mentioned, the computer does not allow navigation within the screen. The requested line of the program appears in the last two lines of the screen, where the user can navigate using the cursor keys and make the necessary changes. The computer supports only a text-based display: since the characters are hard-coded in ROM, the user cannot modify them, so they cannot be redrawn. As mentioned, however, there are semi-graphic characters that the user can use to draw quasi-graphic images with a resolution of 64x48 pixels. The computer offers limited connectivity. On the left side are the RF connector for connecting the computer to a standard home television (the image is black-and-white with no sound), the power jack, and the audio input and output jacks, which are used to connect a standard magnetic tape recorder. On the back is the only port connected to the computer’s bus, used to connect memory expansions and peripherals. Sinclair officially offers only two accessories: the 16 KB RAM Pack, a memory expansion,





and the ZX Printer (Fig. 5). The memory expansion is unreliable: the expansion module shifts within its slot, causing the computer to freeze and resulting in the loss of any unsaved program in memory. Other manufacturers therefore supply memory expansions ranging from 16 KB to 64 KB.

Marketing

The computer was unveiled on March 5, 1981. At launch, the machine was available as a kit or fully assembled, priced at 49.95 and 69.95 pounds, respectively: despite the doubled ROM and the higher-quality case, thanks to the design simplification resulting from the use of the ULA, the computer cost less than its predecessor. Along with the ZX81, Sinclair introduced a 16 KB memory expansion called the “RAM Pack,” priced at 49.95, and the “ZX Printer,” a curious printer that used electricity to etch—via an electrode used in place of the usual print head—a silver-coated sheet laid on a dark backing: removing the silver creates a printed “dot.” This printer is also sold for 49.95 pounds.

Hoping for stronger sales than the ZX80, Sinclair struck a deal with Timex, a company based in Dundee, Scotland, to assemble the computer. Timex is an American company founded in the mid-19th century that specializes in watch manufacturing and has opened several factories around the world, including the Scottish one for the European market. In the early 1970s, the company—which had specialized in digital watches—found itself in crisis due both to the arrival of inexpensive mechanical watches from Eastern Bloc countries and to competition from new Japanese manufacturers of quartz watches. Timex sought to diversify to stay afloat and explored the home computer market, which was booming in the early 1980s. In light of this new interest and thanks to the success of the ZX80, Timex formed a commercial alliance with Sinclair, founding Timex Sinclair to produce home computers designed by Sinclair. However, initial problems on the production lines caused the company to fall behind schedule, so that at first the computers were shipped with lead times of about 9 weeks; it was not until the second half of 1981 that these problems were resolved and lead times dropped to

4 weeks.

Sinclair also struck a deal with a distributor, W.H. Smith, a retail chain with several hundred stores located in shopping malls, train stations, airports, and other high-traffic areas, selling stationery, books, newspapers, sweets, and more. Like Timex, W. H. Smith was also looking for new products to expand its offerings to the public, and after experimenting with quartz watches and electronic devices, it decided to create a section called “Computer Know-How” within its main stores. Following the success of the ZX80—the first computer available for less than 100 pounds—W. H. Smith contacted Sinclair right in the midst of the ZX81’s development, agreeing to sell it in the new computer section. The success was phenomenal: stores carrying the computer were literally swamped in the first few days after the launch, selling 10,000 units in the first five months and reaching 350,000 units in the first year on the market.

In the U.S., the ZX81 went on sale in late 1981 at a price of \$149.95 for the assembled version, or \$99.95 for the kit version. Sales were initially strong, with about 15,000 units sold per month, before leveling off at around 10,000 per month. These figures prompted Timex to strike a licensing agreement with Sinclair for the computer, which it began selling in mid-1982 as the Timex Sinclair 1000 (T/S 1000). Aware of the nature of the market there and the machines offered by the competition, Timex modified the computer by doubling its memory, so that the T/S 1000 was offered with 2 KB of RAM at a price of \$99.95 fully assembled—the same price to which the ZX81 had dropped during that same period. Thanks to this simple improvement, the T/S 1000 sold approximately 100,000 units per month over the next five months.



Fig. 6: The Lambda 8300, an Asian clone of the ZX81 (source: Wikimedia Commons - author: Fozz Texx)





Fig. 7: 1K ZX Chess



Fig. 8: 1K ZX Chess: the game board

By 1982, the computer was on sale in about 18 countries around the world, including Italy. The computer's widespread adoption, as well as its relatively simple design, led to the emergence of unauthorized copies. Notable among these were the TK85, produced by Microdigital Eletronica, and the CP-200, an improved variant from Prologica—both Brazilian companies. The Lambda 8300 (Fig. 6) was a clone produced by a Hong Kong company, which was in turn cloned by other Chinese companies. Many other clones appeared in the Warsaw Pact countries, driven by the inability to import Western electronics that these nations faced during those years.

Games

Despite the machine's limited capabilities, the software library available for the ZX81 is incredible. Countless users became budding programmers and wrote their own programs—which they used and then distributed to others—aided by the ease with which programs could be shared via ordinary cassette tapes played on equally common

cassette players. One such example is “1K ZX Chess,” a program written by a computer user that was first published in “Your Computer,” an industry magazine, in December 1982, and later distributed on cassette as well. Within the machine's standard memory of 1 KB, the programmer managed to fit a machine-language program that applies the standard rules of chess and also offers a rudimentary digital opponent for “computer-vs.-player” games (Figs. 7 and 8).

Aside from cases like this, games for the ZX81 are mostly text adventures or games that make use of its semi-graphic characters, leaving it up to the player and their imagination to overcome these limitations through their own creativity: “Adventure” (Fig. 9), published by Bug Byte in 1982, is one of the best-known text adventures, while “3D Monster Maze” became famous because the player is trapped in a 3D maze from which they must escape while avoiding a T-Rex that is hunting them (Fig. 10). Another game that became popular among users is “3D Defender” (fig. 11), set in space, in which the player must

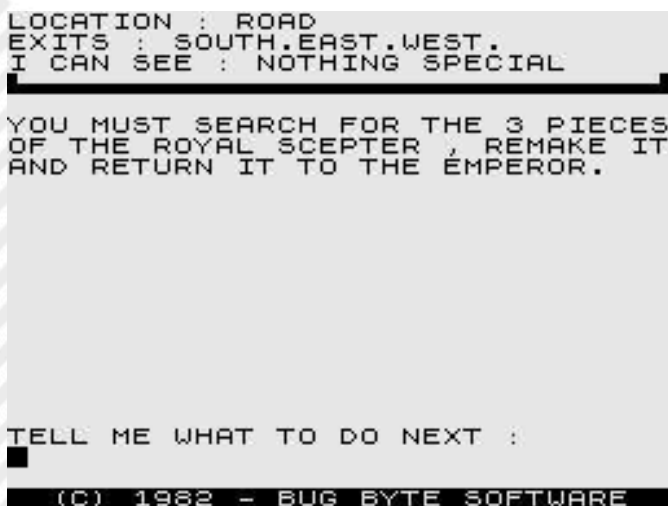


Fig. 9: Adventure



Fig. 10: 3D Monster Maze





Fig. 11: 3D Defender

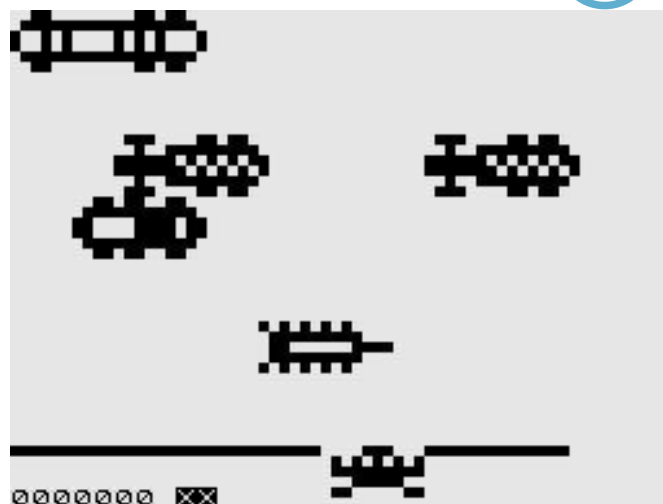


Fig. 12: Frogger

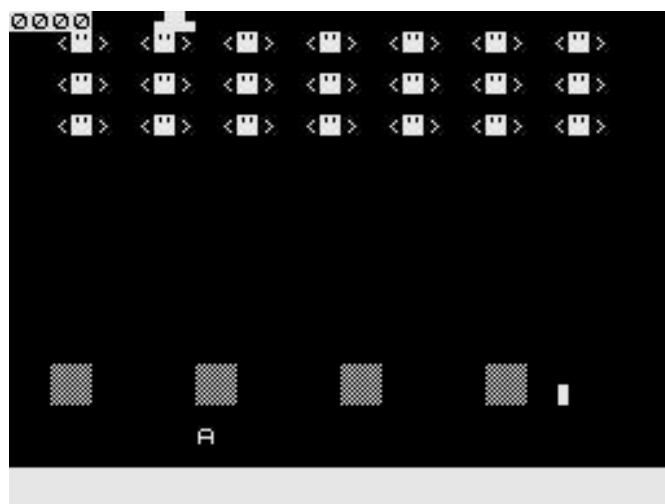


Fig. 13: Space Invaders

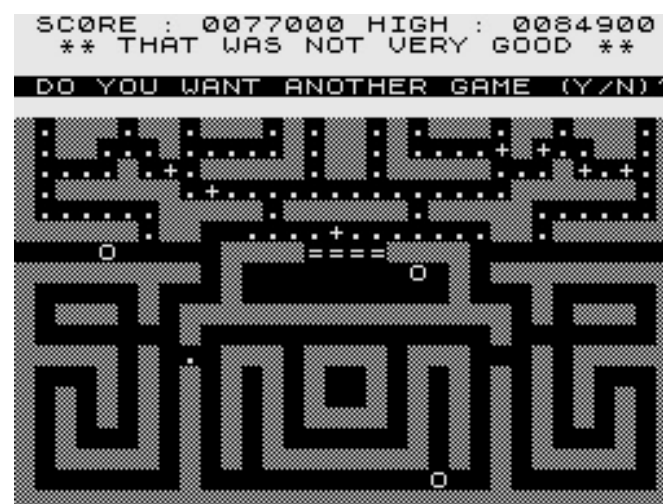


Fig. 14: Puckman

shoot at spaceships that move freely. There were also attempts—with varying degrees of success—to port classic arcade games of the era, such as “Frogger” (Fig. 12), “Space Invaders” (Fig. 13), and “Puckman,” a Pac-Man clone (Fig. 14).

A Success

By 1984, at the end of its commercial life, more than 1.5 million units of that small, rudimentary computer had been sold—a truly enormous number considering the machine’s limited capabilities. What also sealed its success was the advertising campaign behind the ZX81: Sinclair wanted to hit the mark and engage the “man on the street,” as he often referred to him—the person who would like a computer but can’t afford one because it’s too expensive and doesn’t know what to do with it. So how could he spark their interest? By offering a computer they could afford and telling them that, with the included manual, they’d learn to program and could do whatever

they wanted with that machine. That’s the secret to its success: ordinary people started buying it because the advertising campaigns clearly highlighted the affordable price, and the slogans implied that the machine would also help their children build a future. And why do they trust Sinclair? Sir Clive literally puts his reputation on the line, appearing in advertisements and explaining what an ordinary person can do with that computer. People believe him, and Sinclair becomes the champion of the common man fighting against the big names in the industry: back home, he becomes the British hero who uses British products to fight off foreign “invaders” and their computers. The ZX81 was the true instrument through which, in the early 1980s, computing entered the homes of British citizens. In the end, this basic computer, which recorded staggering sales, truly helped bring computing to the country and allowed Sinclair to believe even more firmly in his mission and develop its successor.





Salora Fellow and some of its tapes

by Jari Jalonen

In my previous article, I talked about the computer I bought around the turn of the millennium. I'm not entirely sure how many games came with the device. After moving several times over the decades, some may have been lost along the way, as happened with the original cassette drive. However, two games have remained in my possession: Tennis and Crash.

Why the Original Computer?

Although fully functional emulators are readily available online for playing various Lasertech VZ200 games on a modern PC—eliminating the need to load them from cassettes or invest in original hardware—the availability of original Salora Fellow units is extremely limited. However, cloned versions regularly appear on platforms like eBay.

Retrocomputing encompasses several approaches. Many enthusiasts prefer emulators for their accessibility and affordability. The original hardware is more than 40 years old, well beyond its expected lifespan. It is highly unlikely that engineers at Salora or VTech anticipated that their devices would still be in use in the 2020s. Although my unit currently works, hardware degradation is inevitable, making emulation a more practical alternative in theory. However, as an enthusiast, I value the authentic retrocomputing experience. For me, the process itself is deeply rewarding: tracking down the components, verifying the correct interface cable between the computer and the cassette player, and retrieving the power supplies and cassettes.

Next, I connect the computer to a display. I own a 14-



Fig. 1 - The Salora Fellow and some software cassettes



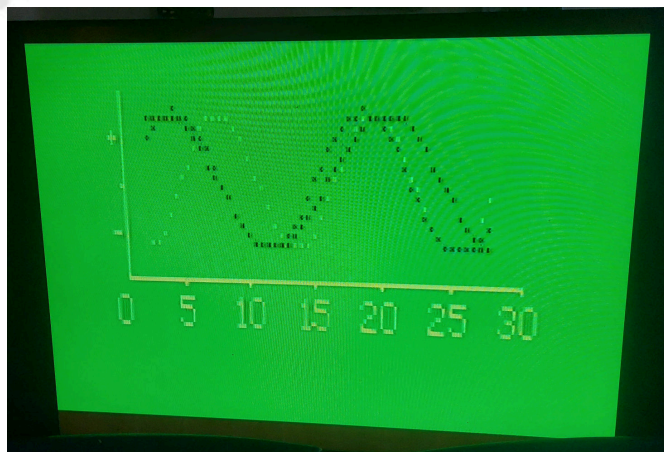


Fig. 2 - The Biorhythms program

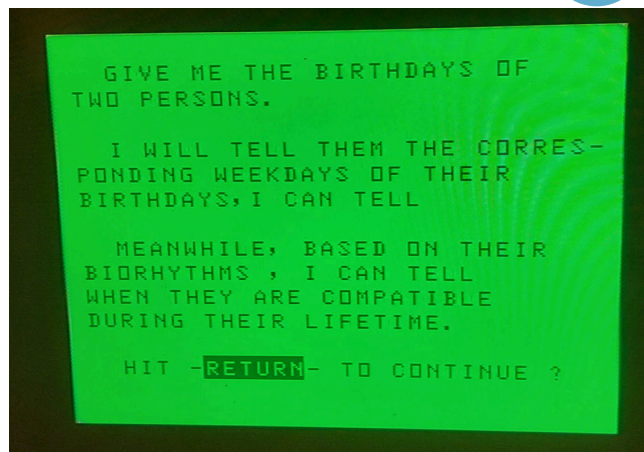


Fig. 3 - The Compatibility Calculator

inch Finlux CRT television—a piece of Finnish television manufacturing history—which would provide the most authentic pairing for the Salora Fellow. However, I also have a 50-inch Sony Bravia from 2015 equipped with a composite RCA input, which allows for a direct video connection. My first step is to verify that the system is functional by plugging in the power supply and routing the composite RCA cable to the appropriate video input. It's worth noting that the Salora Fellow has a built-in speaker; therefore, it lacks a dedicated audio output, relying solely on a composite video connection to the TV. Next, I connect the cassette player to the main unit and its respective power supply. Selecting the correct power supply is straightforward, since the adapters for both the cassette player and the computer are completely identical and interchangeable. In contrast, the Salora Manager—the Fellow's larger counterpart—requires extreme caution, as its power connectors are physically identical but deliver different voltages, potentially causing catastrophic hardware failure.

The next logical step is to select a suitable game cassette. I currently own four cassettes, though only two are actually games, as I'll explain later in this text. Upon powering on the computer and seeing its characteristic green screen, the procedure requires inserting the cassette, typing the command CLOAD [Enter], pressing PLAY on the cassette player, and waiting for the payload to load. This exact process encapsulates why, as a collector, I revere the

original hardware. Assembling the components and setting up a working system is immensely satisfying. The gameplay itself is only a fraction of this appeal. The anticipation after the CLOAD command is palpable. The cassette loads slowly, and shortly afterward, a faint high-frequency data signal emanates from the drive, indicating that data is being transferred successfully. Eventually, the word "Crash" or another executable filename appears on the screen, followed by the game's initialization. This specific tactile and auditory atmosphere simply cannot be replicated through emulation.

Mechanically, the computer functions exceptionally well, although its main vulnerability lies in the memory expansion interface. On my specific unit, the onboard connector is extremely loose. It lacks any physical locking mechanism, and the hard plastic housing is prone to wear and tear. Furthermore, a previous owner appears to have been overly meticulous—frequently disassembling, reassembling, and repackaging the device—which has gradually eroded the structural integrity of this low-quality plastic connector through repeated insertion.

As a result, extreme caution is required when programming or typing on the machine. Even a microscopic movement can disengage the RAM expansion for a nanosecond, instantly interrupting the connection and causing the system to reboot or filling the screen with corrupted and incoherent characters. I have attempted to clean and stabilize the interface, achieving a reasonable degree of





stability; however, occasional connection drops still occur. I now exercise the utmost caution to prevent these voltage spikes from destroying the Z80A processor. To minimize this risk, I limit my use of the computer and avoid using the keyboard whenever possible. For games, relying exclusively on the joystick allows me to avoid interacting with the main chassis.

I found a cassette for the Salora Fellow!

Given the extreme rarity of the Salora Fellow, locating compatible software is a significant challenge. I actively collect games for various platforms, including the SVI-318/328, SVI-728, and Commodore 64, using automated alert systems to notify me when items appear on the market. However, games for the Salora Fellow are so exceptionally rare that proactive searching is almost pointless. Most collectors have a “Holy Grail”—a device or title they never expect to see for sale. In Finland, retrocomputing enthusiasts primarily use four commercial platforms: the domestic marketplaces Huuto.net and Tori.fi, along with eBay. Although eBay does not have a localized Finnish domain, international shipping makes it feasible. The latest addition is Vinted. Unlike purely domestic platforms, Vinted allows purchases across regional borders, covering the Nordic countries (Sweden, Denmark, Norway), the Baltic states (Estonia, Lithuania, Latvia), and extending as far as Poland. Although it operates throughout Europe, Vinted remains highly regionalized; for example, a game listed on Vinted France

cannot be purchased from Finland. Nevertheless, I invest considerable time monitoring these markets, occasionally discovering gems for my 8-bit systems or portable electronics.

Last September, a small miracle occurred. While browsing my regional Vinted site in search of cartridges, I found the needle in the haystack: a game cartridge for the Salora Fellow. The item was Complete in Box (CIB), essentially in like-new condition, with the original cartridge case and insert. It even included a “16K RAM required” sticker, identical to the one on the Tennis game. It seems this was standard practice for both Salora and VTech, who routinely applied these stickers to the cases to verify the item’s complete authenticity. The price was only 10 euros. This low valuation is likely due to the fact that only 8-bit hardware enthusiasts understand the rarity of the system. Another reason is the scarcity of the units themselves. The user base is practically nonexistent; working units in Finland are largely confined to computer museums and a handful of private collectors. I purchased the cartridge immediately and received it without any issues. I rarely set up my system; it usually stays stored in a cardboard box in my attic room.

The Cassette

For the purposes of the previous article, I retrieved the device and decided to test the cassette’s functionality. It worked perfectly, containing three small utility programs. The first is “Biorhythms” (Fig. 2). Typically, biorhythm software calculates three cycles: emotional, intellectual, and physical. The resulting curves theoretically indicate peak cognitive performance, physical condition, and emotional states. The user enters their date of birth, and the program plots the corresponding curves, from which current and future states can be inferred. Regardless of one’s belief in biorhythms, this small application serves as an excellent demonstration of the Salora Fellow’s computational capabilities. The second program functions

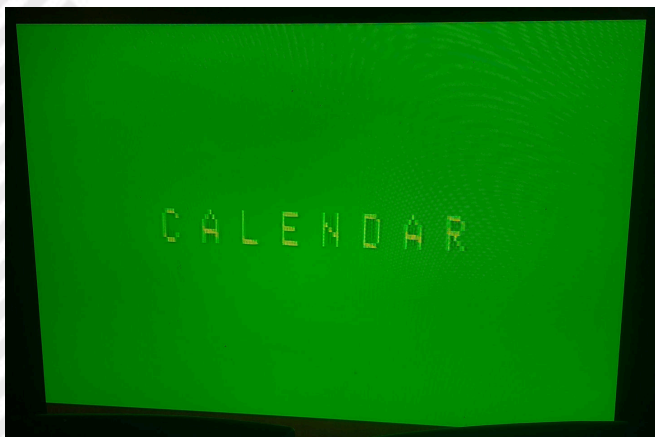


Fig. 4 - Calendar





as a compatibility calculator; by entering a couple's names and dates of birth, it assesses the suitability of their relationship (Fig. 3). The third program, "Calendar" (Fig. 4), requires the current date and a target date (such as a date of birth) to calculate the exact chronological age in days. It can process any historical date, such as January 1, 1000, and accurately calculate the number of days that have elapsed. All three are compact, fast-loading programs written in VTech 2.0 Basic.

Tennis

The game *Tennis* came bundled with the computer when I bought it at a flea market called "Kirpputori kaksitaso" in the city of Forssa, in the late 1990s or early 2000s. I'm not sure of its exact history, but while the insert and the top half of the cartridge case were intact, the bottom half of the cartridge shell was missing. I fixed this by transplanting the bottom half of a standard C-cassette and fusing it with the original top half. The case has a noticeable scratch or slight crack, but its structural integrity is intact and the hinges function normally.

Given the premise of *Tennis* and the primitive nature of the Salora Fellow, I initially assumed the software

lacked artificial intelligence, limiting it to local multiplayer. However, while loading the game to test the cartridge, I was pleasantly surprised to find options for both single-player against the CPU and two-player modes. Since I was alone, I proceeded with single-player mode and played for an extended period. The game's AI is surprisingly sophisticated. The CPU opponent's movement routines are programmed with remarkable skill, providing a balanced challenge that is neither trivial nor impossibly difficult. Although the graphics are primitive, it's easy to forget that the machine is powered by a Z80A processor—which shares its architecture with the ZX Spectrum, Spectravideo, Oric, and numerous other systems—providing ample processing power to run competent AI routines for a sports game. Poorly optimized code often results in an unbeatable, "perfect" CPU opponent, but skillful programming ensures a fair difficulty curve, giving the human player a legitimate chance to win.

Visually, the game is rudimentary, displaying the expected layout of a tennis court: a player sprite at the top, a net in the center, and a second sprite at the bottom. The color palette consists of shades of green, blue, and red. It is important to remember the Salora Fellow's hardware

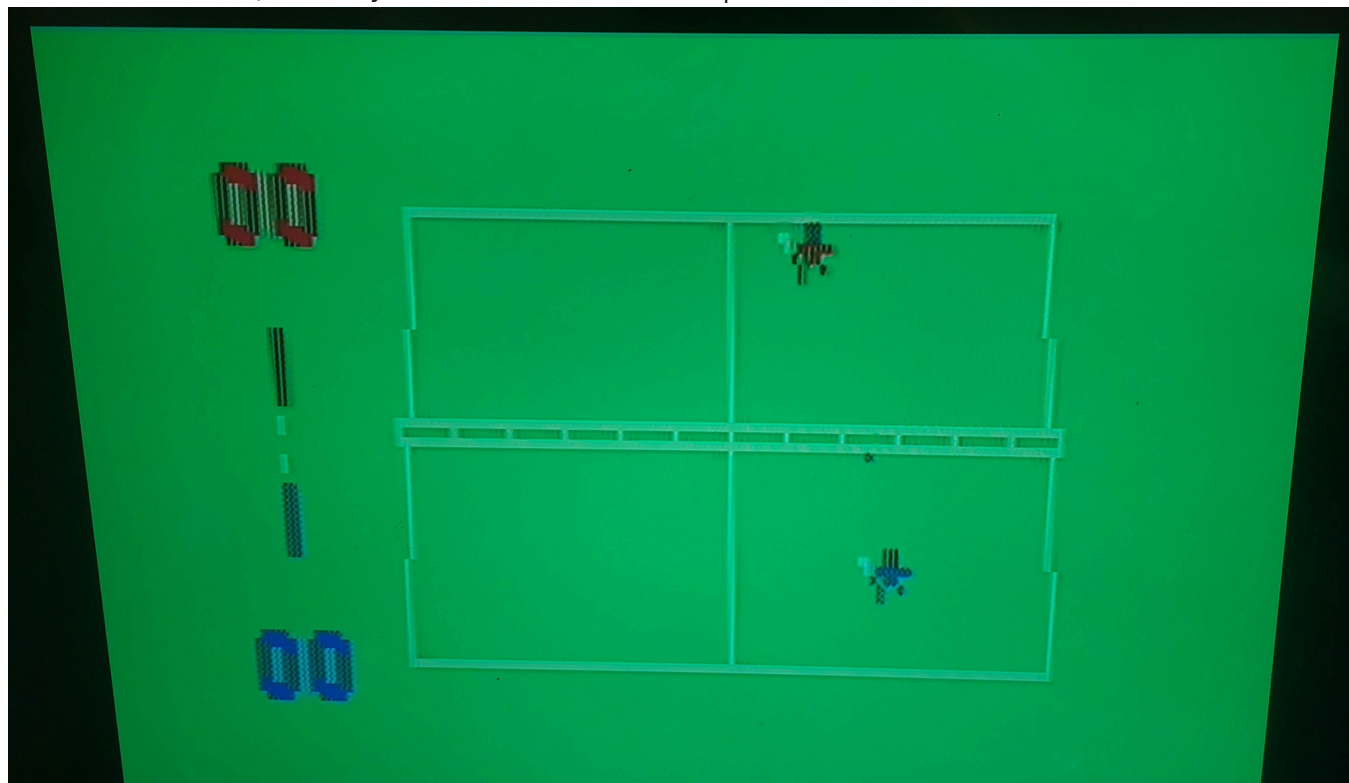


Fig. 5 - Tennis





limitation of displaying only four colors simultaneously. The right side of the screen tracks both players' scores, the current game, and the standard tennis score (15, 30, 45). The player sprites are controlled via joysticks. Since the Salora Fellow's joysticks are wired in pairs, a two-player game naturally assigns one stick to the red sprite and the other to the blue one. In my single-player session, I controlled the red sprite. The gameplay is smooth and responsive; the sprite follows joystick inputs seamlessly, as does the AI opponent. The human player always starts the match, but subsequent serves alternate between the human and the AI according to turn-based logic. It appears that the player positioned in the upper half of the screen always serves first. The ball bounces back and forth seamlessly.

One particularly fascinating detail is the ball's shadow. At first, I dismissed it as a mere aesthetic embellishment, but I soon realized that it serves as a mechanical indicator of the ball's altitude. A low trajectory means the ball is reachable, while a high trajectory indicates a lob that will likely go out of bounds, signaling to the player not to

waste time chasing it. This specific graphical implementation serves as a brilliant reminder of what was stated earlier: despite its primitive appearance, early 1980s software engineering standards were highly advanced, utilizing the world's most widely used processor to its fullest potential.

Crash

'Crash' is structurally much simpler than Tennis, but operates at a significantly higher speed. While a tennis match can easily last thirty minutes or an hour, Crash is characterized by rapid, short bursts of gameplay. The concept is difficult to describe precisely; it functions as a very orthodox Pac-Man clone. The screen displays three rectangular structures of various sizes, each with openings in the top, bottom, and side walls. The playing field is populated by dots, analogous to Pac-Man's pellets. The player sprites resemble larger dots, which abstractly represent rudimentary cars or motorcycles given their extreme speed. The goal is to collect all the dots from the maze while avoiding collisions with the opponent's vehicle. The pace is intense, requiring lightning-fast reflexes, and

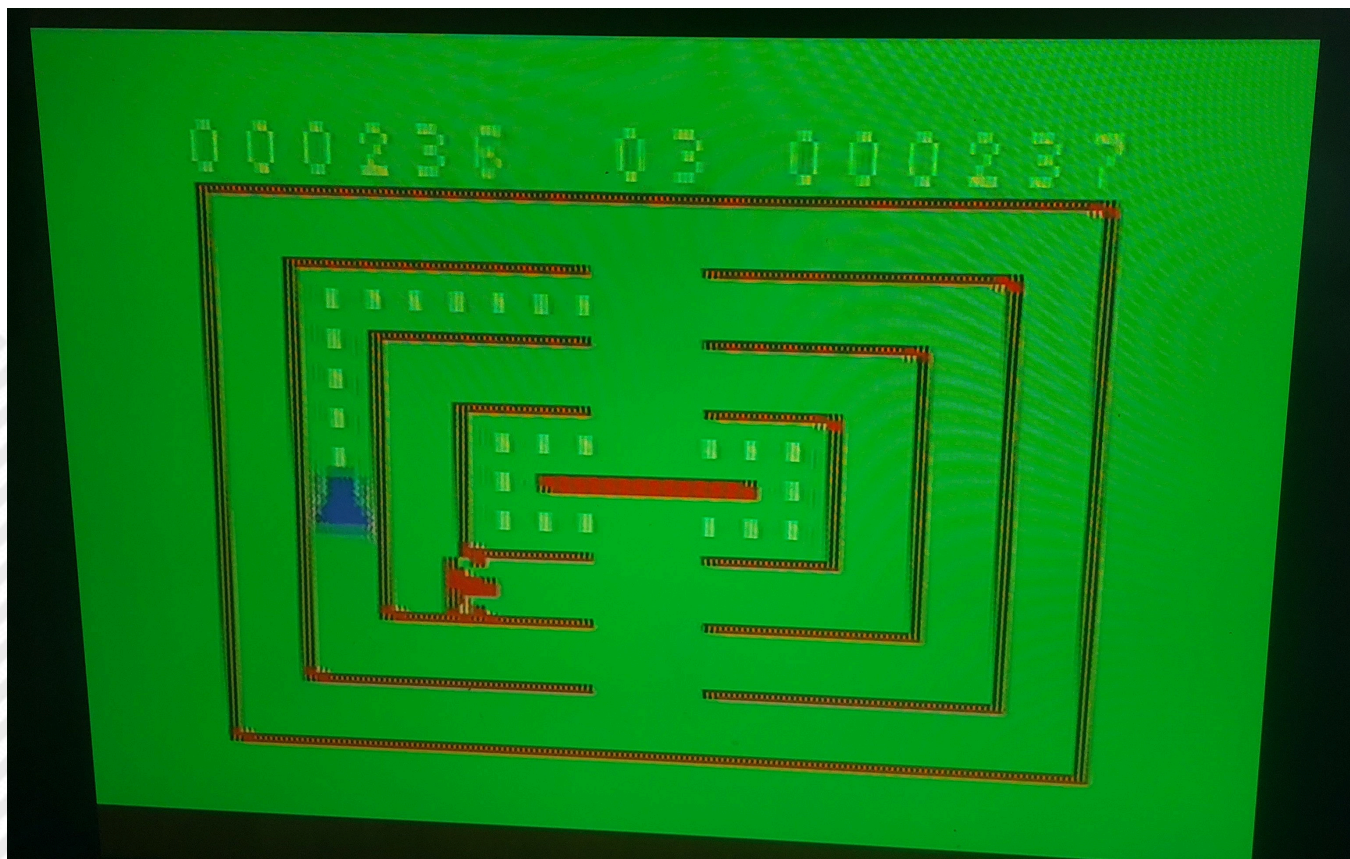


Fig. 6 - Crash





it proved highly challenging—my vehicle was regularly destroyed almost immediately.

My longest session lasted only two minutes, ending inevitably when I drove into a dead-end corridor while attempting evasive maneuvers against the CPU opponent. Escaping the enemy is only possible if the adjacent rectangle has a matching opening. The gameplay loop can be genuinely frustrating due to the constant collisions and the pervasive feeling that you can't escape your opponent. The audio design is also minimalist, consisting solely of synthesized engine noises and a police siren.

Mysterious Cassette

I was actively searching eBay for Salora Fellow-compatible software when I came across a VZ200 cassette titled “Laser Home-Computer VZ200” with the subtitle “Maschinenprogram-Monitor.”

The photos in the listing showed a small card listing

various game titles, some of which were checked off. Having no knowledge of German, I deduced that the cassette contained a machine code monitor along with a collection of games. I bought it a couple of years ago but left it untested. While reviewing the other cassettes for this article, I decided to finally check out this VZ200 tape. I inserted it into the drive and started the loading sequence, expecting a game to launch. Instead, it booted into a blank interface intended for machine-code programming.

The cassette contained absolutely nothing other than this machine-code monitor, and only on one side; side B was completely blank. Upon closer inspection of the insert, I realized that the card I had mistaken for an index of the included software was actually a checklist.

The original owner had evidently compiled a list of VZ200 games and marked the ones he owned in his personal collection. The only definitive conclusion was that those games were not present on this specific cartridge. Although slightly disappointing, the diagnostic value was significant: it definitively proved that VZ200-encoded cartridges work perfectly on the Salora Fellow architecture.

This successful hardware verification confirms that I can confidently purchase VZ200 game cassettes in the future, knowing that they are fully compatible with my system.



Fig. 7 - The 4 cassettes I own





The Beloved/Hated Datassette

by Roberto Lanciotti (dumpclub64.it)

There was a time when loading a game wasn't as simple as pressing a button—it required patience, a keen ear, and a good dose of luck. A time of temperamental cassette recorders, first and foremost the Commodore Datassette—the infamous C2N or 1530—in front of which you sometimes had to perform all sorts of incantations and even magical rituals.



And, let's be honest, when things went wrong, you also had to resort to a few little "tricks"... more out of necessity than anything else. Yeah, because when you happened to ruin a tape you'd just bought, who knew when you'd be able to scrape together the money to buy another one? So, between a failed load and a crumpled tape, the line between guilt and innocence became decidedly thin. "Oli, this cassette doesn't work... can you exchange it for me?" I'd say to Olindo, the newsstand owner near my house. And he, even if a little annoyed, would eventually exchange it for me... since he'd return it to the supplier anyway. And yes, because a cassette at the newsstand could cost up to 20,000 lire, which in the '80s was a lot of money to me. The fault, of course, always lay with that damned Datassette, but above all with the pinch roller, which would get dirty and, by squeezing the tape against the spindle, would mercilessly scratch it. In short, before you even realized it, the damage was done and there was nothing left to do: all that remained was the "petty" tactic of returning it to the newsstand.

Today, after so many years spent dumping "little cassettes" for the Dumpclub64 project, I've gained some experience: there are so many reasons why a load fails; cassettes as mass storage have always been a fragile ecosystem constantly on the brink of collapse. The first step in trying to fix the problem was—and always is—the same: listen to the "voice" of the tape.



You pop the cassette into the Datassette—I use models with built-in speakers like the Omega or Magnum. There was a huge variety of them, but inside they were practically identical—then, with headphones on, I try to figure out if everything is going the right way. Mechanical problems are the most common. The playback head wears out after prolonged use, or holding the play button in the pause position for too long damages and warps the tape. Back then, this happened often when making direct copies from cassette to cassette. Fast-rewinding seemed harmless, but in reality, after a while, it stretched the tape too much, eventually ruining it. And it didn't end there: placing a cassette near the speakers of a stereo or a TV could completely demagnetize it. The low-quality tape in some inexpensive cassettes also played a role, dooming them to perpetual failure from the start; just a couple of plays were enough to render them unreadable.

Yet, years later, many cassettes work even better than floppy disks, which seemed more modern but today often





present more problems.

Maintenance was essential: cleaning and lubricating the capstan and gears (I used oil from my mother's sewing machine!) and periodically replacing the belts.

In the end, every time you loaded a tape was an act of faith: not that we didn't have any... it was the Datassette that didn't have any faith in us.

- "Faith? Me? After all those recycled tapes you kept shoving in there... I'd say definitely not."

- "Oh, come on... but you could've cooperated every now and then instead of 'eating' the tape right when things were getting good!"

This concludes the emotional blame game between human and machine. Now let's move on to the real analysis: what happens, and why does a loading attempt fail?

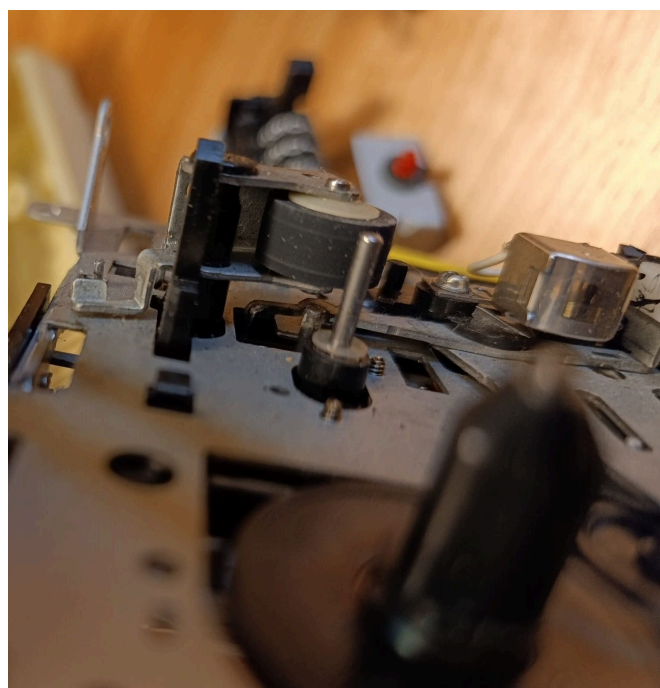


In most cases, the problem is the azimuth—that is, the alignment of the Datassette's read head. Using specialized software (such as Azimuth 3000), you can observe the signal on the screen: if the lines remain clean and separate,



everything's fine, but when dots or spikes appear near the centerline, the loader may misinterpret the data; jagged lines indicate poor-quality tape, while vertical ripples point to tracking issues.

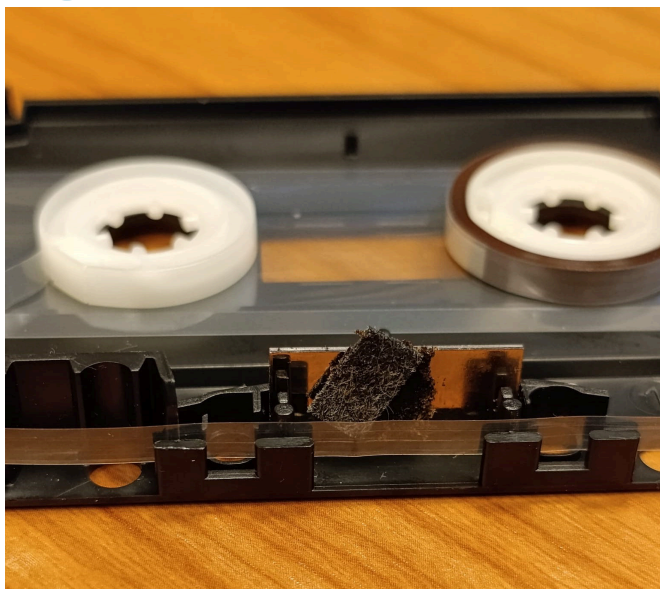
Mechanical problems include worn belts, hardened rollers, an unstable motor, and internal friction—all of which can cause irregular speed and reading errors. The cassette itself may also be to blame: slip sheets can shift and misalign the reels, while the pinch roller may lose grip if the felt peels off, making reading impossible.



Cleaning is often the most underrated solution: you should frequently clean the print head, capstan, and pinch roller with isopropyl alcohol or an acetone-free solvent.

If you encounter problems, cross-testing can help pinpoint the issue by trying different cassettes in different players.





There are also electrical issues—though less common—such as faulty cables, oxidized contacts, or an unstable power supply. Preventive maintenance remains essential, however: regular cleaning, proper storage, never leaving cassettes inserted for long periods, periodic rewinding (taking care to always ensure the tape is fully rewound), and high-quality media. There is no exact figure for how many cassettes were produced for the Commodore 64, but we're talking about thousands of games, millions of units sold, and massive distribution—including through magazines and newsstands.

The Datassette was much more than just a cassette player: it was a symbol of the Commodore 64 system—especially when you first bought it—and was an integral part of the computing experience (just think of how many fans there are of those loading screens, designed to pass the time during long cassette load times).

To fix those dreaded “?LOAD ERROR” messages, you had to be patient, listen for the sounds, adjust the tape head, rewind the tape, and hope the load would go all the way through. Every time the game screen appeared, we'd cheer—it felt like a victory. The greatest satisfaction came after many hours of work spent creating our own compilations: seeing a cassette start up on the first try immediately made it something special. Then we'd personalize it with handwritten labels and colorful covers, which promised incredible worlds even before pressing PLAY. Just looking at a case was enough to imagine space adventures,

futuristic races, or dungeons full of monsters.

Today, everything is much more immediate, but those cassettes taught us the value of anticipation and curiosity. Each tape held not only programs and video games, but also entire afternoons spent in front of the Commodore 64's blue screen—trials, errors, and small victories. And that was the whole experience: there were no updates, no patches to download, no endless installations, and no added content later on. The entire experience lived inside that little cassette, with its limitations and its unique charm. And that's precisely why preserving and sharing this material is so important. Because it's not just about saving old games or programs written in BASIC, but about preserving a piece of computing and cultural history that inspired millions of kids to dream.

And perhaps today, our children—accustomed to downloading games tens of gigabytes in size in just a few minutes—would go crazy after waiting thirty seconds in front of a Datassette. They'd look at us in disbelief and ask, “Did you really wait five minutes to start a game?” And we, with a half-smile, would answer yes. Because those five minutes contained it all: anticipation, hope, nervousness... and sometimes even the final drama of the ?LOAD ERROR.



But when everything worked, it was pure magic. A slow, noisy, fragile magic... and precisely for that reason, impossible to forget.

References

The Datassette (or Datasette) is the official cassette player





produced by Commodore for its 8-bit computers, including the Commodore 64. Marketed as the C2N (or VIC 1530) model for the C64, VIC-20, and PET, and the 1531 model for the C16 and Plus/4, this peripheral used standard audio tapes as an inexpensive storage medium.

Technical Specifications and Performance

Connectivity: It connected directly to the C64's cassette port via an integrated 12-pin cable, providing both power and data.

Speed: The transfer speed was very slow, approximately 60–70 bytes per second, requiring about 15 minutes to load a 60 KB game without fast loaders (Fast Loaders).

Capacity: A 90-minute cassette (45 minutes per side) could store approximately 150 KB of data per side.

Format: The recording format was sophisticated and error-resistant, using pulses of varying durations to encode data, distinguishing it from the simple audio tones used by other computers of the era.

scrolling; replacing the belts and cleaning the heads are common maintenance tasks.

Emulators: Today, it is possible to use hardware emulators such as the Tapuino, which connects to the cassette port and reads .TAP files from a microSD card, offering instant loading speeds and greater reliability than physical tapes.

Azimuth 3000 (or Azimuth Adjustment Cassette) is a classic software program from 1983, developed by Interceptor Micros, designed specifically for calibrating the azimuth of the heads on Commodore data cassettes (C64, C128, VIC-20). The program displays a numeric counter and emits beeps while reading a cassette, allowing you to adjust the alignment screw (accessible through the hole in the cover) until the counter reaches the optimal value of 8000 without resetting.

Maintenance and Modern Alternatives

Maintenance: Original models often suffer from deterioration of the drive belts, which causes loading errors and slow





Acorn Archimedes: 32-bit Technology from the Future

Please note: this is only a possible “uchronian” scenario created by Olivetti

by Tommaso Pitturru

June 1987. While Commodore and Atari were vying for supremacy in the 16-bit market with the Amiga 500 and Atari ST, respectively, and Sinclair had spectacularly failed with its beautiful yet problematic QL, Acorn Computers introduced a family of computers based on a radically different architecture: the Acorn Archimedes. It was, without a doubt, the first line of home computers—a term that may be an understatement for a machine of this caliber—to be based on the newly developed 32-bit ARM RISC processor.

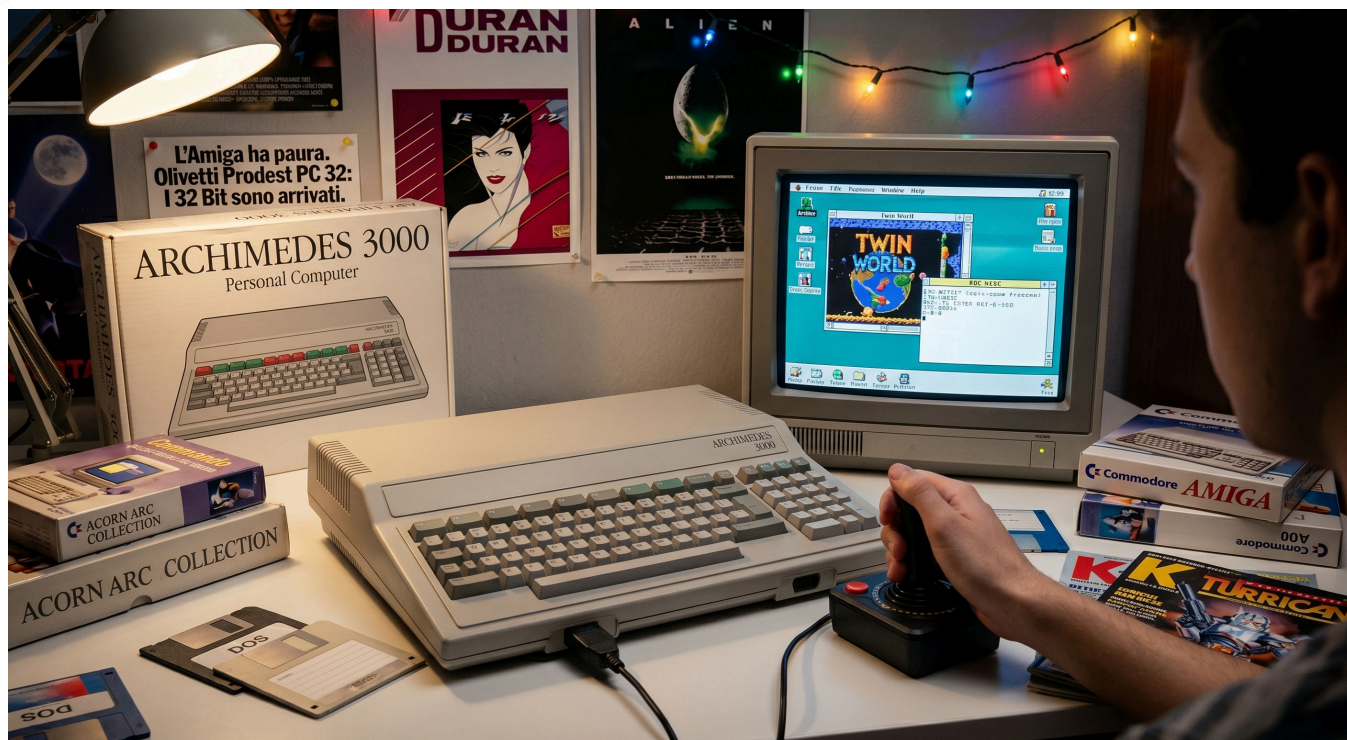
On paper, the hardware outclassed rival machines: its beating heart was the ARM processor, capable of delivering computing power far superior to that of the Motorola 68000 found in the Atari ST and the Amiga, and in some CPU-intensive operations, it even outperformed certain professional minicomputers of the era, such as the DEC VAX 11/780. At the same time, a comparison with the dominant systems on the market painted a clear picture: compared to IBM-compatible PCs based on Intel 8086/80286 processors and the early Apple Macintosh models with Motorola 68000 CPUs, the Archimedes offered significantly superior computational performance in

handling native code and software-based graphics, even though it lacked the same level of software maturity and ecosystem. The ROM-resident operating system, Arthur (later renamed RISC OS), combined with a lightning-fast implementation of BBC BASIC, provided users with an extremely responsive working environment.

The hardware subsystem was organized around a set of specialized components—a sort of system chipset—comprising the MEMC, IOC, and VIDC. In particular, the VIDC (Video and Interface Controller) directly managed video and audio generation, determining resolution, color depth, and signal timing, as well as driving the DAC for audio output. The MEMC (Memory Controller) coordinated memory access between the CPU and peripherals, while the IOC (Input/Output Controller) managed interrupts and I/O devices. This integrated system, closely aligned with ARM's RISC philosophy, drastically reduced system latency and contributed to the machine's overall sense of fluidity.

The multimedia capabilities were also quite impressive, natively supporting 256-color graphics at various resolutions ranging from the standard 320x256 pixels for video games to the more technical 640x256 and 640x512 resolutions





when paired with a Multisync or RGB-compatible monitor. These resolutions, which increased in later models, had an impact on total RAM; therefore, for higher-resolution settings, it was preferable to reduce the number of colors that could be used simultaneously. The 8-bit stereo PCM audio subsystem was capable of handling up to eight independent voices—a remarkable feature for the time—although in practice, sound quality depended on the trade-off between the number of channels used and the available bandwidth.

The sheer raw power of the 32-bit processor allowed for the rendering of software-based sprites at impressive speeds, partially compensating for the absence of the complex dedicated chips that made the Amiga so successful, such as the blitter, the Copper, and support for hardware sprites.

Despite these promising foundations, conservative design and marketing choices held the system back. For example, in the gaming sector, nearly all models lacked a standard interface for digital joysticks, forcing players to fumble with the Z, X, ?, /, and Enter keys—an awkward habit inherited from the earlier BBC Micro. But the Archimedes' true downfall was its price: the first models (the 300 and 400 series) were sold at exorbitant prices, ranging from 899 to 1,499 pounds. The compact A3000 model, with its keyboard built into the computer to compete directly with machines from Commodore and Atari, arrived very late, only in May 1989, at the still-high price of 799 pounds.

The Archimedes was thus relegated to a comfortable but limited niche due to its higher price compared to the competition, finding its main audience in educational settings or among pioneers of computer music.

But history might have taken a completely different turn if Olivetti's management—which at the time held a stake in Acorn—had imposed a different, more aggressive business strategy focused on the mass market from the very beginning.

Up until that point, the Ivrea-based company had attempted to penetrate the European domestic market under the "Olivetti Prodest" brand, initially marketing third-party 8-bit machines: the PC 128, derived from Thomson (the MO6 model), and the PC 128 S, a repainted and rebranded system based on Acorn's BBC Master Compact technology. It then ventured into the 16-bit arena with the PC 1, a compact IBM-compatible system designed in Italy that, though well-received, failed in the domestic market because it had grossly underestimated the importance of gaming capabilities, ultimately being outclassed by better-equipped machines such as the Amiga and the Atari ST.

In this alternate timeline, the executives of the newly formed company Prodest International decide to completely change their approach. Instead of chasing after the 8-bit hardware market dominated by others or conforming to the IBM standard for home users, the team in Ivrea





realizes that Acorn technology has placed the ultimate weapon in their hands to crush the competition: a true 32-bit “Amiga-killer.”

Leveraging Olivetti’s significant economies of scale, the marketing of expensive desktop systems with separate keyboards was immediately halted. Instead, funding was directed toward an immediate optimization of the production chain to bring forward the launch of a compact model similar to what would later become the A3000, distributing it in Italy, France, Germany, and Spain under the better-known Olivetti brand. The machine debuted in the summer of 1987 at a starting price of 999,000 Italian lire, later reduced during the Christmas season, putting it on a direct collision course with its 16-bit rivals.

To break into the video game market, Olivetti imposed two crucial hardware changes on the austere original Cambridge design. First: the direct inclusion of two standard joystick ports on the motherboard, eliminating once and for all the absurd keyboard shortcut combinations. Second: a modern advertising campaign featuring ads in magazines and newspapers—both specialized and general-interest—and commercials aired during prime time on TV, similar to the approach used for the 8-bit Prodest line, aimed at highlighting the machine’s true multimedia capabilities.

Developers and software companies, drawn by the potential of the 32-bit CPU and the system’s efficiency even when running code written in BBC BASIC, began to embrace the new architecture. The library of video games for the Archimedes, historically limited to about 400 commercial titles, could have grown significantly in this scenario thanks to more favorable market conditions and the platform’s wider adoption. Titles capable of fully exploiting the available hardware—in addition to action games or vector simulations such as *Elite*, *Chox Away*, and *Twin World*—highlighted the remarkable efficiency of software rendering on ARM, often delivering superior performance in 3D scenes or geometric calculations compared to competing systems. This entirely CPU-based approach represented a different direction compared to the Amiga and Atari ST architectures, where the advantage in gaming was primarily tied to 2D graphics hardware and sprite and scrolling effects rather than three-dimensional geometry—which would only become central years later in the PC world with the rise of CPU-based 3D rendering

and, subsequently, the introduction of the first dedicated graphics accelerators (GPUs).

In such a scenario, the Acorn Archimedes would not have remained confined to a mere educational niche or relegated to a few research laboratories. All it would have taken was a bit of commercial foresight on Olivetti’s part and a willingness to abandon the modest compromises of the historic Prodest line—which prioritized profit at the expense of innovation—for the Olivetti Archimedes, which never saw the light of day, to establish itself as a benchmark in the personal computer sector, bringing ARM architecture into homes and offices, and forcing primarily Commodore and Atari—but also IBM and Apple—to prematurely chase after the 32-bit revolution.

N.B. – The images accompanying this article were generated by the author using AI.

Ucronia (also known as alternative history or allohistory) is a narrative genre based on the hypothesis that a key historical event unfolded differently from how it actually happened.

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The 12-Card Trick (for the C64, but not only...)

by *Eugenio Rapella*

I have already had the opportunity, in these pages, to analyze a magic trick presented by Matt McGurk on YouTube. Matt is extremely likable and remarkably skilled; this “12-card trick” is truly astonishing. We will analyze it with the help of our Commodore, but before involving the C64, you can try performing it yourself and showing it to your friends and family: the effect is impressive!

You can find the video at the link below:

https://www.youtube.com/watch?v=VbZsHFpA-_c

(McGurk adds a few extra moves to enhance the trick, but they are not essential.) In any case, here is a description of how the trick works. Give it a try! It is easy to perform, and you will not regret it.

Step 1: Choosing the Secret Card

From a packet of 12 cards (the actual cards do not matter), have a spectator select a card that you do not see, but which the spectator must memorize. You must then arrange things so that the chosen card ends up in the second position from the top. From now on, card positions will always be counted from the top of the packet. A card will be called face down if its back is facing upward (so its value is hidden), and face up otherwise.

In the video, McGurk demonstrates several ways of positioning the chosen card while pretending to shuffle the packet and so on. For selecting and positioning the card, I use the following method, which is simple enough for anyone to perform.

Spread the 12 cards in a fan and invite the spectator to choose one and memorize its value (without showing it to you). The spectator places the card face down on the table, and you place the remaining packet on top of it.

Now, under the pretext of recounting the cards to make sure there really are twelve, count off three cards and place them into a pile. Then count another three cards and place them on top of the first pile. Next count two cards, then another two, and finally drop the last two cards (without counting them aloud) on top of the pile you have built.

This procedure leaves you with a face-down packet in which the secret card is in the second position from the top. (Naturally, you may use other methods, but you must arrive at the same arrangement.)

If the spectator points out that this procedure allows you to know where the secret card is located (many people do not even notice), emphasize that it does not matter because you still have no idea which card it actually is. A little psychology goes a long way!

Step 2: Turning Some Cards Face Up

Now tell the spectator that, to make the trick more interesting, you are going to turn some cards face up.

Slide aside the top three cards and turn the fourth card face up so that its value is visible. Then leave one card face down and turn the next one face up. Again leave one card face down and turn the following card face up. Finally, leave the second-to-last card face down and turn the last card face up.

You will end up with five visible cards:

D D D U D U D U D U D U

where D stands for face down and U stands for face up. The second card (face down) is the secret card.

Step 3: The Mixing Phase

Now comes the interesting part.

Tell the spectator that, in order to thoroughly mix everything, you will perform a series of operations, and that he or she will decide which operation to perform and when to stop.

There are three types of operations:

OPERATION 1 (M1): Cutting the Packet

Lift a packet containing any number of cards and place it beside the remaining cards. Then place the remaining packet on top of it.

You may even ask the spectator to perform the cut personally, allowing them to choose how many cards to lift. For example, if the packet is:

A 2 3 4 5 6 7 8 9 10 J Q

and you cut after the fourth card, the final order becomes:

5 6 7 8 9 10 J Q A 2 3 4

OPERATION 2 (M2): Reversing the Top Two Cards





Take the top two cards as a block and flip them over together. Face-down cards become face-up, and vice versa. For example, if the top of the packet consists of face-down A and 2, after the operation the top will consist of face-up 2 and A.

OPERATION 3 (M3): Reversing the Entire Packet

Turn the entire packet over as a single block. Again, face-down cards become face-up and vice versa.

For example, if the packet consists of the following face-down cards:

A 2 3 4 5 6 7 8 9 10 J Q

after the operation it will become:

Q J 10 9 8 7 6 5 4 3 2 A

all face up.

Step 4: Let the Spectator Decide

As mentioned above, perform a sequence of operations, alternating among the various types (for example: M2, M1, M2, M3, ...), occasionally letting the spectator choose. You might ask, "Shall we flip the entire packet?" and allow the spectator to decide.

You can continue this process for quite a while. The succession of operations turns face-down cards into face-up cards and vice versa, moves cards from top to bottom, and generally creates the impression of a thorough mixing.

Step 5: Dealing the Cards

When the spectator decides that enough is enough, deal the 12 cards one at a time from left to right, without turning them over, forming four piles of three cards each. Place the top card of the packet as the first card of the leftmost pile, the second card as the first card of the second pile, the third card as the first card of the third pile, and the fourth card as the first card of the fourth pile. Then repeat the process with the next four cards, again from left to right, and finally with the last four cards.

At the end, you will have four piles of three cards each in front of you. Some cards will be face down and others face up.

Step 6: The Finale

We are almost done.

Starting with the pile on the right, lift it and fold it over onto the third pile, as if you were closing a book.

Do the same with the new third pile, placing it onto the second pile using the same motion, and finally place the

second pile onto the first pile in the same way.

You now once again have a single packet of 12 cards.

Ask the spectator to name the secret card.

Spread the cards on the table: every card will be face down except one—the secret card!

Try it a few times and you will see that the effect is genuinely astonishing.

The trick itself is merely an excuse to spend some time working with Commodore 64 BASIC. In the end, with the help of our Commodore, we will uncover its secret, which turns out to be much simpler than it first appears.

The idea is to track what happens to the packet during the various operations. To do this, we introduce the array D() with the statement:

```
DIM D(12)
```

and define:

D(X) = +2 if the card in position X from the top is the secret card and is face down.

D(X) = -2 if the card in position X from the top is the secret card and is face up.

D(X) = +1 if the card in position X from the top is not the secret card and is face down.

D(X) = -1 if the card in position X from the top is not the secret card and is face up.

Thus, positive values correspond to face-down cards and negative values correspond to face-up cards. For convenience, we will not use the element D(0).

Based on the arrangement described earlier, the initial state of the array D() is:

D(1)=1; D(2)=2; D(3)=1; D(4)=-1; D(5)=1; D(6)=-1; D(7)=1; D(8)=-1; D(9)=1; D(10)=-1; D(11)=1; D(12)=-1.

The card to be identified is in the second position; the first three cards are face down (positive values), while the 4th, 6th, 8th, 10th, and 12th cards are face up (negative values).

Our goal is to follow the changes in the array D() throughout the trick. We will use a temporary array, ND(), to keep track of the cards during each operation. Once an operation is completed, the contents of ND() will be copied back into D(), which will then be ready for the next stage of the trick.

After the beginning of the program:

```
100 dim nd(12),d(12)
```





```
120 for x=1 to 12: d(x)=1:next
140 d(2)=2:d(4)=-1:d(6)=-1:
160 d(8)=-1:d(10)=-1:d(12)=-1
```

We now look at the instructions that implement the three moves we have described.

OPERATION 1 (M1): “Cutting” (or “lifting”) the packet
A packet of K cards is lifted, where K is an integer between 1 and 11:

```
280 for x=12 to 13-k step -1
300 nd(x)=d(x+k-12):next x
320 for x=1 to 12-k:nd(x)=d(x+k):next x
```

The last cards of the “new” packet ND(..) are the first cards of D(..); for example, if K = 3, we obtain (lines 280–300):

X	ND (X) =D (X+3-12)
12	ND (12) =D (12+3-12) =D (3)
11	ND (11) =D (11+3-12) =D (2)
10	ND (10) =D (10+3-12) =D (1)

and continuing, still with K = 3, we obtain (line 320):

X	ND (X) =D (X+3)
1	ND (1) =D (1+3) =D (4)
2	ND (2) =D (2+3) =D (5)
...	
8	ND (8) =D (8+3) =D (11)
9	ND (9) =D (9+3) =D (12)

the “new” first nine cards are those starting from the fourth position onward of the original packet.

OPERATION 2 (M2): Flip the top two cards

The first two cards are turned over as a block:

```
500 nd(1)=-d(2):nd(2)=-d(1)
520 d(1)=nd(1):d(2)=nd(2)
```

The sign change ensures that a “face down” card becomes “face up” and vice versa. At line 520 the new cards are copied back into D(..).

OPERATION 3 (M3): Flip the entire packet

The entire packet is reversed as a block:

```
700 for x=1 to 12:nd(x)=-d(13-x):next
720 for x=1 to 12:d(x)=nd(x):next
```

At line 700, the first card becomes the twelfth, the second

becomes the eleventh, and so on; here again the sign change transforms “face down” cards into “face up” cards and vice versa. At line 720 the “new” packet replaces the old one.

We still need to see how D(..) changes when we perform what we will call the “final operation”, that is, when the four piles are formed and then recombined into a single packet.

When forming the four piles of three cards each, the cards are arranged as follows:

D (1)	D (2)	D (3)	D (4)
D (5)	D (6)	D (7)	D (8)
D (9)	D (10)	D (11)	D (12)

When the last pile is placed on top of the third one while being flipped over, D(12) is placed over D(11), and the third pile becomes a stack of six cards which, from bottom to top, are:

D(3), D(7), D(11), -D(12), -D(8), -D(4)

The values of the last three elements are negated because the pile is flipped.

Now the third pile, just created, is flipped and placed on top of the second. The second pile becomes a new stack of nine cards which, from bottom to top, are:

D(2), D(6), D(10), D(4), D(8), D(12), -D(11), -D(7), -D(3)

The last six elements have changed sign due to the “flip”.

We are at the end: the pile of nine cards is flipped and placed on top of the one formed by the first three. We obtain: D(1), D(5), D(9), D(3), D(7), D(11), -D(12), -D(8), -D(4), -D(10), -D(6), -D(2)

In summary, the BASIC program segment that performs the “final operation” is (numbering returns to being from the top):

```
1020 nd(1)=-d(2):nd(2)=-d(6)
1040 nd(3)=-d(10):nd(4)=-d(4)
1060 nd(5)=-d(8):nd(6)=-d(12)
1080 nd(7)=d(11):nd(8)=d(7)
1100 nd(9)=d(3):nd(10)=d(9)
1120 nd(11)=d(5):nd(12)=d(1)
```

We are now ready to assemble the various parts and obtain the program MCGURK2.BAS:





```

100 poke 53280,6:poke 53281,6:print
chr$(147),chr$(5):w=rnd(-ti)
120 dim nd(12),d(12):print"the 12 cards trick":print
140 for x=1 to 12: d(x)=1:next
160 d(2)=2:d(4)=-1:d(6)=-1:
180 d(8)=-1:d(10)=-1:d(12)=-1
200 printchr$(113);"=face down card; ";chr$(119);"=face
up card"
220 printchr$(122);"=secret face-down;
";chr$(115);"=secret face-up"
240 print:print"operations: 1 2 3 or f (final)"
260 print"press the corresponding key"
280 gosub 1140
300 print:print"select operation: 1,2,3,f"
320 get r$: if r$="" then 320
340 y=-(r$="1")*1-(r$="2")*2-(r$="3")*3-(r$="f")*4
360 on y goto 400,600,720,860
380 goto 320

390 rem operation 1
400 k=int(rnd(1)*11)+1
420 print"cut off";k;" cards"
460 for x=12 to 13-k step -1
480 nd(x)=d(x+k-12):next x
500 for x=1 to 12-k:nd(x)=d(x+k):next x
520 for x=1 to 12:d(x)=nd(x):next
540 rem end of operation 1
560 gosub 1140
580 goto 300

600 rem operation 2
620 nd(1)=-d(2):nd(2)=-d(1)
640 d(1)=nd(1):d(2)=nd(2)
660 rem end of operation 2
680 gosub 1140
700 goto 300

720 rem operation 3
740 for x=1 to 12:nd(x)=-d(13-x):next
760 for x=1 to 12:d(x)=nd(x):next
780 rem end of operation 3
800 gosub 1140
820 goto 300

860 rem final operation

```

```

880 nd(1)=-d(2):nd(2)=-d(6)
900 nd(3)=-d(10):nd(4)=-d(4)
920 nd(5)=-d(8):nd(6)=-d(12)
940 nd(7)=d(11):nd(8)=d(7)
960 nd(9)=d(3):nd(10)=d(9)
980 nd(11)=d(5):nd(12)=d(1)
1000 for x=1 to 12:d(x)=nd(x):next
1020 rem end of final operation

1040 gosub 1140
1060 print:input"another run (y/n)";e$
1080 if e$="y" then run
1100 if e$="n" then end
1120 goto 1060
1140 rem print of d(..)
1160 print:d$="": for x=1 to 12
1180 if d(x)=2 then d$=d$+chr$(122)+" "
1200 if d(x)=-2 then d$=d$+chr$(115)+" "
1220 if d(x)=1 then d$=d$+chr$(113)+" "
1240 if d(x)=-1 then d$=d$+chr$(119)+" "
1260 next
1280 print:printd$
1300 return

```

After the basic initializations and the jump to subroutine 1140, which is responsible for printing the current composition of the packet, at line 320 the user can choose which move to perform.

At line 340, variable Y takes one of the values 1, 2, 3, or 4 depending on whether keys 1, 2, 3, or F are pressed. At line 360, based on the value of Y, control is transferred to one of the statements 400, 600, 720, or 860: each one handles one of the four operations.

In the case of "operation 1", the number K of cards involved in the "cut" is randomly chosen by the C64 from 1 to 11 (line 400).

At the end of operation 1, or of operations 2 or 3, the current composition of the packet is displayed (GOSUB 1140), and control returns to line 300 for a new operation. If instead the user chooses to perform the "final operation" (key "F"), line 360 sends execution to line 860. Here the "new packet" (array ND(..)) is constructed through this operation; at line 1000 ND(..) is copied into array D(..), which is then displayed (1040 GOSUB 1140).

Run MCGURK2 several times: perform as many operations as you like (1, 2, 3) in any order (for example: 1, 2, 1, 3,





1, 2, 1, 1, 3...). When you eventually choose the “final operation” (F)... surprise! The packet will still show all cards facing the same way, except for the “secret card”, which will show the opposite orientation!

Below (Fig.1) is an example where only keys 1 and F were pressed.

The MCGURK2 program not only allows you to perform the magic trick quickly, but also... to discover the secret! Make a simple modification: at line 160, replace $D(2) = 2$ with $D(2) = -1$. In this way you obtain a packet with no more “secret card”, where “face down” and “face up” alternate.

When you perform operation 2 or operation 3, nothing changes at all (try it!). If you perform operation 1 and K is even, nothing changes; if K is odd, the DUDU..DU

alternation is replaced by UDUD..UD. In any case, when you proceed with the “final operation”, all cards end up facing the same direction.

Now, without further involving our C64, if you prepare a 12-card packet alternating “face down” and “face up”, you will notice that when you create the four piles, each pile will consist of three cards facing the same way: the piles in odd positions will be face up, and those in even positions face down, or vice versa.

When you recombine everything, all cards end up with the same orientation! This is why, in the original trick, the “secret card” is the only card that breaks the symmetry, giving rise to the effect we have just seen.

Once again, our Commodore has helped us uncover a mystery: it never ceases to amaze us!

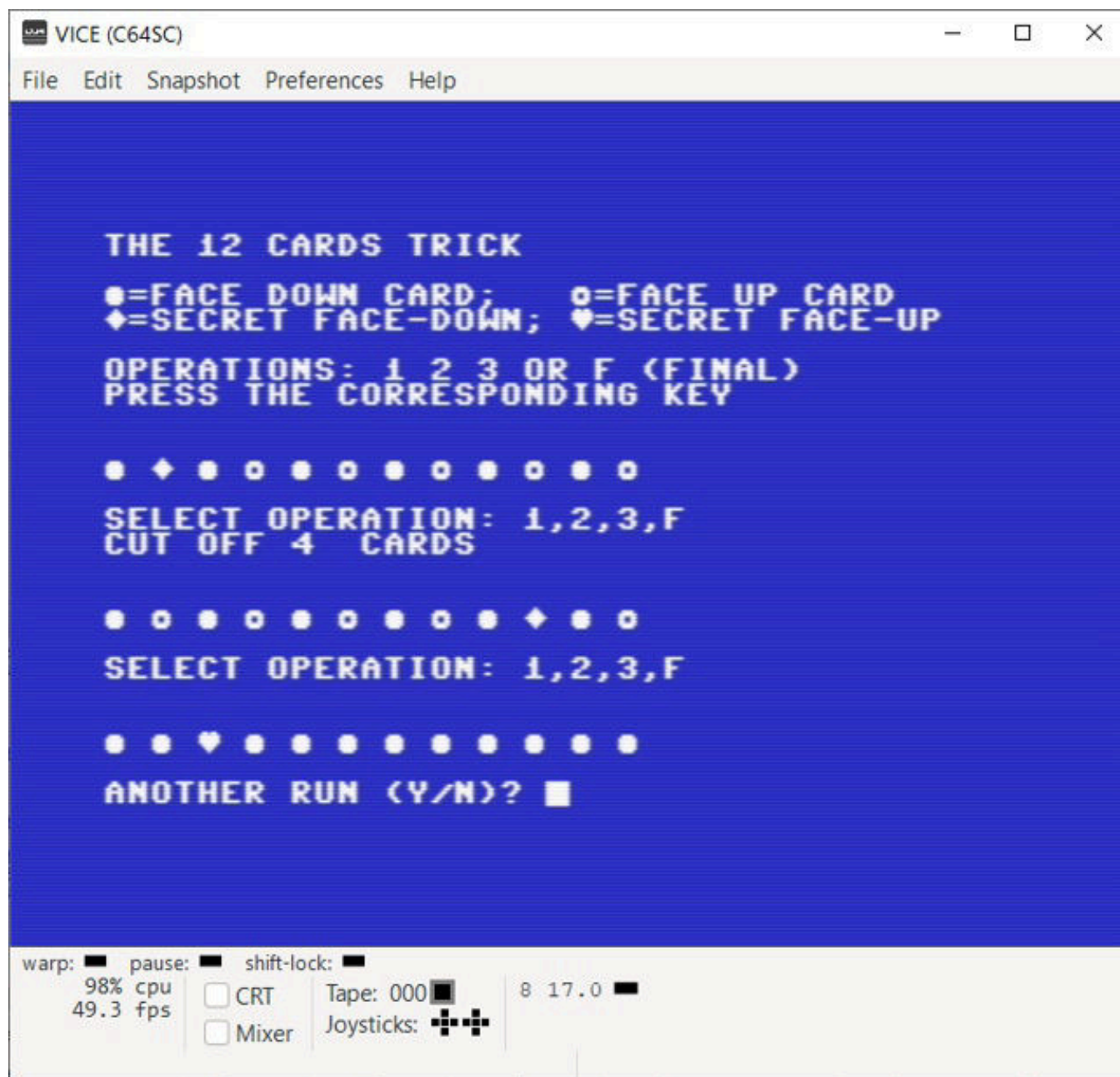


Fig. 5 - Example showing only keys 1 and F pressed





Kwyll: a user-friendly development environment

by Carlo Nithaiah Del Mar Pirazzini and Roberto Del Mar Pirazzini

Kwyll is a development environment designed to make 8-bit game creation accessible to those who have more nostalgia than time, and more ideas than the desire to read ZX Spectrum assembly manuals. It is a cross-platform game creator (Windows, macOS, Linux, including ARM-64 builds) designed specifically to generate games for retro machines, with an initial focus on the 1982 Sinclair ZX Spectrum line. It is neither an emulator nor a generic engine, but a modern “workshop” for building new software for old hardware, with a very clear philosophy—to bring programmers, graphic designers, and curious enthusiasts together without anyone having to become a Z80 opcode guru.

What Is Kwyll and What Does It Offer

Kwyll is available as a paid public beta on itch.io, priced at \$9.99, which will increase to \$29.99 upon full release. The package includes executables for Windows x86-64, macOS, Linux x86-32/64, and ARM-64, as well as a standalone ARM build. Right from the start, this positions the tool in the professional tier. It's not a free “toy,” but a tool that the developer is rapidly iterating on with a steady stream of devlogs (versions 0.1.1.x, 0.1.2.x, 0.1.3.x, up to 0.1.4.0, released just a few days ago).

The central idea is that of a “new type of game creator”: the interface combines an integrated graphical editor with basic drawing and palette functions, and a “user-friendly visual programming” system that allows you to build game logic without writing text-based code. The explicit target audience is “non-programmers” who want to create games for their favorite machines without having to learn Z80 Assembly, memory mapping, and raster tricks. It serves as a bridge between modern tools and 8-bit output.

The documentation is available online at docs.kwyll.com and is described as a “work in progress,” evolving alongside the tool's development. The author also maintains a Discord server and a YouTube channel where they post videos showcasing the development process, introductory tutorials on various features, and practical workflows. The project stands out as one of the modern environments for “coding your own little retro memory-resident miracles,” alongside other contemporary open-source tools. At the same time, Kwyll has been cited in broader retro contexts as an example of a modern tool for creating “memory-resident” software for vintage machines—a sign that it's beginning to gain traction beyond its core user base.

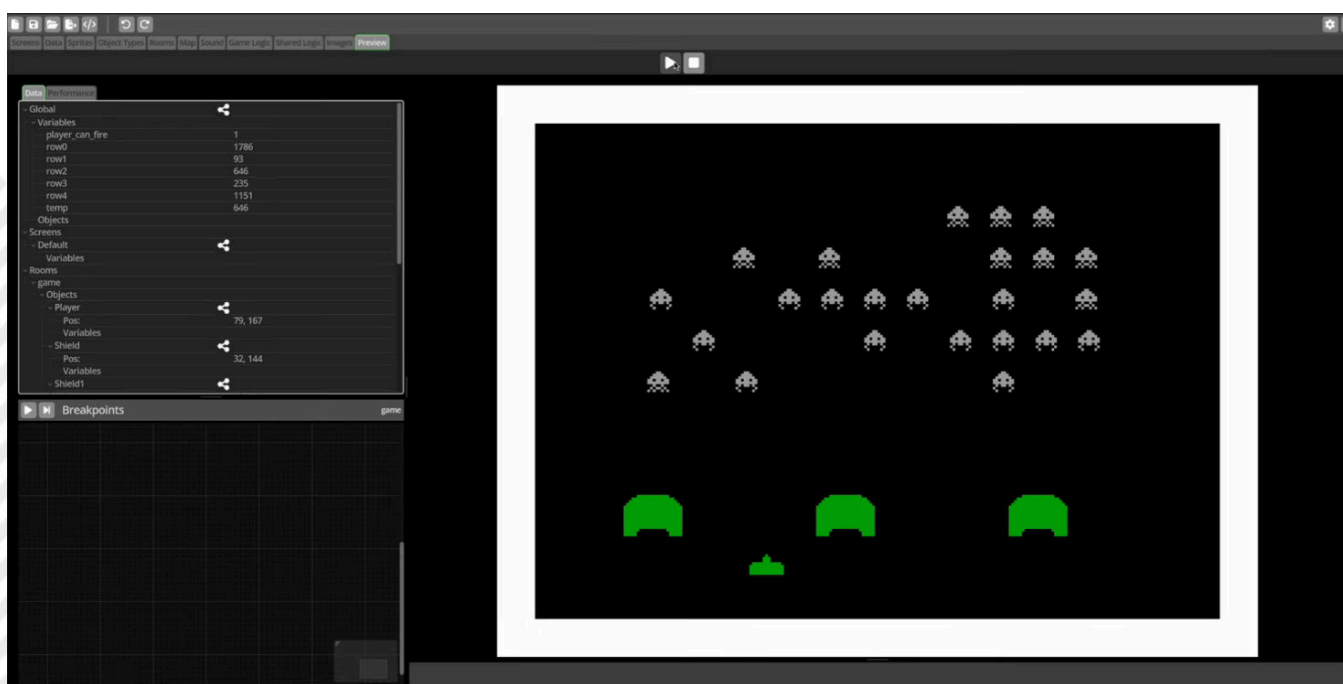


Fig. 1 - Testing Space Invaders in debug mode



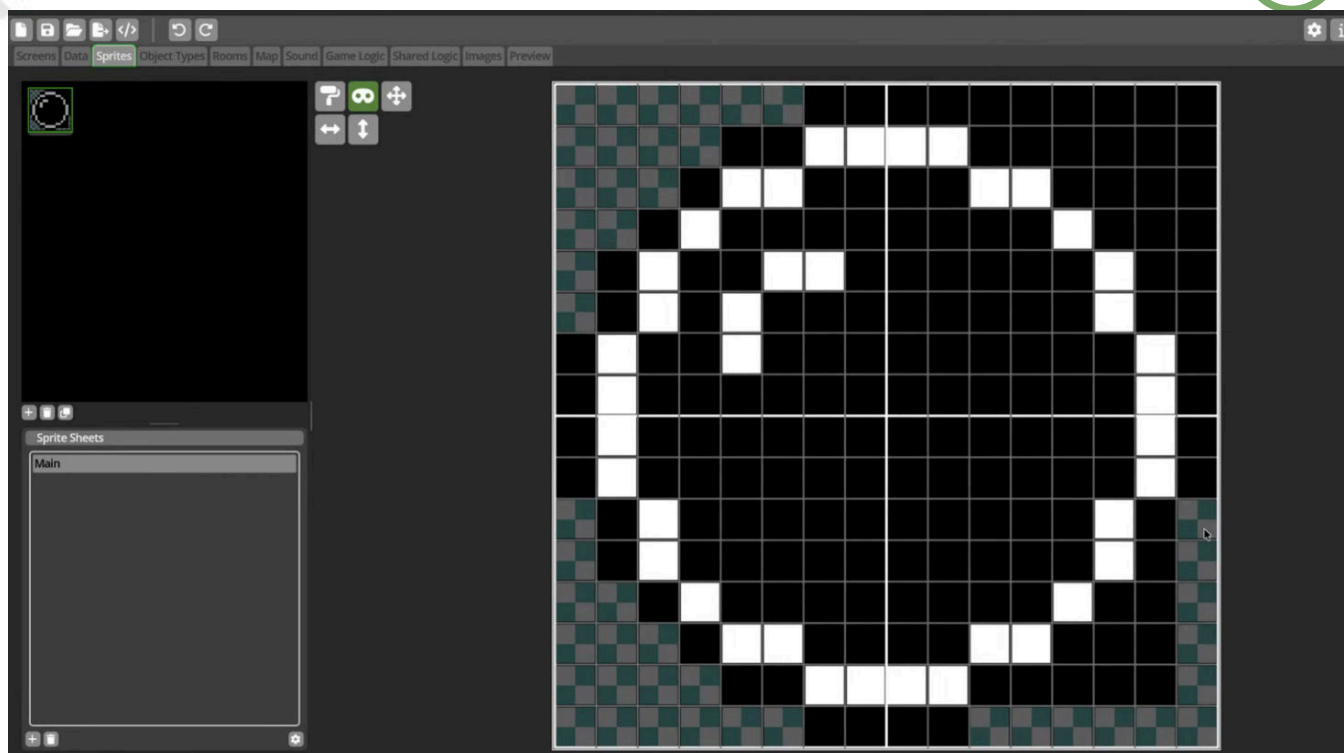


Fig. 2 - An example of development using the graphical interface

Design Philosophy: Retro-First, User-Friendly

Kwyll was explicitly designed with 8-bit machines at its core. The primary target is the ZX Spectrum, but the architecture suggests that other targets may be added later. In practice, you work in a modern environment, but every choice—resolution, colors, tiles, sprites, logic—is guided by what will ultimately be exportable and manageable by the actual hardware.

The graphics editor offers “simple editing functions” designed to operate directly within the Spectrum’s limitations. You work in low resolution, with compatible palettes and attributes, and think in terms of tiles and graphic blocks from the very beginning. This allows users coming from modern tools (Photoshop, Aseprite, etc.) to avoid conversion issues down the line: the tool is already “tailored” to 8-bit constraints from the start.

Graphics programming is the other pillar; instead of requiring the user to write code, Kwyll offers a visual logic system somewhat reminiscent of modern editors, but simplified for this purpose. Events, conditions, actions, and game states are managed through “block-based” interfaces, reducing the risk of syntax errors and the need for a deep understanding of assembly or a structured language. The result aims to generate efficient code for the ZX without the user ever having to see the code itself. This approach has two important effects. On the one

hand, it lowers the barrier to entry for artists, game designers, and enthusiasts; on the other, it creates a common visual language that can be understood even by those who don’t program, facilitating teamwork within small homebrew teams.

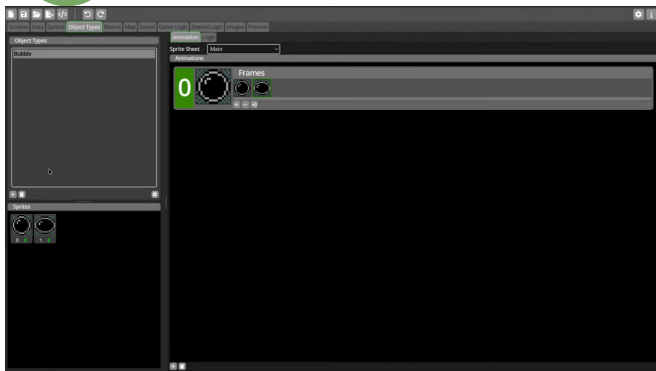
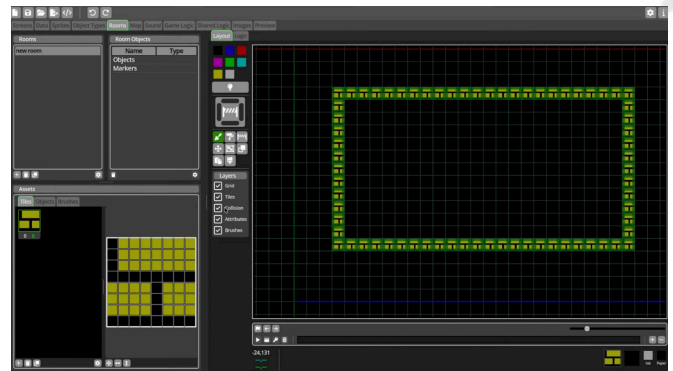
Ecosystem: Documentation, Community, Support

In terms of its ecosystem, Kwyll appears quite mature despite its still-low version number. The online documentation already covers most of the basic features and is being expanded with each new release. The Discord server serves as the hub for support, bug reports, and feedback, while IndigoBeetle’s YouTube channel features development videos and tutorials showcasing the tool in action, from graphic editing to building simple game logic.¹ Although the itch.io page does not yet include a catalog of games “made with Kwyll,” the videos and external references allow you to piece together a typical workflow for anyone who wants to develop a ZX Spectrum title using this tool.

If necessary, graphics and mockups prepared in external software (such as PNGs reduced and posterized to 2–4 colors per cell) are imported, then refined directly in the built-in editor to comply with the hardware’s precise specifications.

Maps are built from tiles using the internal editor. Here,



**Fig. 3 - Let's animate our bubble!****Fig. 4 - The tile editor**

Kwyll essentially functions as a specialized 8-bit map editor. Game entities (player, enemies, objects) and their behaviors are defined through the visual programming system: collision events, keyboard/joystick inputs, score management, lives, and victory/defeat conditions are set up. Intermediate builds are generated for testing on ZX Spectrum emulators or, for users with the right equipment, on real hardware using appropriate interfaces and loaders. Graphics, logic, and balance are iterated upon, taking advantage of the fact that the “low-level” aspects—memory allocation, VRAM management, etc.—are handled by the tool. In various video tutorials by the author, similar approaches are shown but applied to the Amiga graphics pipeline (with PNG → IFF conversion), which suggests that the same “guided workflow” philosophy underlies Kwyll: starting with modern resources and cleanly porting them to the binaries of retro machines, without having to use ten separate tools.

Strengths

Kwyll's first major strength is the concreteness of its goal. Instead of being just another generic engine, it targets a specific platform (the ZX Spectrum) and embraces its limitations as creative and technical constraints. This makes the tool very appealing to those who want to develop for actual hardware, not just create “retro-style” games on a modern PC.

The second strength is accessibility. By combining a built-in graphical editor with a visual programming system, Kwyll allows even those without programming knowledge to create well-structured games with complex logic that can be described using block-based interfaces. Feedback from the community confirms that this approach is working: some users explicitly mention how much easier it has become, compared to the past, to create a game for the

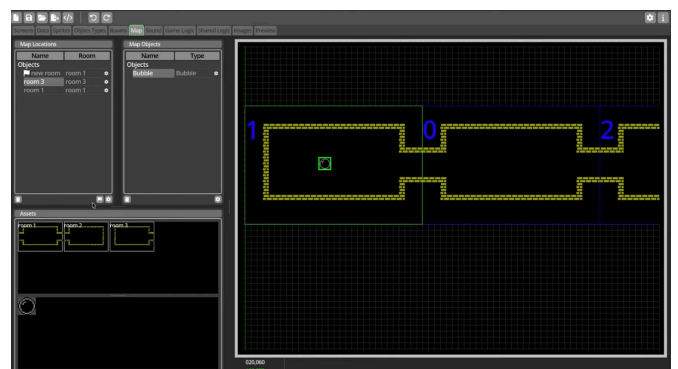
Spectrum, and how enjoyable it is to work in a modern environment with 8-bit output.

A third strength is robust cross-platform support. Having native builds for Windows, macOS (universal version), and Linux—including ARM-64 variants—is no small feat for a niche tool. This allows users to work on their preferred operating system—including Raspberry Pi and other ARM devices—and makes the tool more flexible for schools, labs, events, and educational settings.

Finally, the rapid pace of updates (nearly weekly devlogs) indicates a vibrant project that's open to feedback and has a concrete roadmap—which is reassuring for those who decide to invest time and money in a relatively young development environment.

Current Limitations and Challenges

As it is in public beta, Kwyll comes with some natural limitations. The first is that the documentation is still under development. Although it is already available and well-structured, it does not yet cover all advanced use cases, and those with complex needs may find themselves asking a few more questions on Discord or in the itch.io community (a super friendly and helpful community, Ed.). Another limitation is its heavy reliance on the Spectrum as the initial target platform. For those who'd like to create

**Fig. 5 - Let's create the movement environment for our “ball” in the game!**



similar projects for other machines (C64, Amstrad CPC, MSX, etc.), Kwyll is currently more of a promise than a ready-made solution. Its architecture seems designed for future extensions, but at the moment, the stated focus is on Sinclair computers.

It should also be noted that, while graphical programming is a huge help to non-programmers, those with coding experience might find the visual interface less direct than a good text editor with a Z80 toolchain. This is an inherent trade-off with this type of tool: maximum accessibility versus total low-level control. For many, this will be acceptable; for others, it might be a drawback.

Finally, Kwyll falls into a price range that's far from nominal: it currently costs \$9.99 in early access, but the expected full price is \$29.99. This positions the tool as a serious/professional product; for the casual hobbyist, this could be a hurdle, although those truly interested in developing 8-bit games tend to consider these figures more than reasonable in the context of a comprehensive development environment.

Final Thoughts

Kwyll is, in essence, an important piece of the new wave of retro development tools. It's an environment that takes both modern users—who are accustomed to polished interfaces and integrated pipelines—and historic machines—which deserve software designed to actually run on

their hardware—seriously. With its initial focus on the ZX Spectrum, user-friendly graphical programming, and a built-in editor that already thinks in terms of 8-bit palettes and attributes, it offers designers and artists a practical way to turn ideas into ROM without having to wade through the quagmire of assembly language.

For those who follow and participate in the Spectrum scene, Kwyll is a tool to keep an eye on. Even today, it allows you to prototype and complete games in a relatively straightforward manner, with the advantage of an active developer, a vibrant community, and an ever-expanding ecosystem of documentation and videos. If it maintains its pace of development and expands to support other 8-bit platforms without losing sight of its core mission, it has everything it takes to become a leading reference for those who, in 2026 and beyond, still want to see new screens load on a real ZX Spectrum.

Useful Links

- **Itch.io** - <https://indigobeetle.itch.io/kwyll>
- **Youtube** - <https://www.youtube.com/@indigobeetle>
- **Discord** - <https://discord.com/invite/Yn3vSbTn7P>
- **Documentation** - <https://docs.kwyll.com/user-guide/index.html>

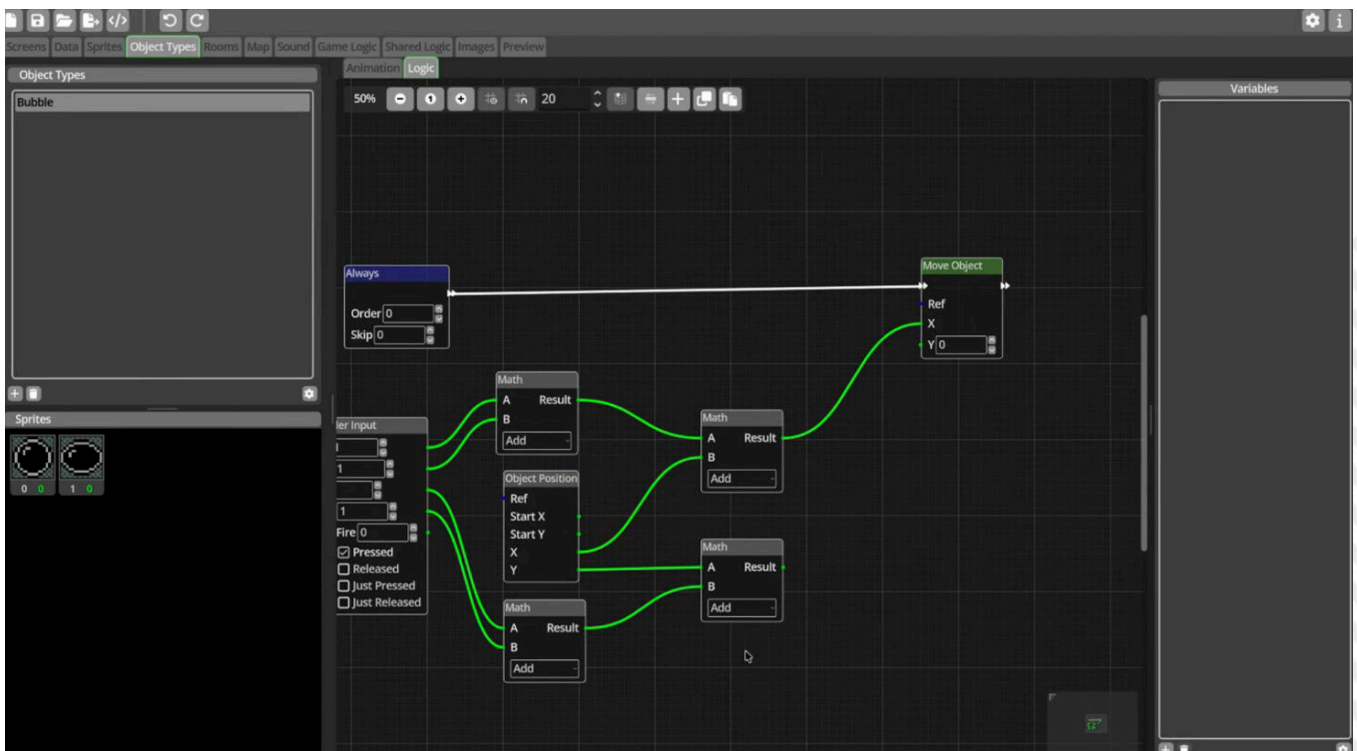


Fig. 6 - Developing “in-game” flows





Discovering Olioni Games Inc.

by Marta Rossmann

Olioni Games Inc. is a small Brazilian company with a very clear mission... to keep the Atari 2600 alive in 2026 by treating it not as a museum piece, but as a platform that is still “vibrant,” deserving of a new, varied, and continuously expanding catalog.

Identity and Origins

On its website, Olioni Games presents itself as an independent publisher specializing in homebrew games for the Atari 2600, with the stated intention of expanding to “other platforms” as well. The website’s content is bilingual (Portuguese/English, with an active Italian section), a sign of an international focus while remaining deeply rooted in the local context—including from a legal and logistical standpoint: at the bottom of the site, you’ll find the CNPJ, a physical address in the state of Mato Grosso, and references to a “Tech Center,” which reinforce the idea of a structured micro-company, not just a hobby site.

The video presentations reveal the name behind the brand: João Pedro Olioni, the developer and project lead. On social media (Instagram and YouTube), the tone is informal and direct—typical of a one-man studio—yet one that seeks constant dialogue with the community of Atari

enthusiasts.

Editorial Line and Catalog

The main showcase is the “Atari 2600 Games” section of the site, which features an already extensive catalog of digital titles sold as downloadable ROMs. Pricing is extremely consistent: nearly all games are priced at 26 reais (with a built-in currency converter for international audiences), and the Italian version of the site lists a price range of R\$22–R\$22 with prices also shown in dollars, reflecting the focus on an international audience.

The catalog covers a range of genres, from fast-paced arcade action to platformers and games centered on cars or adventure, but without delving into the quality of individual titles, one can see the effort to give the 2600 a “new,” well-structured library. It’s not just a handful of isolated experiments, but dozens of titles with well-defined covers, descriptions, and identities. Some titles—such as *Good Morning Vietnam*, *Cyber-Sphere Challenge*, *House of Devils*, *Ferrari H. Racing 2*, *Kraken’s Revenge*, *Space Gladiator*, and *Jim The Miner*—also appear in dedicated live streams on YouTube, where they’re presented as part of a collection now comprising “about 50 games.” Alongside the digital ROM section, there’s also a “Game

Founder, Programmer and Audiovisual	Programmer/YouTuber	Streamer and Artist
		
João Pedro F. Olioni	Xan	Nancy Johnson
SINCE HE HAS A CHILD, MR. OLIONI HAS ALWAYS WANTED TO CREATE GAMES. DURING HIS ADOLESCENCE, HE TRIED SOME SMALL PROJECTS BUT WITHOUT SUCCESS. HE BEGAN HIS DREAM WITH DETERMINATION IN 2023, STUDYING COMPUTING AT COLLEGE.	https://www.youtube.com/@JOGOSPROGRAMATEIRON/CV/VIDEOS MR. XAN IS AN ATARI 2600 PROGRAMMER. HE STARTED PROGRAMMING ON HIS YOUTUBE CHANNEL GAMES AND PROGRAMMING, WITH TUTORIALS, TEACHING PEOPLE. WITH HIS TALENT, HE WAS RECOGNIZED ON THE ATARIAGE FORUMS, BY ZEROPAGE HOMEBREW. WITH THAT, MR. OLIONI DECIDED TO HELP THIS YOUNG MAN BY GIVING HIM THE OPPORTUNITY TO ENTER THIS MARKET, SELLING HIS GAMES ON THE OLIONI GAMES INC. WEBSITE.	I'M A STREAMER AND ARTIST WHO LOVES GAMING AND CREATING. MY GOAL IS TO SHARE HONEST GAMEPLAY, ORIGINAL ART, AND BUILD A SPACE WHERE PEOPLE CAN CONNECT AND ENJOY BOTH TOGETHER. NANCY IS THE OFFICIAL ARTIST FOR OLIONI GAMES, AND WILL BE RESPONSIBLE FOR THE ARTWORK ON GAME COVERS, MANUALS, BOXES, SOME WEBSITE ARTWORK, AND THE COMPANY LOGO.

Il fondatore e alcuni collaboratori





Cartridges” area that suggests a partnership with manufacturers of physical cartridges for those who want to play on original hardware with dedicated packaging and PCBs. In a homebrew ecosystem where physical distribution often relies on third parties, Olioni’s website thus serves as the official hub for the digital side and as an institutional showcase for the brand.

Online Presence and Community

In addition to the official website, Olioni Games maintains an active presence across multiple platforms: Instagram, YouTube, X (Twitter), and a group/community hosted directly on the Wix platform. The YouTube channel “Olioni Games Inc” is presented as a space dedicated to showcasing new homebrew games for the Atari 2600. The international Atari community has begun to appreciate the brand: in Facebook groups dedicated to 2600 homebrew, there is discussion of remakes of in-house titles such as **Wingsuit Hardcore**, which has been re-released in an updated version compared to the site’s initial releases. Other retro creators—such as the channel that dedicated a livestream to “EVEN MORE Olioni Games”—feature the games via livestream and explicitly link to the official store, demonstrating the micro-promotion network typical of the homebrew scene.

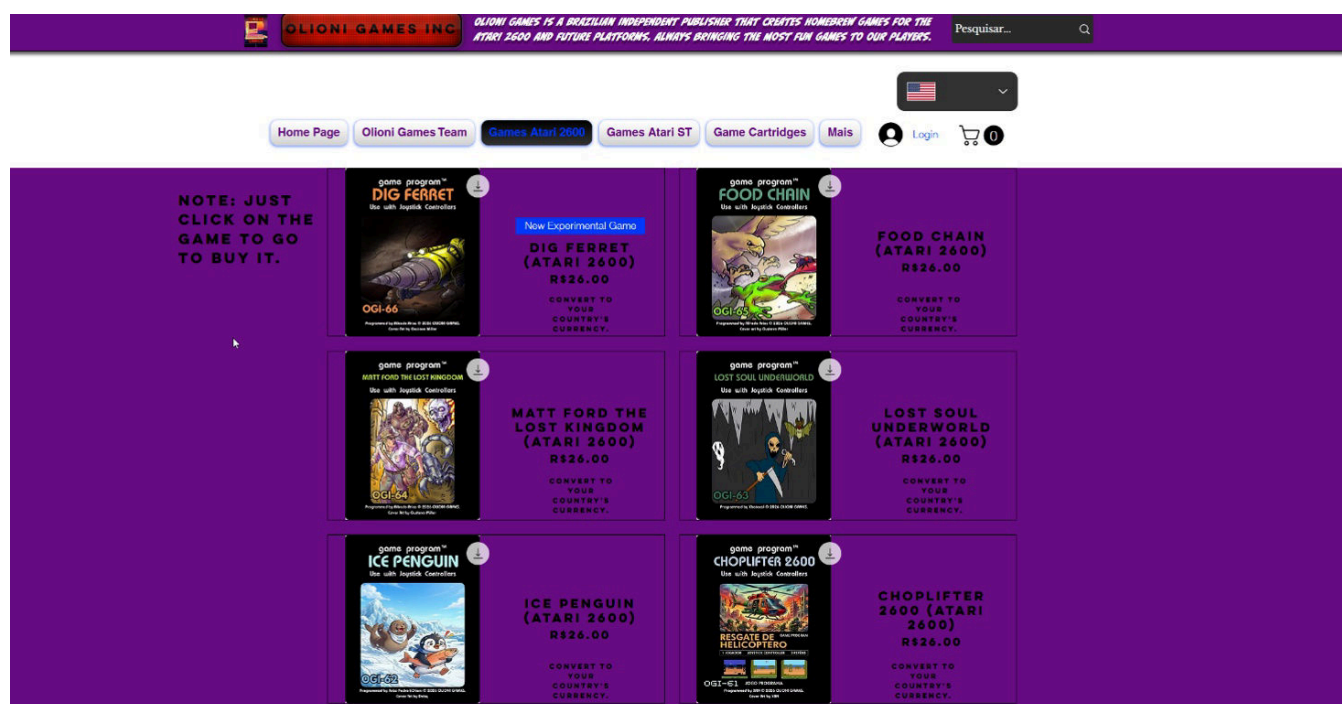
The website also features a newsletter sign-up form

(“Don’t miss new releases”) inviting visitors to provide their email address, plus a chat and support section (“Can we help? Customer Service”) with a Brazilian phone number and direct email address. This, too, helps convey the image of a small publisher seeking a direct, almost “boutique-style” relationship with its customers.

Role in the Atari Homebrew Scene

Putting the available information into context, Olioni Games Inc. stands out as one of the most productive hubs in the contemporary Atari 2600 homebrew scene, at least within Brazil. The decision to use English and to include built-in currency conversion demonstrates a desire to engage with an international audience, while direct references to external creators, livestreams dedicated to “new Olioni games,” and mentions in specialized groups confirm that the brand has carved out a recognizable niche for itself.

Beyond the quality of individual titles—which would require a case-by-case analysis and which you can read about below—the overall picture is that of a highly productive retro development studio, focused on a single platform and determined to fill that “gap in new content” that, for many enthusiasts, separates nostalgia for the 2600 from the console’s current, everyday use. In this

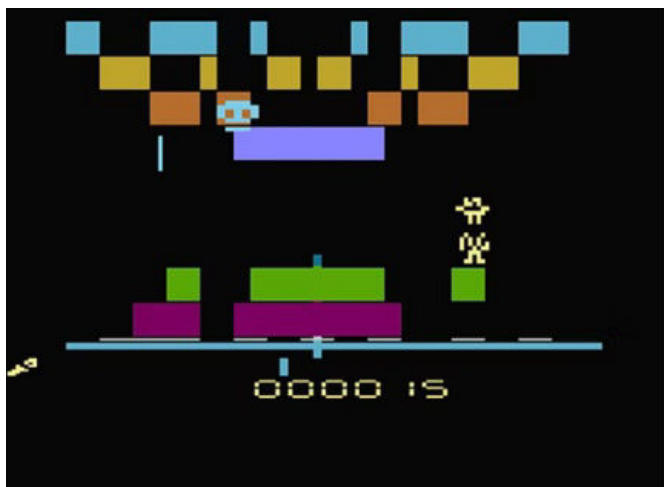


Il sito web ufficiale





sense, Olioni Games Inc. is not just a ROM seller, but a player striving to transform the Atari 2600 into an ecosystem that's still thriving.



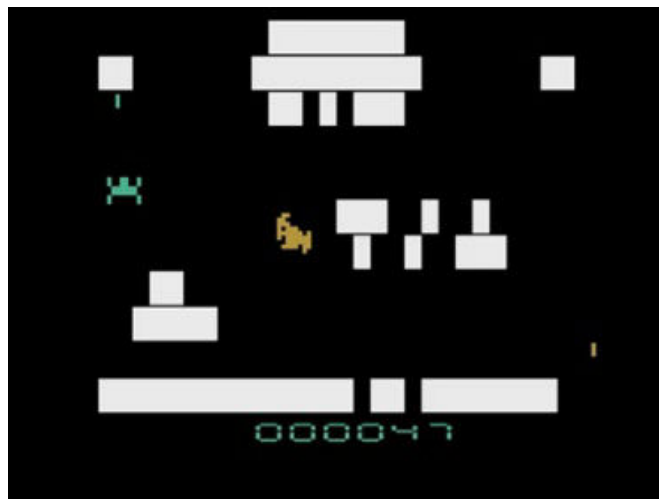
Matt Ford: The Lost Kingdom - Atari 2600

An adventure-themed homebrew game that aims to recreate the charm of Indiana Jones-style films with an 8-bit twist, blending exploration of ancient ruins with a “cursed treasure hunt” atmosphere. Released as a physical cartridge by 8-Bit Milli Games and other specialty retailers, it is designed to run on both the original Atari 2600 and newer compatible systems such as the Atari 2600+, and, in some editions, even the 7800+. In terms of gameplay, it's an action-platformer where you explore temples and caves, avoid traps and enemies, and collect relics and secrets within a well-defined level structure, with an emphasis on precise jumping and memorizing danger patterns, as demonstrated by the live gameplay sessions showcasing its “exclusive ending.” In terms of production, the game is part of the homebrew line curated by Olioni Games and partners, featuring a printed manual, a themed label, and dedicated packaging—a release that appeals to collectors as much as it does to players who simply want something new for their 2600. It's easy to play and immediately accessible thanks to its arcade/adventure structure. It's a shame it isn't particularly long...

Gameplay: 85%

Replay Value: 70%

Website: <https://www.8bitmilligames.com/product/matt-ford-the-lost-kingdom-atari-2600>



Food Chain - Atari 2600

The concept of the “food chain” is presented here with a touch of irony: the player must manage or defend their food in a fast-food setting, navigating between production stations, obstacles, and customers in a sequence of repetitive yet increasingly frantic actions. The packaging and distribution are, as always, meticulously crafted.

In terms of gameplay, Food Chain follows the tradition of simple yet effective arcade games: movement along one or more lines, management of resources or objects, patterns that accelerate to increase the sense of danger, and a scoring system that encourages repetition and mastery. There are no major narrative twists, but the structure is clear, with levels or screens that repeat while increasing in difficulty, as is typical in this type of homebrew game.

Gameplay: 75%

Replay Value: 70%

Website: <https://www.8bitmilligames.com/product/food-chain-atari-2600>





Ice Penguin - Atari 2600 (see image below)

Oliver the penguin must recover his nest after a sudden snowstorm. Perhaps the simplest and most endearing title, but also a lot of fun. Classic '80s arcade action and excellent technical execution. Easy to control and featuring patterns typical of Atari 2600 action games.

Gameplay: 85%

Replay Value: 85%

Website: <https://www.8bitmilligames.com/product/ice-penguin-atari-2600>

Lost Souls - Atari 2600

A "dark adventure" title that fits into the lineup of spiritual and supernatural-themed games curated by Olioni Games and partners. The title immediately hints at the theme... lost souls, a realm of the underworld, or a buried place where the player must navigate through shadows and dangers, either freely or confined within an experience of exploration and survival in a cold and menacing environment. Essentially a maze game, but with more strategic gameplay.

Gameplay: 80%

Replay Value: 85%

Website: <https://www.8bitmilligames.com/product/lost-souls-atari-2600>

Useful Links

Website:

<https://olionigamesoficial.wixsite.com/olioni-games-inc/shop>

Store:

<https://www.8bitmilligames.com/category/olioni-games>



Ice Penguin





OricMag - The never rhetORIC news mag!

by David "Cercamon" La Monaca

A Bit of History...

The history of Oric Products International and its famous 8-bit microcomputers, the Oric-1 and the Oric Atmos, is a classic tale of the "Golden Age" of European computing in the 1980s: a mix of great technical insights, fierce rivalry with Sinclair, and unexpected success across the Alps.



The Oric-1 was officially unveiled in January 1983 to compete directly with Sinclair's hugely popular ZX Spectrum. Designed by Tangerine Computer Systems, it was a compact and affordable machine based on the 1 MHz MOS 6502A processor. Its strengths were an aggressive price point and superior audio/video capabilities: a dedicated programmable sound chip (the General

Instrument AY-3-8912), standard RGB video output, and a keyboard that was an improvement over the Spectrum's rubber keys.

It was a solid debut, but the Oric-1 suffered from bugs in the ROM code (especially when loading from cassette) and overheating issues. To address these issues, the Oric Atmos was launched in February 1984. It was priced the same but featured an iconic two-tone (red and black) mechanical keyboard and an updated ROM (v1.1) that fixed most of the operating system's bugs. Although it was a significantly better machine, the Atmos faced fierce competition (the Commodore 64, ZX Spectrum, and the newly released Amstrad CPC 464), which limited its overall sales.

Unlike many of its British competitors, the Oric found its true success abroad: in the United Kingdom, approximately 160,000 Oric-1s were sold in 1983, while in France it was a resounding success, with about 50,000 units sold in



The ORIC-1 Computer





The ORIC Atmos, launched to address the issues with the ORIC-1

1983 alone, making it the best-selling computer of the year in that country. France used the SECAM television system, which was incompatible with most foreign computers. However, by law, French televisions were required to have a SCART/RGB port. Since the Oric-1 came standard with an RGB output, it instantly became the perfect choice for French households.

Despite its success in France, financial problems that had mounted in the United Kingdom—including a severe fire at the manufacturing plant in late 1983—plunged the company into serious difficulty. In early 1985, the parent company Edenspring placed Oric Products International into receivership. Recognizing the brand's strong potential in the domestic market, the French company Eureka Informatique acquired the remnants of Oric in 1985, transferring all development and production to France. Under the new French management, the final model, the Telestrat, was introduced—a computer heavily oriented toward telecommunications and designed to interface with the Minitel network. Although technologically interesting, the Telestrat was a niche machine and sold only about 6,000 units. Overwhelmed by the rise of 16-

bit computers (Amiga and Atari ST), Oric filed for final bankruptcy between late 1987 and early 1988.

The Birth of OricMag

Despite a rather turbulent history, Oric computer users have proven to be among the most loyal to their first computer—perhaps the most tenacious in the world of



retrocomputing when it comes to defending their little 8-bit machine and continuing to use it many years after purchase.

OricMag is an English-language digital magazine dedicated to Oric computer users and enthusiasts around the world!





The Telestrat, developed entirely in France and heavily focused on telecommunications, was designed to interface natively with the Minitel network.

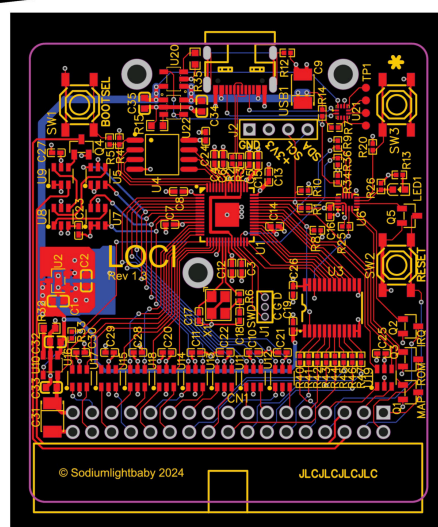
The initiative comes from CEO (Club Europe Oric), a non-profit association of Oric users founded in 1990. CEO's activities are centered on the website ceo.oric.org, which features a very active forum primarily in French. Since 2026, it has been distributing a "gazette" to its members featuring the latest news on the Oric platform, sometimes accompanied by files mentioned in the newsletter, in addition to its two main magazines, CEO-MAG and OricMag.

Oric was one of the most popular 8-bit systems in Europe, with iconic games such as Xenon 1, L'Aigle d'Or, Le Manoir du Dr Geniux, and Tyrann. The Oric community remains one of the strongest and most vibrant, and the number of fans continues to grow. New hardware and software are released continuously.

OricMag is therefore an indispensable guide for keeping up with developments in the Oric world. The magazine aims to provide information on all the latest hardware and software, as well as to thoroughly cover the Oric scene, with a special focus on both classic games and new releases.

The first issue (OricMag 001) was released on June 1, 2025. About a year later, on June 16, 2026, the second

THE MODERN MAGAZINE FOR ORIC USERS



Story : LOCI, Zorgon's Revenge
Interview : RaspberryPioneer
Software : Tiny Skweeks, HFKS
Hardware : Tape Emulator

001

ORICMAG 001





THE MODERN MAGAZINE FOR ORIC USERS



Interview : 6502Nerd
 Solution : The Haunt
 Dev : Cross-Lib HD
 Hardware : HF beacon for Atmos

002

ORICMAG 002

issue, OricMag 002, was published. The first issue was quite successful, with over 900 downloads. The magazine's editors have set themselves the challenging task of reawakening the dormant interest of Oric-1 and Oric Atmos users and convincing them to power up their old systems once again, upgrade them with modern peripherals and tools, and bring them back to the center of their desks.

The next issue is scheduled for around October 2026, and the OricMag editorial team is open to anyone who

wants to contribute news, hands-on reviews, interviews, hardware modifications, and code. All to fill the magazine and feed the hungry "Oricians." :-)

So, don't hesitate—send in your articles for this little/big microcomputer. The OricMag editorial team is waiting for you!

OricMag is a well-produced publication that's a pleasure to flip through. At the moment, it's not yet a "mature" and well-established magazine, but it already shows all the potential to become the new go-to resource for all Oric users—something we hope will happen as soon as possible.

References and downloads

OricMag Web:

- <https://ceo.oric.org/category/oricmag/>

OricMag Email:

- oricmag@oric.org

FaceBook:

- <https://www.facebook.com/ClubEuropeOric>

Youtube:

- https://www.youtube.com/channel/UC27WvW3vPCI_e35T-1gLspg

GitHub:

- <https://github.com/oric-software>
 - <https://github.com/club-europe-oric>



Website: <https://ceo.oric.org/>





My approach developing on the C64: research, education, retrocomputing, and Artificial Intelligence

by Fabrizio Radica

My name is Fabrizio Radica, and I've been working for many years in the fields of software development, training, and the design of interactive experiences.

My career began in the world of the web and multimedia in the 1990s, when programming often meant dealing with very real technical limitations: limited memory, low bandwidth, basic hardware, and the need to find creative solutions to get the most out of the least.

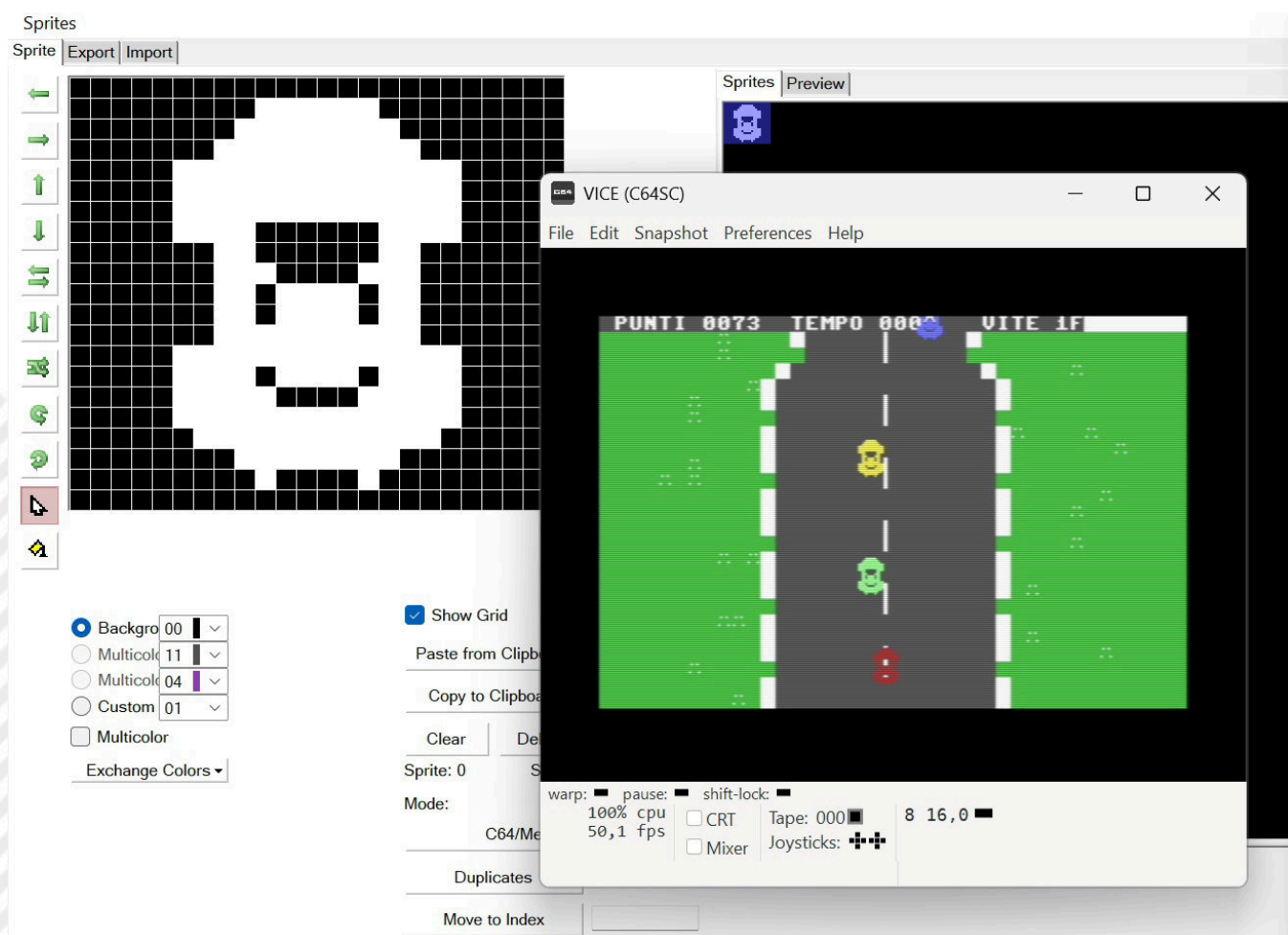
From there, I pursued a career path that led me to work in video game development, Unity, virtual reality, augmented reality, immersive environments, educational and museum projects, and, more recently, Artificial Intelligence applied to teaching, design, and development.

Today I work as a developer, instructor, game designer, and AI mentor. I teach Unity, C#, game design, artificial

intelligence, and immersive technologies, always striving to combine technical expertise with thoughtful design. For me, it's not enough to simply "use a tool"—you have to understand it, master it, and integrate it into a clear creative and professional process.

Alongside my professional work, I've always maintained a strong passion for retrocomputing. It's not just about nostalgia, but a genuine cultural, technical, and educational interest in the history of computing and video games.

This passion also led me to found RetroAcademy, a project through which, from 2013 to 2019, I organized events, meetings, and activities dedicated to retrocomputing and gaming culture. At the moment, RetroAcademy has been on the back burner since 2019, but who knows—maybe one day it will make a comeback.





When I talk about vintage computers, the Commodore 64 certainly plays a central role in my imagination and in my current experiments, especially because of its extraordinary balance of technical limitations, graphics, sound, and low-level programming.

But my interest in 8-bit computers doesn't stop at the C64. The Amstrad CPC is also a very important machine to me: different in architecture, graphics, character, and approach, but just as fascinating as a laboratory for understanding programming, game design, and how hardware limitations can become an integral part of creativity.

For me, these machines aren't just historical artifacts, but tools that are still very much alive for studying, experimenting, and exploring computer science in a hands-on way.

The games I've developed for the Commodore 64 stem precisely from this idea: combining passion, technical research, and game design. I don't view them as mere nostalgic exercises, but as small projects focused on study, experimentation, and design. Each game becomes an opportunity to reflect on a mechanic, a hardware limitation, a graphical solution, a control scheme, or a different way of conveying an idea through a machine that's over forty years old.

Programming on the Commodore 64 means getting back to the basics: memory, registers, machine cycles, graphics, sound, and real-world constraints. There's almost nothing superfluous. Every technical choice carries weight, and every result visible on the screen is the result of a precise

decision.

Artificial Intelligence also plays a role in this process, but not as a substitute for technical expertise or artistic direction. The foundation of my projects remains human: the idea, game logic, structure, programming, sprites, aesthetic choices, code review, and final revision.

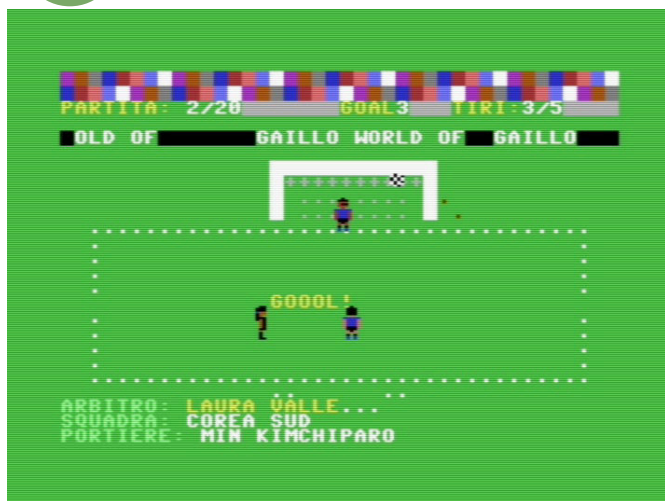
AI is used as a support tool to speed up certain phases, verify solutions, generate alternatives, analyze code, or streamline repetitive processes. In some cases, it can help quickly explore graphical or technical variations, such as designing a charset-based field, reviewing assembly routines, or checking certain game logic.

But the point, for me, isn't just "using AI to program." It's about sharing a direct, concrete experience—even with other programmers of my generation and with all those people who may have always wanted to try their hand at programming but perceived it as something too distant, complex, or inaccessible.

SENSIBLE USE OF AI

In this sense, AI isn't limited to writing code. It plays an even greater role in the planning phase, in design, in defining mechanics, and in GDD. This is what happened, for example, with projects like *Panik Boom*, where I worked on writing a Game Design Document for a bullet-hell roguelike, defining gameplay, structure, pacing, and game mechanics even before the actual programming began. This is an important step because the world of programming is changing. The tools are changing, but above all, the paradigms are shifting. And I'll admit it: I, for one, had a





hard time accepting it.

For those who, like me, started programming in an era when every line of code was an achievement, the arrival of AI can be disorienting. It makes you wonder where expertise ends, where automation begins, and what value a programmer still holds.

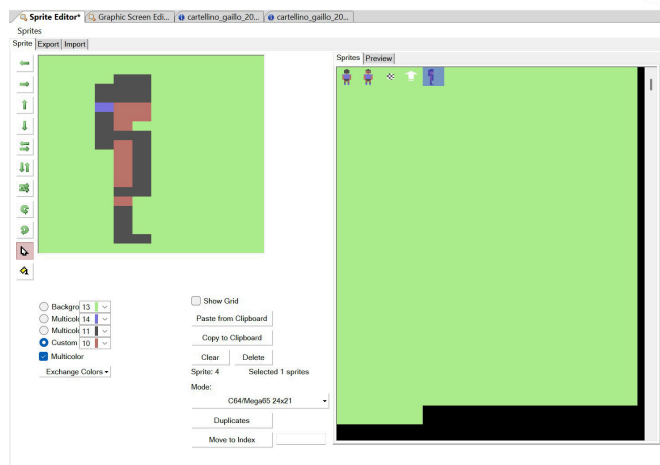
But then I stopped to reflect.

Back in the '90s, I even wrote small 2D and 3D engines, because back then it was normal to build many of your own tools. Today I use Unity. And what, really, is the difference?

The difference doesn't lie in the fact that a tool does something for you. It lies in knowing what it's doing, why it's doing it, and how to intervene when necessary. If you understand the inner workings of an engine, you know how to optimize, you know how to design better, you know how to spot an error, and you know how to make more informed decisions.

I'm trying to apply the same principle to AI today.

If you know how to program, if you understand the logic, and if you have design experience, then you can leverage AI to optimize processes without losing control. It's not a shortcut to avoid expertise, but a tool that can amplify it. This point is fundamental to me. AI must not distort the project. It must not strip away its identity, nor turn development into an automatic and impersonal process. On the contrary, when used well, it can become a catalyst for personal exploration. It allows you to try more paths, compare solutions, make corrections faster, and devote more energy to the actual design work: deciding what



works, what communicates best, and what stays true to the game's soul.

In the case of my Commodore 64 projects, this means starting from a foundation of human programming—logic that's been consciously conceived and built, hand-drawn sprites, and a precise creative direction. AI comes in later, as a technical and design assistant, never as a creator in my place.

This approach allows me to maintain control and artistic ownership of the project, while simultaneously accelerating certain phases of development.

Retrocomputing, in this sense, is an ideal arena for reflecting on the relationship between humans and machines. On a system like the Commodore 64, you can't hide behind modern libraries, graphics engines, or overly convenient abstractions. Even when using contemporary tools, you still have to know the machine, understand what you're doing, and take technical and artistic responsibility for the result.

EXPERIMENTATION

This is precisely why I found it interesting to experiment with AI even within a context as "pure" and constrained as that of 8-bit computing. Not because the Commodore 64 needs AI, but because testing cutting-edge tools on a historic machine forces you to truly reflect on the limitations, the processes, and the role of the developer. It's a way to question your own beliefs without denying them. My professional work as an instructor, developer, and game designer also greatly influences these projects.





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$080D 0     17 VIC_SPR_COLOR1 = $d028 ; Sprite 1 Color (ball)
$080D 0     18 VIC_SPR_COLOR2 = $d029 ; Sprite 2 Color (arrow)
$080D 0     19 VIC_SPR_COLOR3 = $d02a ; Sprite 3 Color (goalkeeper)
$080D 0     20 VIC_SPR_COLOR4 = $d02b ; Sprite 4 Color (referee)
$080D 0     21
$080D 0     22 VIC_SPR_MULTI = $d01c ; Sprite Multicolor Mode
$080D 0     23 VIC_BG_MULTI1 = $d025 ; Colore Globale 1
$080D 0     24 VIC_BG_MULTI2 = $d026 ; Colore Globale 2
$080D 0     25
$080D 0     26 VIC_SPR_ENABLE = $d015
$080D 0     27
$080D 0     28 SID_V1_FREQ_LO = $d400
$080D 0     29 SID_V1_FREQ_HI = $d401
$080D 0     30 SID_V1_PW_LO = $d402
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$080D 0     33 SID_V1_AD = $d405
$080D 0     34 SID_V1_SR = $d406
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$080D 0     36 SID_V2_FREQ_LO = $d407
$080D 0     37 SID_V2_FREQ_HI = $d408
$080D 0     38 SID_V2_AD = $d409
$080D 0     39 SID_V2_SR = $d40a
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Teaching Unity, C#, game design, AI, and immersive technologies brings me into daily contact with students, professionals, and companies. This drives me to continually seek new ways to explain, design, and experiment.

The Commodore 64 projects thus also become educational tools: they allow me to discuss programming, logic, optimization, memory, game mechanics design, and the relationship between technical constraints and creativity. I believe that computer science research should not be separated from passion. In my work, I always strive to combine professional expertise, curiosity, experimentation, and technical knowledge.

Whether it's a virtual reality project for a museum, a course on Unity, an AI-based system, or a small assembly language game for the C64, the common thread is always the same: understanding how technology works, using it thoughtfully, and transforming it into something that has meaning, identity, and value.

That's why I continue to develop on vintage computers as well. Not just to look back at the past, but to remember how important it is to know the basics, respect the limitations, and use technology as a creative tool—not as a shortcut.

The Commodore 64, the Amstrad CPC, and 8-bit systems in general still have a lot to teach us. Not only to those who love retrocomputing, but also to those who work today with modern engines, virtual reality, artificial intelligence, and increasingly powerful tools.

We are in the midst of a time of epochal change. Experiencing this firsthand through our passions, our tools, and even our personal resistance is, in my opinion, a step forward in our understanding.





Exploring the MSX Italia association

by Carlo Nithaiah Del Mar Pirazzini

A great interview and behind-the-scenes look at these big-hearted friends. Fresh off their 10th-place finish at MSX Dev 2025 with their splendid Chrono Runner (you can find the review in issue 53), they tell us about their journey and their immense passion for the MSX standard.

Nith – Hi guys, first of all, thanks for taking the time to talk with us. What can I say! Chrono Runner is a blast, but before we get into the game, tell us a little about who you are, where you're from, and—well, how many of you are there... no, just kidding, kids... tell us a bit about all of you.

MSX Italia – Hi, and thanks to you for your interest! So, let's start from the beginning. We're the MSX Italia Association, founded in 2023. The association has about 50 members spread throughout Italy, united by a passion for this platform that shaped the computing childhoods of so many of us. As an association, we organize meetups, conferences, events, courses, and workshops; we publish a fanzine; and starting this year, we're also participating in international competitions like the well-known 'MSXDev.'

In 2024, we organized Italy's largest MSX event: the Pisa MSX DEVCON, which was attended by many experts from abroad, including the famous Kazuhiko Nishi, creator of the MSX standard.

As for Chrono Runner, the "core" team that led the development consists primarily of four members: Lorenzo Mancini, who handles the programming; Leonardo Vettori, who proposed the game concept and, as part of the collective project, handled the graphics—he had the thankless task of transforming the members' sketches on paper into 8×8 tiles while adhering to the absurd constraints of the TMS9918 VDP—two colors per line, 256 patterns per bank, that sort of fun. Fabrizio Luglio, the musician, who devised a brilliant workflow for the soundtrack—which we'll tell you about in a moment. And Max Privrat, President of the Association, who handled the sound effects, the storyboard, the manual, and the organizational aspects.

But what we're most proud of is that Chrono Runner isn't just a game made by the four of us—it's a game made by the entire association. About ten members designed levels



Pisa MSX DEVCON





Chrono Runner - the game developed by the association

for the game, each with their own ideas and style, and then served as beta testers. In fact, before moving on to the next level, there's a progress screen that credits the level's creator. You didn't need to know how to code—all it took was a sheet of graph paper, a pencil, and a little imagination.

Nith – Chrono Runner... We want to know everything about its origins and the related projects.

MSXITALIA: It all began on September 27, 2025, at the 1950 American Diner in Figline, during a club gathering. Leonardo put forward the proposal: "What if we all worked together to make a game?" Not the usual project by a "handful" of techies, but something that would truly involve all the members.

We liked the idea right away, and we set clear guidelines from day one: MSX1, a 128KB ROM in ASCII16 format, pure arcade gameplay, no parallax scrolling. It has to be doable, we told ourselves. And above all, it has to be fun to make.

From there, a design process began that you could call "collective." Each member could propose a level simply

by sketching it on graph paper or in a spreadsheet. Then Leonardo would turn those sketches into MSX graphics using the Magellan application, and Lorenzo would integrate everything into the game engine. Finally, everyone would test it, and the feedback closed the loop: too easy? Add mines. Too hard? Move the crystal. Too boring? More moving platforms. The level wasn't finished until it was fun—and the community was the one to decide.

For the soundtrack, Fabrizio solved a non-trivial problem: none of us had experience with MSX audio chips. He composed the music in MIDI format, optimizing it for the PSG's three channels, then wrote a Python tool to convert the MIDI files to Vortex Tracker format, from which exporting to PT3 for the AY-3-8910 chip was immediate. In essence, he turned a technological limitation into an automated process.

Another aspect close to our hearts is the decision to release all source code as open source, under the GPLv3 license, with assets licensed under Creative Commons BY-NC-SA 4. In the world of retro-computing, there is sometimes a culture of secrecy, where the "gurus" of the old guard jealously guard their solutions. We want to





One of the levels in Chrono Runner

break this pattern. If we truly love the MSX, sharing is the only way to keep it alive. And during development, we found ourselves contributing directly to MSXgl, the open-source library on which the game is based: Lorenzo became so enthusiastic and involved in the project that he became an official contributor. Everyone benefits; no one loses out. In addition to the great soundtrack, an anime and a manga dedicated to the game have also been created, with an official page on our website.

When we saw that the game was coming along nicely, we said to ourselves, “Why not participate in MSXdev25?” So we set ourselves a deadline: March 16, 2026.

Over the last month, we kicked it into high gear and made significant improvements, further enhancing the game right up to the last minute thanks to Lorenzo’s great skill—he added the final boss and some animations, working on them right up until the deadline.

The game has been approved for entry in the ‘MSXDev25’ contest and is already available for download and play on the contest website (<https://www.msxdev.org/2026/03/14/msxdev25-38-chrono-runner/>) Lorenzo

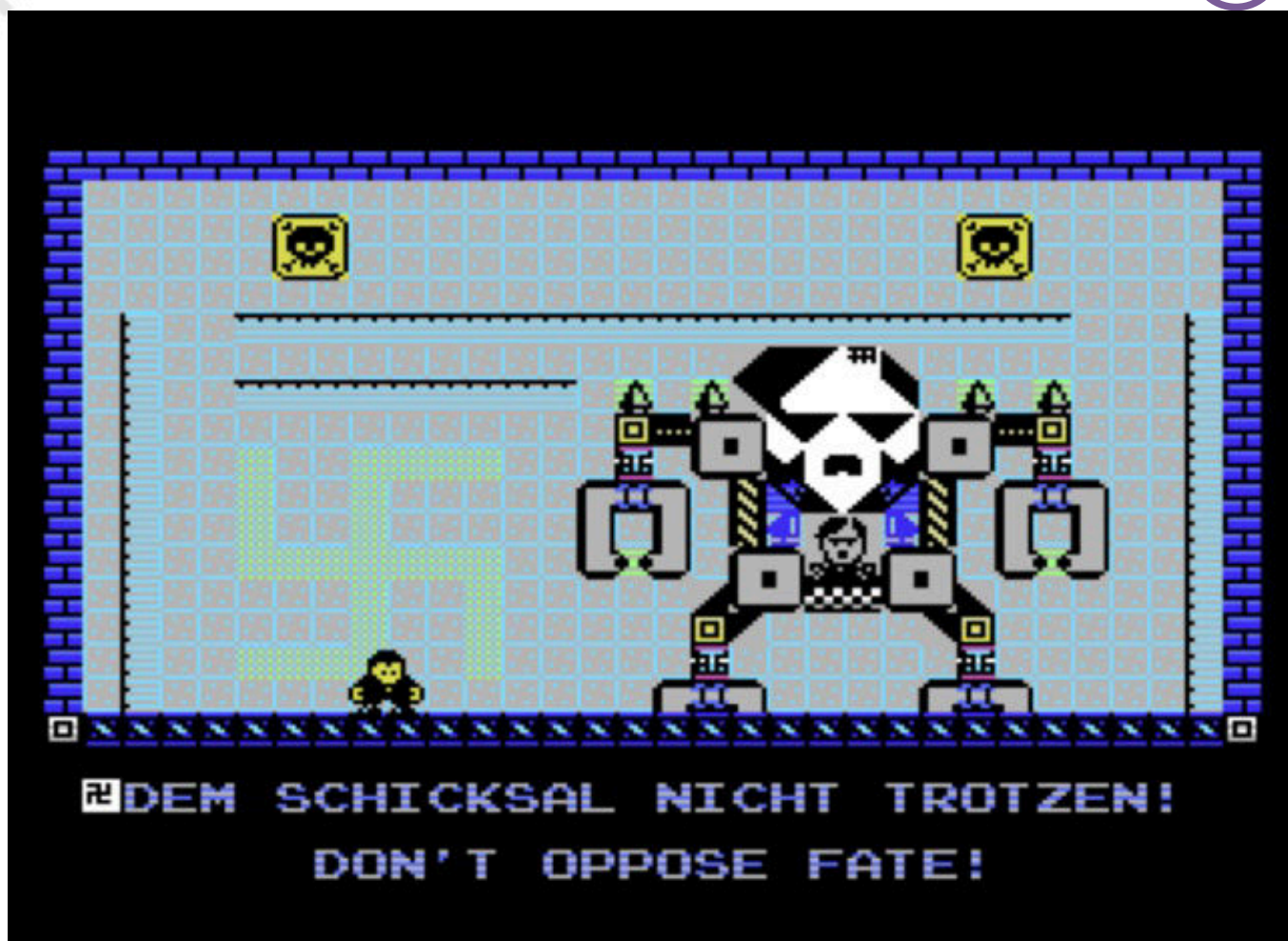
and Fabrizio appeared on an episode of Atariteca, a podcast dedicated to video game culture. Max was a guest on the well-known Twitch channel KSGamingLife to talk about the Association and Chrono Runner. Lorenzo gave a talk on Chrono Runner at Retrofutura, also in April. On May 26, we gave a talk at Retrovone in Arezzo and launching a free course to train new MSX programmers (those interested should contact associazionemsxitalia@gmail.com).

And then there’s some news we’re particularly proud of: we’ve produced a physical version of the cartridge, hand-assembled and soldered by our member Fabio Brianese, complete with a case, manual, and vintage-style cover. Holding it in your hands is an indescribable feeling.

Nith – The future of the world is “mad chaos”... but in the alternate world ahead of us, what are you planning?

MSXITALIA – To further improve the game, we’ve decided to involve the community again, but this time by opening the project to anyone who wants to participate, even if they aren’t a member. There’s already talk of a sequel, a





The boss... deadly!



Detail of the physical version of the game

Chrono Runner 2; Max already has plenty of sci-fi ideas, but we'll see if, once again, a great team forms, ready to carry the new project forward. But the most important thing Chrono Runner has taught us is that the strength of a retro platform doesn't lie in its chips—it lies in the community that keeps it alive. And our community is more alive than ever.

Nith – A heartfelt thank you to all of you, and thank you for your contributions to the retro world and the wonderful world of MSX. Now you have the floor for your final remarks. **MSXITALIA** – A heartfelt thank you to you for the space and attention. And thank you to everyone who continues to keep the flame of the MSX—and retrocomputing in general—alive. As we like to say: limitations stimulate creativity, and applying today's technology to yesterday's hardware makes us reflect on the untapped potential in today's hardware. If you'd like, come visit us; the MSX Italia Association is always open to new enthusiasts, whether they're programmers or not. And if you want to



**Leonardo Vettori**

play Chrono Runner... watch out for the time crystals!

AT THE ORIGINS OF THE FOUR SINGULARITIES...

Or, discovering the minds behind Chrono Runner

Leonardo Vettori

I'm Leonardo Vettori, a video game graphic designer for machines that shouldn't even be around anymore. I'm active in the homebrew retrogaming scene, where I design graphics for 8-bit computers. I love strict technical limitations... few colors, little memory, and huge pixels. In fact, I have a simple rule: the bigger the pixels, the more fun I have. I designed Nucleo 448 for the C64, Metamorphosis for the ZX Spectrum, and A Great New World for the MSX. Now I can add the graphics for Chrono Runner to my portfolio. I like science fiction, slightly odd ideas, and alternative gameplay... In a world full of photorealistic graphics and incredibly powerful hardware, I continue to build worlds with just a few kilobytes, a few colors, and a few pixels... and I'm happy.

Lorenzo Mancini

A manager by profession and a computer scientist at heart, he decided to come full circle after 35 years, when he created his first game for the MSX. With Chrono Runner, he has entered the retrocoding scene; he hopes to demonstrate how yesterday's architectural constraints can serve as a challenge capable of teaching tomorrow's developers a great deal.

**Lorenzo Mancini**

Fabrizio Luglio

He arranged and composed the music for the video game Chrono Runner. Fabrizio is a musician who lives between Bologna and Turin and has several musical projects to his credit, including his own singer-songwriter project. A computer scientist and ICT teacher, he has always nurtured a passion for vintage computing and enthusiastically accepted the invitation to join the MSX Italia association's development team.

Massimiliano Privato

President of the MSX Italia Association, chemistry teacher, and Kung Fu instructor. Massimiliano Privato's career path is anything but conventional. His passion for computer science began as a child, when he discovered the fascination

**Fabrizio Luglio**



Massimiliano Privato

of programming in BASIC on the MSX. Since then, that spark has never faded, accompanying him in his work, teaching, and even in managing sports activities at the gym, where he has often applied his digital skills. Over the years, this calling has also led him to become a national MIUR trainer for school digitization, while continuing to nurture his connection to the world of retrocomputers and, in particular, the MSX.

On Chrono Runner, Massimiliano handled the sound effects, storyboard, and manual, helping to give the project its identity and atmosphere. For him, this game represents more than just a homebrew production: it is the fulfillment of his dream to bring together and nurture Italian talent within the MSX scene, proving that passion, creativity, and collaboration can still write new chapters for a legendary platform.

Chrono Runner DEVELOPMENT TEAM

Concept, Design and Graphics

- Leonardo Vettori

Programming

- Lorenzo Mancini

Music & Splash Screen

- Fabrizio Luglio

Sound Effects, Storyboard, Manual, Room Review

- Massimiliano Privato

Room Design

Collaboration with Members of the MSX Italia Association:

- Orazio Cacciola

- Antonello Carlomagno

- Alfio Antonino Corsaro

- Stefano Forte

- Gianluca Gaggi

- Lorenzo Moretti

- Massimiliano Privato

- Gabriele Di Siena

- Leonardo Vettori





Interview with Andrea de Prisco

“When a computer scientist and journalist can also solder!”

by David «Cercamon» La Monaca

Intro

Andrea de Prisco, also known by the acronym AdP, has been an IT journalist since 1987. For nearly two decades, he was a leading contributor to MCmicrocomputer, Italy's most important computer magazine in the 1980s and 1990s. He developed a BASIC extension for home computers, as well as precompilers, macroassemblers, and other educational and popular science software. In 1989, he designed and developed ADPnetwork, a fault-tolerant network protocol initially based on serial ports and later on Inmos Transputer processors for Amiga computers, which was showcased at SMAU in Milan and at the International Amiga DevCon in Paris in 1990. He also contributed for brief periods to popular newspapers as La Repubblica, Il Sole 24 Ore, Byte Italia, and many other publications. In 1999, he founded and edited PCimaging, the first Italian magazine entirely dedicated to digital photography. Today he manages the website digiTANTO.it; in 2022, he published the #RaccoltineMC series [0], a systematic collection of his articles from MCmicrocomputer, and two #ADPbooks [1] (in 2023 and

2024) on the history of computing, including personal computing. He has written more than a thousand articles from 1981 to the present. He lives and works in Rome.

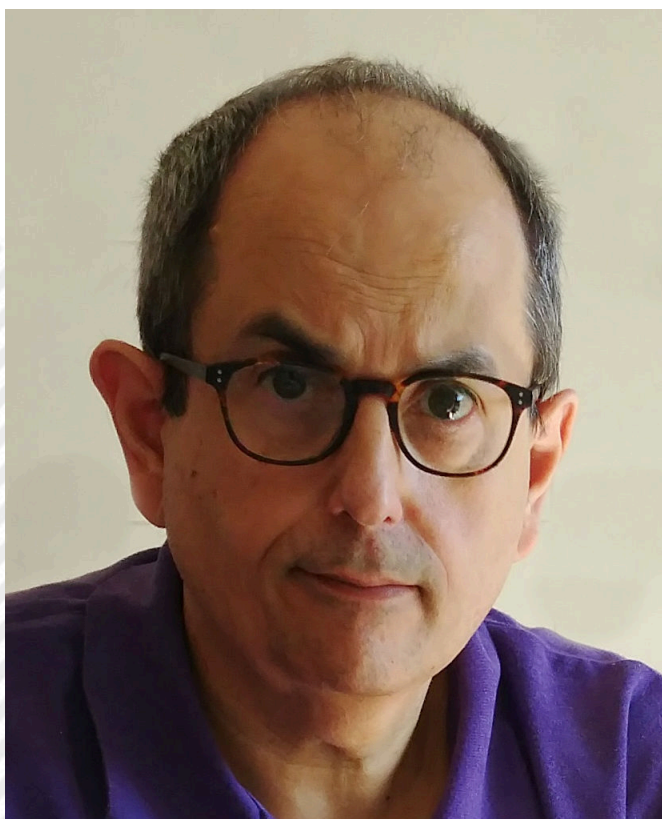
RMW's 20 Questions

1. MCmicrocomputer: nearly twenty years of distinguished service. If you had to choose just one article—just one, and you can't cheat by saying “a series”—which one would it be, and why that one in particular? It's fine to choose based on personal attachment or pride in an achievement.

If I could cheat, I'd undoubtedly cite the entire “Appunti di Informatica” column (“in which I took great pleasure,” to paraphrase :-)). Since I must choose a single article, I'd say... “Sogni mostruosamente proibiti” [2]. In that piece, I proposed—complete with photo manipulations I created myself using Photoshop—a digital back for a Nikon film camera.

Nothing out of the ordinary, except that a few weeks later I was contacted via email by Nikon Corporation “itself,” from Japan. They pointed out the not-insignificant detail that my article—which had also been posted on my personal page, then hosted on MC-link—had “unintentionally” gone viral, causing them some trouble. Web page translation services didn't exist yet (or were well hidden), so the images were the only thing that stood out... so realistic, according to Nikon itself, that they looked real. The text, starting with the title, explained it well... but it wasn't understood by 95% of global visitors. I wasn't asked to take it down, but only to add an English translation at the top of the page—a move that would be particularly appreciated by the Japanese company. Which I did immediately, still in disbelief over the whole thing. Those were different times.

2. Spotlight on ADPnetwork: a fault-tolerant network protocol designed and developed in 1989 for Amiga computers and showcased at SMAU in Milan and DevCon





#ADPaMC (primi anni 90)

Andrea de Prisco at the MCmicrocomputer offices

in Paris. Today, we might even call something like that a “startup.” How did you view it back then?

ADPnetwork wasn't originally conceived as a product with commercial ambitions. Its first version, based on connections between machines via serial ports, was intended solely for educational purposes. It wasn't until a later phase that we developed a hardware card to speed up data transfer, but the publisher (Technimedia) blocked any plans to manufacture and sell it, deeming the project commercially unprofitable for them—unless we offered that Transputer-based card at a very high price. In short, if it had been a startup, I don't think it would have achieved the success we'd hoped for.

3. You wrote about Turing machines, semaphores, memory paging, and multiprocessor architectures in the most famous multi-system computer magazine, MCmicrocomputer, which has always been dedicated to in-depth technical analysis, even at the most advanced levels. And its circulation was remarkable with every issue. How do you explain that back then readers wanted to understand how things worked, while today they often seem to prefer less technical depth?

Those who read MC wanted—and sometimes even asked for—precisely that kind of article, which they probably couldn't find in other magazines focused solely on personal computing, whether single- or multi-platform.

The problem—if we want to call it that—is that times have changed, and consequently, so have the users themselves. Today's web readers—and that's all there are now—often scroll compulsively and prefer not to know too much; they rarely delve into topics on their own initiative, unless compelled by specific work or study requirements. They rarely do so for the sake of “knowledge for its own sake” (though we know that's never really the case), and when they ask me, “Why doesn't MC resume publication?” the reason is precisely that no one would read it today, let alone “buy” it. It's sad, I know.

4. Let's move on to another project: ADP BASIC, about fifty additional commands written in 6502 machine language for the Commodore 64, integrated so well that they made you forget the cumbersome functions available with the original BASIC V2. And Simons' Basic and other extensions were already widespread. At the time, did it ever cross your mind to turn it into a commercial package?





AdP at the MCmicrocomputer editorial office in 1997

As with the Amiga network protocol, the purpose of ADP Basic for the C64 was also educational. The MC editorial staff even sold the cassette or floppy disk to readers who requested it, although the code was published in the magazine—you just had to type it in by hand, and it was quite long. I don't know how many copies were sold; at the time, I was a freelance contributor. It was another couple of years before I moved from Pisa (where I was studying computer science—or rather, Information Sciences, as it was called back then) to Rome and joined the editorial staff full-time. That was in 1987.

5. It seems you switched from the Amiga to the Macintosh in the '90s, “reluctantly”—your own words. How long did it take for that wound to heal? What future would you have imagined or hoped for the Amiga world if Commodore hadn't made all those wrong decisions in the mid-'90s that led to its bankruptcy?

That wound—a double one—hasn't healed; it's still bleeding. I say “double” because it also includes the ADPnetwork affair when it was commercially rejected by the publisher. That probably also prompted my switch to the Macintosh, which, in any case, didn't last long. I liked the “early” Macs, but I wasn't as in love with them as I was with all the machines I'd worked on previously. It's complicated to explain, but I'm sure many will understand. The Amiga was “light-years” ahead of other hardware platforms; it's truly inexplicable how Commodore managed to bring it to such an end. It was probably the computing world that was changing, and we saw the same thing happen shortly afterward with Apple, which, in my view,

also met a grim end. Not from a financial standpoint, of course.

6. In 1994, you launched the “Digital Imaging” column in MC when consumer digital cameras didn't yet exist and the only way to “go digital” was to scan prints. Looking back: were you a visionary, or simply someone who got bored easily and needed the “next project” to devote yourself to?

The “Digital Imaging” column came about by chance—or rather, “by popular demand.” The first article, which was supposed to be a one-off piece, was “Digital Image Processing” [3], and the unexpected interest shown by readers was so great that the column's launch shortly thereafter happened naturally. In other words, it wasn't a “next project” conceived at a desk. That happened often at MC.

7. In 1999, you founded PCimaging, the first Italian magazine entirely dedicated to digital photography. Today, digital photography is everywhere and accessible to everyone through the smartphones we use for practically everything except making phone calls. Do you feel like a misunderstood pioneer, a pioneer who's been heard, or do you still suspect that no one has fully understood what you set out to do?

Even when it comes to PCimaging, I have to give the publisher of MCmicrocomputer a vigorous, posthumous slap on the wrist (or a punch???) I would have liked to do this years earlier, but it was constantly put on hold, only to be released at newsstands when it was already too late.

So yes, misunderstood - but by the publisher. Who probably “didn't fully understand what I wanted to do.”

8. You've given talks on transputers alongside engineers from robotics and industrial control companies, representing a journalistic editorial staff. How did the other speakers look at you? With respect, with curiosity, or with that particular air of condescension that technicians reserve for journalists who “know too much”?

I participated in a conference on Transputers organized





in Milan by Inmos, giving a presentation on ADPnetwork. We were all speakers presenting our own products, so I didn't sense any air of condescension-except for the subtle, mutual kind that's natural in such situations, including my own.

9. You've written about a thousand articles and released almost all of them under a Creative Commons license. Is this an act of generosity, an ideological choice, a form of retaliation against publishers, or all three?

It's not a form of retaliation against publishers; besides, I've never transferred the rights to them: I was paid for the publication of the piece, and in the (theoretical) event that it were republished, I would be paid a second time. If anything, I consider it a way of thanking the readers who have followed me for years: in some ways, I feel indebted to them. I don't know whether to call it an act of generosity or an ideological choice - perhaps both - but it's not up to me to say.

10. digiTANTO.it: a name that's already a manifesto. What exactly does "digiTANTO" mean in your particular interpretation, and, above all, is there a limit to the "so

much" you have in mind?

That "TANTO" in the publication's name - and thus in the domain name registered back then - has no limit in my mind, but it does have one. It's a bit like "to taste," precisely to highlight that we shouldn't even go overboard with digitization, in the broadest sense. There are analog elements that must remain so, like a reassuring knob to adjust the volume on an analog amplifier... just as I consider the tactile and audible feedback of mechanical keyboards and the controls in "old-school" cars to be irreplaceable (and indispensable). For example, we've had enough of the race toward touchscreens everywhere, which, in my opinion, are downright dangerous in cars because they force the driver to look at where and what they're "touching." They should be banned. In short, plenty of digital, but in many cases, less is more.

11. The Amiga had a preemptive multitasking operating system back in 1985, while Windows didn't really get there until, let's say, after 1993. Every time you hear someone say that "Microsoft invented multitasking," how long does it take before you can breathe normally again?

More than just breathing normally, I'd stop chuckling under my mustache... which I don't have. To be honest, the Amiga didn't "invent" multitasking either; it "merely" brought it into users' homes first—and that's no small feat! That's actually exactly why I fell in love—almost instantly—with this fantastic machine and its "prodigious" operating system. We used to study this stuff in computer science class, and for us undergrads in the early '80s, it was science fiction—or almost. A recurring thought, somewhat melancholic in its own way, was precisely: I wonder when we'll have these things on machines that everyone can afford! It took just a few years to see—and, above all, to experience firsthand—this incredible technology. Thanks to the Amiga development team, even before it became Commodore.

12. You're also on X (formerly Twitter) as @adpware. Have social networks improved or worsened tech journalism? Feel free to add an honest assessment of how much time

AMIGA

ADPnetwork: una rete per Amiga

di Andrea de Prisco

Come anticipato lo scorso mese, a partire da questo numero presenteremo ADPnetwork, la nostra rete software per Amiga 500, 1000 e 2000 scritta interamente utilizzando l'ADPmttb 2.0, visto, anche quello, sul numero scorso.

Trattandosi di una realizzazione tutt'altro che banale, sia sotto il profilo tecnico che implementativo, la presentazione del lavoro ci terrà impegnati per diverse puntate. Nella versione in cui vedrà la luce su queste pagine, tutti i collegamenti tra le macchine sfruttano l'interfaccia seriale dei singoli sistemi: in questa configurazione, ovviamente non andremo oltre gli aspetti puramente didattici della realizzazione a causa della bassa velocità di trasferimento che però potrà essere più che sufficiente per carichi leggeri. ADPnetwork è di fatto una piattaforma sulla quale costruire applicazioni distribuite, file system distribuiti, sistemi fault tolerant ed è indipendente, questo è molto importante, dalla natura del mezzo di comunicazione fisico adottato. Per essere ancora più precisi, il software di rete ADPnetwork è addirittura indipendente anche dalla macchina, l'Amiga, sulla quale attualmente gira: basta infatti scrivere l'mttb per un altro sistema multitasking (ad esempio Unix, OS/2), aggiungere o togliere un po' di include machine-dependent, ricompilare il tutto e il gioco è fatto.

Dopo la presentazione del vero e proprio software di rete (tutti i processi che costituiscono ADPnetwork), lasceremo la parola a Marco Ciuchini e Andrea Sestoni che hanno sviluppato un Handler e un NetServer (ovviamente rigorosamente Amiga) per la rete, in modo da rendere visibile da ogni applicazione in esecuzione su qualsiasi macchina tutte le unità di ingresso uscite disponibili sull'intera rete. Cilegna finale, sempre grazie all'handler, la possibilità di utilizzare la rete anche da WorkBench dove troveremo la nostra brava icona NET

(vicino alle altre icone relative a floppy, harddisk, ram, radi) che una volta cliccato ci mostrerà le icone delle macchine attualmente in rete e click-and-o su queste accederemo ai vari device disponibili sui nodi e, conseguentemente, ai file. Tutto tramite mouse... non male, vero?

Un po' di storia

Lo schema di funzionamento «circolare» di ADPnetwork, come vedremo meglio in seguito, è tutt'altro che originale. Disponendo infatti su ogni macchina di una sola interfaccia di ingresso e una di uscita (nel nostro caso l'IO seriale) tale forma di comunicazione è l'unica possibile volendo collegare più macchine tra di loro. Altre possibili tipologie (figura 1) sono quelle «a stella», in cui tutte le macchine sono collegate ad un unico nodo centrale, ad «interconnessione completa» in cui ogni macchina è direttamente collegata con tutte le altre macchine, ad «albero» dove i nodi sono collegati gerarchicamente come i file di un file system, appunto, gerarchico. Non mancano tipologie più complesse, come il «mesh quadrato», l'«ipercube» o le strutture ad «Omega» o, ancor di più, tipologie miste in cui troviamo varie sottoreti con architetture diverse interconnesse a loro volta tra loro secondo le più svariate tipologie. ADPnetwork, come detto, adotta uno schema di funzionamento «circolare» in cui ogni macchina ha un nodo precedente dal quale riceve il flusso dei dati e uno successivo al quale trasmette, o ritrasmette, dati. È chiaro a questo punto che ogni macchina analizzerà i dati ricevuti dalla rete o dovrà essere in grado di riconoscere messaggi per sé da inoltrare agli opportuni server, oppure da rimettere in circolo non riconoscendosi come destinatario. In questo modo è sia possibile che qualsiasi macchina dialoghi con qualsiasi altra macchina della rete, sia che in ogni istante

(nel senso fisico e non solo in quello logico del termine) più macchine effettuino operazioni sulla rete. Quest'ultima caratteristica (non presente nemmeno in architetture ultra diffuse come Ethernet e Token Ring) è forse la più importante di tutta l'architettura di ADPnetwork, ed è implementata grazie al fatto che la struttura di comunicazione utilizzata è solo apparentemente condivisa da tutte le macchine. Infatti non succede che l'intero mezzo fisico appartenga a tutti i nodi (con la necessità quindi di arbitrare l'accesso in maniera centralizzata o distribuita, deterministicamente o non) ma ogni nodo è proprietario del collegamento alla macchina successiva, e quindi non deve dar conto alla rimanente rete delle sue operazioni. Un'occhiata allo schema di collegamento di figura 2 molto probabilmente vi chiarirà le idee più di mille parole.

L'attuale release funzionante di ADPnetwork, la 3.0, permette a qualsiasi macchina di inviare messaggi a qualsiasi altro processo in esecuzione su qualsiasi altra macchina collegata alla rete. Ogni messaggio può essere di lunghezza arbitraria e per inoltrarlo via rete il processo mittente dovrà naturalmente specificare il nodo destinatario, la porta mittente su quel nodo (creata cioè dal processo destinatario) e consegnare il messaggio al software di rete. Sarà poi questo che, impacchettandolo opportunamente ed utilizzando l'interfaccia d'uscita verso la macchina «successiva» farà in modo (naturalmente con la complicità di tutti i processi di rete di tutte le macchine «attraversate») che il messaggio giunga a destinazione e sulla giusta porta.

Attualmente ADPnetwork prevede anche alcune forme di tolleranza ai guasti, ivi comprese cadute del supporto fisico o più semplicemente spurie di trasmissione che potrebbero cambiare il contenuto di un msg. Per caduta del supporto fisico intendiamo anche la dire

MCmicrocomputer n. 89 - ottobre 1989

The first of 6 articles about ADPnetwork





In circolazione dischetti che distruggono le memorie

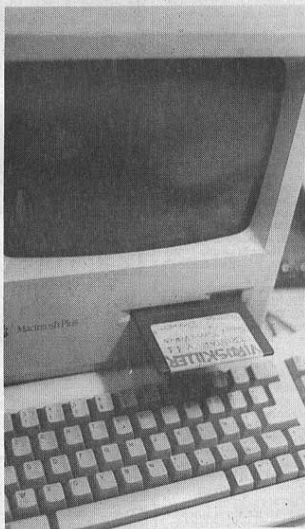
Virus e killer lottano dentro il computer

L'esperto: «Il video scoppia? Assurdo!»

SI INFILTRA, non visto, nelle memorie e nei programmi. Corre, indisturbato, lungo le linee telefoniche e i cavi telex di mezzo mondo. Si manifesta, a volte in forma benigna più spesso con conseguenze devastanti, quando ormai l'infezione è in stadio avanzato. È il «virus» del computer, il cancro dei sistemi informatici, l'ultima, sconvolgente novità, importata anche in Italia da quei paesi che detengono il monopolio nella produzione e progettazione dell'elettronica avanzata ed intelligente. Sulla storia e sull'origine del virus, ma si dovrebbe parlare al plurale perché gli esperti avvertono che ne esistono tanti e diversi per ognuno dei più diffusi personal in commercio, si sono fatte molte illusioni e anche un po' di dietrologia.

C'è chi li vuole partoriti dalla fervida fantasia degli «hacker», gli «enfant terribles» della tastiera e del byte che armati solo di modesti home computer collegati alla rete telefonica riescono a penetrare nelle difese di grandi banche dati, centri di elaborazione, ministeri ed organizzazioni internazionali. Altri invece sono convinti che a scatenare la «peste» siano state le società specializzate nella produzione di pacchetti di programmazione con lo specifico intento di gettare nel panico quelle migliaia di utenti, soprattutto amatori, che per non sborsare le centinaia di migliaia di lire necessarie all'acquisto di un programma D.O.C. preferiscono ricorrere alle copie pirata.

Scherzo di cattivo gusto o precisa strategia industriale? Probabilmente non lo si saprà mai anche perché gli autori-untori si celano dietro sigle e firme di fantasia. Certo è invece che da quando, ormai da qualche mese, l'infezione si è manifestata (all'estero come una vera e propria epidemia nel nostro



Un «virus-killer» inserito in un computer

paese con casi sporadici) si sono moltiplicati, assieme alle grida d'allarme, gli sforzi per trovare antidoti efficaci. In un articolo pubblicato già qualche mese fa su «Microcomputer», una delle più autorevoli riviste del settore, venivano spiegati, con il linguaggio degli iniziati, i meccanismi per fronteggiare la nuova insidia. «Per semplificare possiamo dire che il virus non è altro che un insieme di comandi segreti, un ospite clandestino, inserito quasi sempre nella fase iniziale di un qual-

siasi programma, ad esempio un videogame. — dice Andrea De Prisco, redattore della rivista ed esperto di programmazione — Quando il dischetto che lo contiene viene caricato nel computer il virus si trasferisce nella memoria e di qui, se l'utente non prende precauzioni, a tutti gli altri dischi.

In qualche caso l'avvenuto contagio si manifesta con una frase fra l'ironico ed il minaccioso come quella che ha fatto drizzare i capelli in testa a numerosi proprietari di «Amiga» il modello forse

più diffuso della Commodore. «Qualcosa di meraviglioso sta succedendo nel vostro computer — hanno letto sullo schermo — il tuo Amiga sta bene... o anche meglio... alcuni tuoi dischetti sono stati infettati da un virus...».

Altre volte sono comparsi dei granchi che divoravano quanto appariva sul video. Ma il virus più subdolo è quello progettato in modo tale da moltiplicarsi ad ogni successivo passaggio nell'elaboratore con il risultato quindi di saturare dopo poco tempo le capacità operative. «Però su questa storia si è fatto fin troppo allarmismo. — afferma ancora Andrea De Prisco — C'è stato addirittura qualche incompetente che ha scritto e affermato pubblicamente che il virus può danneggiare fisicamente i sistemi elettronici e farli scoppiare. Invece si tratta di dati, di informazioni, magari aberranti ma che come tali possono sempre essere cancellati. Il modo più semplice resta quello di spegnere e ricendere la macchina dopo ogni utilizzazione di un dischetto sospetto (ad esempio un programma arrivato per via pirata) annullando così la possibilità di trasmissione del contagio».

Ma come e soprattutto a che prezzo? Ancora una volta la risposta è venuta da qualche mente geniale (il papà del virus?) che ha progettato un programma in grado di fare pulizia nelle memorie e sanare le infiltrazioni. È il «Virus-killer», l'antibiotico elettronico in vendita in tutti i formati e per tutti i personal nei negozi specializzati a poche decine di migliaia di lire. Chi vuole spendere meno poi può sempre acquistarlo, nella solita copia pirata a prezzi stracciati, sui banchetti di Porta Portese. Chissà però se anche la cura non è stata inquinata!

Stefano Lugli

month, and the print shop—unbelievable but true—would retype them by hand since they weren't equipped to handle files, not even simple TXT files. The proofs would then return to the editorial office and be corrected by hand through a “verbal” comparison with the originals: one proofreader would read aloud the printed text I'd sent, while the other would follow along on the typeset proof, noting any discrepancies. And since the texts often contained formulas or commands (which are no laughing matter, though the proofreaders had degrees in the humanities—no disrespect intended), many things slipped through the cracks. The irony was that in an article [4], in which I harshly criticized the errors in the printed manual accompanying the Commodore 1541 drive—while pointing out the corrections—some of the commands listed in the text ended up being incorrect in MC as well. It's laughable—or rather, no, it's enough to make you cry!!!

14. We know that the #RaccoltineMC series and the #ADPbooks are available for purchase on Amazon. Do you think there's something vaguely surreal about the fact that articles written on an Amiga—or perhaps an Atari ST, we won't say—end up being distributed by a cloud computing giant founded thirty-six years later? Does it make you smile, or does it make you want to kick something?

Neither of those things—times have changed, and we can't pretend otherwise. Nor should we try to rebel; it would be a waste of time... fighting windmills.

15. You've contributed to AudioReview and AudioHomeTheatre: so hi-fi is a serious passion for you, not just a passing fancy. Today, do you listen to music via streaming, on vinyl, or do you still have a CD player at home that you defend fiercely as if it were an elderly relative?

My collaboration with AudioReview, AudioHomeTheatre, and AudioCarStereo didn't last long—by my own choice. Those were the same years when I was writing mainly for MC, which took up almost all of my available time. I was—and still am—a “casual” enthusiast of music and its faithful reproduction, more in the car stereo field than in home

AdP interviewed on "Il Tempo" dated 22.04.88

you personally spend—or waste—on them.

In my case, I wouldn't call it a waste of time. I spend “just enough” on it, but only on Facebook for my public page. On other social media platforms (especially Twitter/X), I registered an account under my name, adpware, but I don't use them very much—I'd say almost not at all.

13. The Commodore 64 came out in 1982, the Amiga in 1985. In 2023, you published the #RaccoltineMC, compiling and correcting those articles line by line. Did you find any embarrassing mistakes, or did you discover that the 20-year-old who wrote those things was smarter than you remembered?

I wouldn't call them embarrassing; I mainly had to correct a few oversights by the proofreaders at MC, which had slipped past them at that stage of production. I'm talking about the pre-'87 years, when I was a freelance contributor based in Pisa. I'd send my articles printed on paper every





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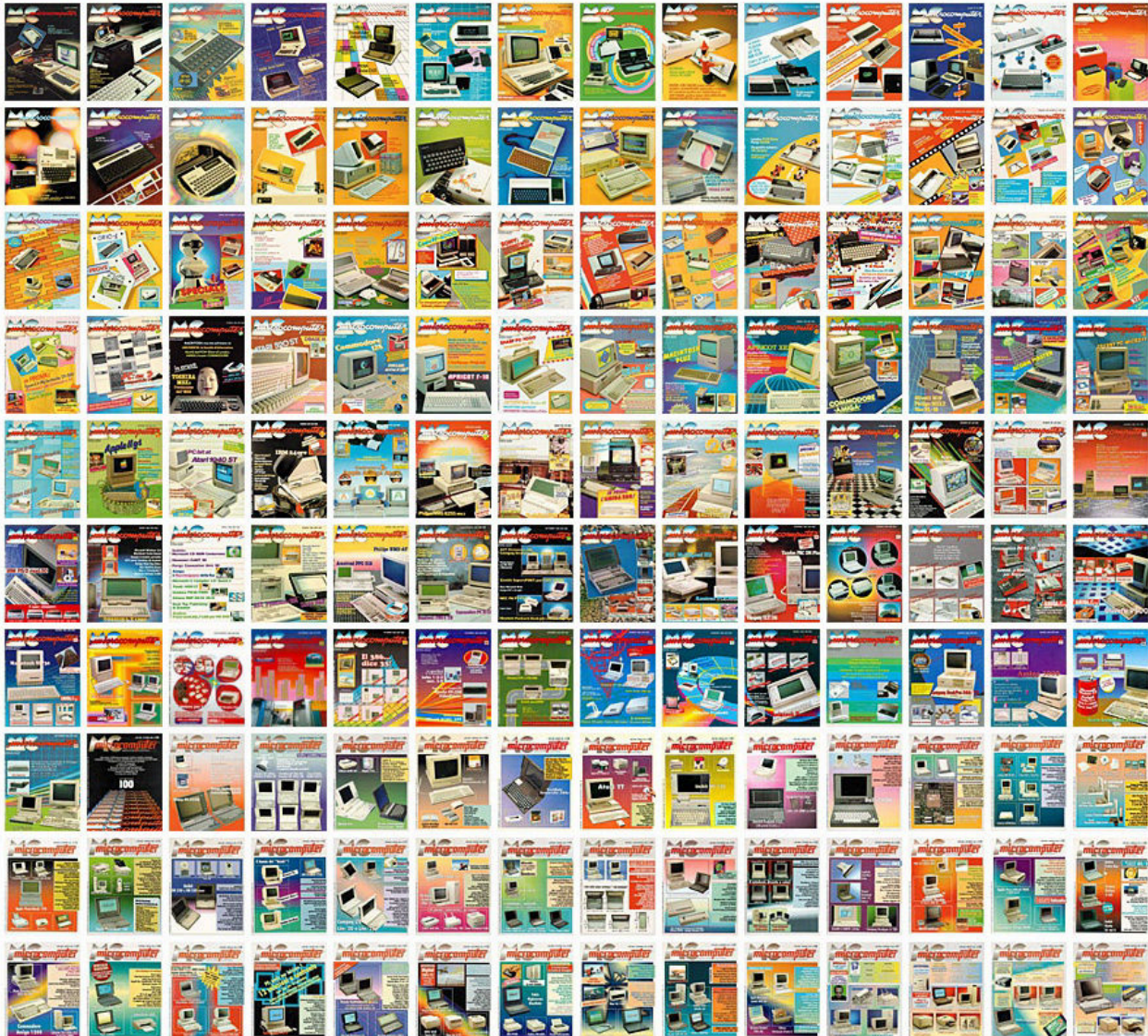
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DAL 1981 (AL 2001) LA PIU' AUTOREVOLE RIVISTA DI INFORMATICA PERSONALE

O N L I N E !

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or portable systems. Perhaps because in the car, during the long trips I often took, I could devote more time to it. And there, I was impossible to please: insane audio systems!

More than a CD, I'd love to listen to a good, old, crackling vinyl record... but I'm not set up for that, and we'd better change the subject or I risk making some impulsive purchases in that regard.

16. Artificial Intelligence: It's 2026, and language models

are writing tech articles quite convincingly. As an IT journalist like you, who has built your credibility on the depth of your technical expertise, how do you position yourself against this new competition? And above all: have you already used them for anything, and if so, for what?

I often use AI to solve problems—usually coding-related—but I never take the answers I receive at face value, and often (all too often) I have to challenge them and reject them outright. And the classic, unsolicited “You’re





right, sorry” keeps coming up over and over.

Other times, I use AI to gather information for new articles; I especially appreciate the speed of chatbots, though not so much the quality of their responses. Basically, I approach AI the same way I did, back in my MC days, with the external contributors I coordinated. They had to be kept under close supervision.

I won't hide the fact that just once, as an experiment, I asked an AI chatbot to write a piece for me on a technical topic within my area of expertise. I trashed it almost immediately, just as I would have done at MC with unpublishable articles that were occasionally submitted to us.

17. The Inmos Transputer was designed for massive parallel computing and seemed destined to revolutionize computing. Then it vanished almost into thin air, swept away by the x86 architecture. Looking today at GPUs and parallel computing in AI, do you feel a bit like those fans who say, “I told you so thirty years ago”?

The best ideas don't always get the success they deserve—just as was the case with Commodore and, in particular, the Amiga. Still, those were the days when innovations came one after another, so the risk of quickly moving on to the next thing—rightly or wrongly—was extremely high.

18. You've written for **Il Sole 24 Ore and **La Repubblica**, so you know how to communicate complex ideas to the general public and how to explain technology to non-experts. What is the most technologically significant development of the past five years that general-interest journalists continue to explain in the most inaccurate way possible? And historically, what has been the most pronounced prejudice against a “new technology” that you've noticed in non-specialized publications?**

When it comes to modern journalists—sometimes just “kids” or little more—I take issue with the fact that they all too often tackle topics about which they know next to nothing. They spout blunders that border on the ridiculous, to put it mildly. It happens on TV too, in various newscasts, and when they “overstep” into my field, I can't help but let out a (bitter) chuckle.

And I wonder: just how much other nonsense do they



The 1999 issue of the monthly magazine PC Imaging, edited by AdP

spout in fields outside my area of expertise? I fear a lot! Looking back, I was struck by the countless “careless remarks” that appeared in many newspapers regarding the first computer viruses—we're talking about the late 1980s. I really appreciated it when **Il Tempo** contacted me for a phone interview on the subject—which was later published—but even there, not everything went smoothly. After receiving the draft for approval, I had to correct the reporter, who had hastily misinterpreted some parts of our conversation. It happens.

19. If you could go back to 1985 with today's knowledge and had a Commodore 64 and an internet connection at your disposal (let's assume a miracle, perhaps based on an ESP32, just to tinker around a bit—does that remind you of anything?), what would you do first: check your messages on a BBS, try out the latest game releases and demos, or use a remote LLM?

If I could go back to 1985 today—a suitably equipped DeLorean is something no one would turn down!—even knowing what happened in the decades that followed—I imagine the most I could have done would have been to connect to a BBS, one of the few that existed at the time,





Home page of digiTANTO.it website

starting with MC-link, even though it hadn't been officially released yet. You could connect if you knew the number to dial, which wasn't yet public (but I imagine they wouldn't have denied me access, even though I was just an external contributor at the time).

The reference in the question to my recent #MicroC64 is also clear—I've discussed it extensively on my public Facebook page [5] in numerous posts, and especially on digiTANTO.it in several articles [6]. More will follow, because the adventure is far from over, as I'm currently working on version 2.0 with a PCB and a substantial redesign of the small C64-style cabinet.

Among the many tidbits I've publicly shared along the way—plot twist!—I'd like to point out that I've never been a regular video game player, though I've always been curious about them from a safe distance. As I like to say, it's probably because I was—and still am—undoubtedly a “sucker” at them, meaning I'm incapable of playing without ending up with “GAME OVER” within a few seconds. All this to say—at the risk of repeating myself—that the #MicroC64, too, has had and continues to have solely an educational purpose. This time, that goes for me as well, since this “little game” has allowed me to learn—through hands-on experimentation—a thousand and one things I was completely unaware of just a few weeks ago.

20. Last question, and it's not a trick question—or maybe it is: in 20 or 50 years, when someone digs through digital archives and finds digiTANTO.it, what would you want them to think of you? A journalist? A computer scientist? A technician? A popularizer? Or simply someone who lived through the most interesting era in the history of computing and had the good sense to take notes? An enthusiast.

Outro

We'd like to thank AdP for agreeing to our proposal for an interview that strays a bit from the usual formal format. As we imagined, AdP graciously answered our weird questions about himself and his professional career. What emerges is a person who, as he himself has described himself, is first and foremost passionate and curious—someone capable of deeply understanding technology from every era and presenting it to readers and followers in an entertaining and straightforward way, using the elements that have always distinguished his articles and that inspire readers to delve deeper, experiment, and explore. That's why we invite RMW readers to check out the references at the end of the interview and the links included in AdP's answers. It won't be difficult to have them translated into English, these days, will it? For those who love computing—both past and present—and want to explore it up close from an original, educational, and witty perspective, there's certainly no shortage of material.

Basic References

digiTANTO - www.digitanto.it

FB - <https://www.facebook.com/andreadeprisco.adp>

Notes and links

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Ocean Software: the story of a European video game legend

by Carlo Nithaiah Del Mar Pirazzini

In the video game landscape of the 1980s and 1990s, few European companies managed to leave as deep a mark as Ocean Software. For millions of gamers who grew up playing on a ZX Spectrum, a Commodore 64, or an Amiga, the Ocean logo represented a promise: spectacular games, high-quality arcade ports, and official adaptations of the biggest movies of the time.

Founded in the United Kingdom during the so-called “golden age” of home computers, Ocean Software played a decisive role in the growth of the European video game industry, becoming one of the continent’s most important software houses. Its history spans the very evolution of the video game medium: from 8-bit microcomputers to the arrival of 32-bit consoles.

The Origins... From Spectrum Games to Ocean Software

The story of Ocean Software begins in the early 1980s, a period of tremendous growth for the British video game market. In the United Kingdom, a vibrant creative scene was emerging around home computers such as the ZX Spectrum, Commodore 64, and Amstrad CPC.

David Ward and Jon Woods, inspired by the success of companies like Imagine Software and Bug-Byte, initially founded a company called Spectrum Games. The original idea was relatively simple: to sell video games via catalog and distribute titles for the most popular computers of the time.

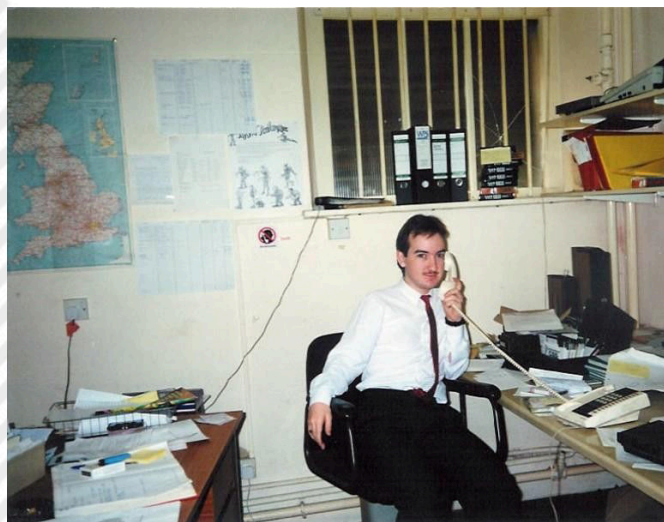


Fig. 1 - The Offices

Soon, however, the two entrepreneurs realized that limiting themselves to the “Spectrum” brand could be a disadvantage for users of other platforms. The company was therefore renamed Ocean Software.

The new brand quickly began to establish itself in the market thanks to a very aggressive strategy: releasing a large number of games on multiple systems simultaneously. Among the first titles released were *Hunchback*, *High Noon*, *Gilligan’s Gold*, and *Moon Alert*.

These games allowed the company to grow rapidly and build a reputation in the British market.

Growth and Expansion in the 1980s

One of the factors that set Ocean Software apart from many of its competitors was its ability to recognize the commercial value of licensing.

While many software companies at the time focused exclusively on original ideas, Ocean realized that linking a video game to a famous brand could dramatically boost sales.

This insight proved to be a winning strategy.

Within a few years, the company secured the rights to produce video games based on hugely successful movies. This led to adaptations of Rambo, RoboCop, Cobra, Miami Vice, Batman, Terminator 2, and Jurassic Park.

Ocean quickly became synonymous with “official video games based on movies.”

At the time, holding a movie license represented a huge competitive advantage. Specialized magazines published dedicated previews, and players could finally control the heroes they’d seen on the big screen.

The Agreement with Konami and the Arcade Porting

Another pivotal moment in the company’s history was the agreement with Konami.

In the mid-1980s, Ocean secured the rights to port numerous Japanese arcade games to European home computers.

For many Western gamers, the Ocean versions were their first exposure to some of the great arcade classics.





Fig. 2 - One of Ocean's many logos

Among the converted games were Green Beret, Yie Ar Kung-Fu, Hyper Sports, and Track & Field.

Subsequently, collaborations with Taito also took place, thanks to which Ocean released conversions of historic titles such as Bubble Bobble, Renegade, and Arkanoid.

Arcade conversions were crucial during that period. Arcades offered technically superior experiences compared to home computers, and bringing those games into people's homes was a true technical feat.

Ocean built much of its reputation precisely on the quality of these conversions.

The Acquisition of Imagine Software and Major Original Hits

In 1984, Ocean acquired what remained of Imagine Software, a Liverpool-based software house that had become famous both for its games and for its spectacular bankruptcy, chronicled in a well-known British television documentary.

The acquisition was significant in several respects: It allowed Ocean to gain access to technology and experienced personnel, strengthened the company's presence in the British market, and cemented Ocean's image as a rising power in the European video game industry.

The deal also demonstrated the financial stability the company had achieved at a time when many software houses were failing rapidly.

Although Ocean is best remembered for its licensed games, the company also released highly acclaimed original titles.

Among the most important titles are:

- **Head Over Heels**, created by Jon Ritman and Bernie Drummond, which is still considered one of the best isometric games ever made. The game stood out for its advanced level design, detailed graphics, humor, and innovative gameplay.

Many video game historians consider it an absolute classic of the 8-bit era.

- *Wizball* by Sensible Software, which represented a unique blend of shooter and experimental arcade game.

The title was praised for its originality, soundtrack, graphic style, and innovative gameplay.

It is still remembered today as one of the most creative games of the Commodore 64 era.

Ocean and the Amiga Era

With the arrival of 16-bit computers such as the Atari ST and Commodore Amiga, Ocean was able to adapt quickly. During the late 1980s and early 1990s, the company released numerous technically advanced games.

The Amiga, in particular, became a key platform for Ocean. Titles such as *RoboCop 3*, *Batman: The Movie*, *The Addams Family*, and *Jurassic Park* showcased impressive audiovisual quality for the time.

The company also invested heavily in the presentation of its products, focusing on elaborate packaging, professional artwork, aggressive advertising campaigns, and a strong presence in specialized magazines.

Ocean quickly understood the importance of marketing in the video game industry.

Ocean's Production Model

One of Ocean Software's most interesting features was its production model.

The company did not develop all its games in-house. Instead, it collaborated with numerous external studios and freelance programmers throughout the United Kingdom. This approach offered several advantages, including lower costs, rapid production, a wide range of creative options, and the ability to work on many projects simultaneously. Among the studios and teams that collaborated with





Fig. 3 - Some of the games produced by Ocean

Ocean were Sensible Software, Denton Designs, Digital Image Design, and Special FX.

This network of collaborations contributed enormously to the company's success.

The 1990s and the Changing Market

By the early 1990s, the video game market had changed profoundly.

Consoles began to dominate the industry, while European home computers gradually lost their prominence.

Furthermore, development costs rose, teams grew larger, 3D graphics required enormous investments, and the production model of the 1980s began to become obsolete. Ocean tried to adapt. The company founded an in-house studio called Tribe to tackle the new generation of 32- and 64-bit hardware. However, the market was changing too rapidly. Large multinational corporations were beginning to acquire independent European publishers.

The Acquisition by Infogrames

In 1996, Ocean Software was acquired by the French company Infogrames. The deal effectively marked the end of the company's independence.

For a few years, the Ocean brand continued to exist, but it was gradually absorbed entirely.

The last title released under the Ocean brand was *GT 64: Championship Edition* for the Nintendo 64.

The company was subsequently transformed into Infogrames UK. The demise of Ocean also symbolically marked the end of the golden age of British software houses founded in the 1980s.

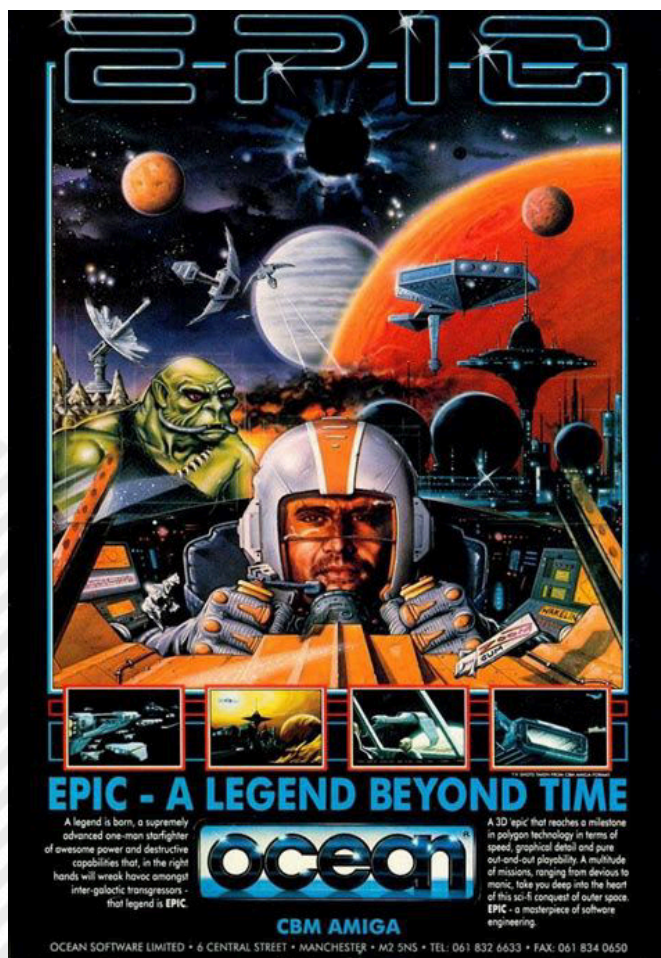


Fig. 4 - EPIC - a legend beyond time





Fig. 5 - Composing music for a video game

The Legacy of Ocean Software

Despite its demise, Ocean Software continues to be remembered as one of the most important companies in the history of European video games. The company helped popularize video games in Europe, professionalize the British industry, make arcade ports popular, consolidate the licensed games market, and showcase the talent of numerous independent developers.

Many games published by Ocean are now considered all-time classics. Furthermore, its production model—based on external collaborations—in some ways foreshadowed the modern decentralized structures of the video game industry.

For gamers who grew up in the 1980s and 1990s, the Ocean logo remains a symbol of nostalgia and creativity to this day.

Conclusion

The history of Ocean Software is closely tied to the evolution of European video games.

Founded in a small market dominated by British home computers, the company managed, in just a few years, to transform itself into an international powerhouse,

capable of publishing games on dozens of different platforms and securing some of the most important film licenses of the era.

Ocean perfectly embodied the creative and pioneering spirit of the 1980s—an era when small groups of developers could create video games destined to go down in history. Even today, decades later, the name Ocean Software continues to evoke one of the most fascinating periods in the entire video game industry.

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The Legend of Ultimate Play The Game

by Carlo Nithaiah Del Mar Pirazzini and Giampaolo Moraschi

Ultimate Play The Game wasn't just a historic name: it's one of the cornerstones of the legend of British home computers in the 1980s. Before that group of developers became Rare and achieved success on the Super Nintendo and Nintendo 64, there were the Stamper brothers in a warehouse in Ashby-de-la-Zouch who, almost silently, were redefining what a ZX Spectrum could do. This retrospective traces the history of that unassuming and legendary software house which, in just a few years, left an indelible mark on the ZX Spectrum, the Commodore 64, and, more broadly, on the entire concept of isometric game design.



The Origins in Ashby-de-la-Zouch

Ultimate Play The Game was the publishing brand of Ashby Computers & Graphics Ltd., founded in 1982 in Ashby-de-la-Zouch, Leicestershire, by Tim and Chris Stamper, who were already active in the development of arcade video games. Chris handled the coding primarily, while Tim took care of the graphics and even the iconic cover art, with collaborators such as John Lathbury and Carol Stamper working alongside them.

From the very beginning, the team's philosophy was crystal clear: a small number of games, meticulously crafted, no technical compromises, and very little media exposure. The Stampers rarely gave interviews, kept their office doors closed, and never revealed their development secrets. The company deliberately cultivated an aura of mystery, mirroring the quality of its products. Within a couple of years, "Ultimate" became synonymous with excellence on the ZX Spectrum: every new cassette was an event, and every loading screen set the standard.

The ZX Spectrum Era: Jetpac, Sabreman, and the Trademark
Ultimate's flagship platform was the ZX Spectrum in its 16K and 48K versions. While other developers struggled

to squeeze the most out of the machine, the Stampers created games that seemed to come from far more powerful hardware. Jetpac (1983), developed for the 16K line, wowed everyone with its large sprites, smooth animations, and gameplay that was both intuitive and deep. It was a pure, no-frills arcade game featuring an astronaut, his rocket, hordes of aliens, and an almost perfect gameplay loop. Jetpac not only sold incredibly well but also became one of the main showcases of Ultimate's technical talent. From then on, the company stepped on the gas, especially with what would go down in history as the Sabreman Series. Sabre Wulf (1984) transported players to a labyrinthine jungle viewed from above, with frantic exploration that foreshadowed many later action-adventure games. Underwulde, on the other hand, shifted the action to a vertical underground world.

Knight Lore (1984) represented the true revolution: one of the very first "cinematic" isometric games, featuring the hero Sabreman moving through a simulated three-dimensional castle, transforming into a werewolf at moonrise. Knight Lore, along with Alien 8 (1985), introduced and perfected the Filmation engine. This was proprietary technology that enabled multi-screen isometric environments, illusions of depth, characters hidden behind objects, and puzzles based on physical interaction between game elements.

At the time, it came as a shock: few believed that a ZX Spectrum was capable of handling graphics of that caliber.



ATIC ATAC: a little masterpiece!





The Stamper brothers' most famous and acclaimed titles

The gaming press, from CRASH to Sinclair User, openly spoke of a “new standard” and a true “generational leap.” The most remarkable aspect was that Ultimate focused not only on technical excellence but also on the quality of gameplay. Its games were challenging, often ruthless, but always well-balanced. They required memory, reflexes, and curiosity, in an era when a game’s longevity was determined by discovery rather than the sheer volume of content.

Mystery, Marketing, and Cult Status

In addition to the games themselves, Ultimate’s unique characteristics also contributed to its legendary status. The company avoided the press, did not credit individual developers on game covers, and communicated very little beyond manuals and packaging.

In 1988, CRASH, one of the leading magazines for the ZX Spectrum, dedicated a lengthy special feature to the “Ultimate legend,” highlighting how the team’s secrecy—inaccessible offices, no guided tours, no playable previews—had fueled the perception of a sort of “Apple of British video games,” focused on the product and unconcerned

with its image.

This approach also proved successful commercially. Between 1983 and 1984, the mere words “Ultimate Play The Game” on the cover were enough to guarantee excellent sales, even in the absence of screenshots or detailed previews. In a market crowded with short-lived software companies, Ultimate represented a guarantee of consistent quality.

Beyond the Spectrum: Commodore 64 and Experiments

Although the ZX Spectrum remained the main platform, Ultimate did not ignore the rest of the 8-bit market. In the mid-1980s, it also released several titles for the Commodore 64. In addition to conversions of games such as Sabre Wulf, Underwulde, and Nightshade, the label created a series of productions closely tied to the Commodore platform, including The Staff of Karnath, Entombed, Blackwyche, Dragon Skulle, Imhotep, and Outlaws. Many of these titles were developed by external partners and published under the Ultimate label, while still maintaining the high quality standards the brand had built up over the years.





Jetpack... a full-fledged arcade game in just 16k

Although the Commodore 64 versions were not always as groundbreaking as their Spectrum counterparts, they helped expand the brand's reach and solidify Ultimate's image as a high-profile multiplatform developer. Nevertheless, the company's true creative legacy remains tied to the Sinclair computer: that is where the most innovative ideas were born, that is where the Filmotion engine performed at its best, and that is where the community cemented the legend of Ultimate.

The Technical Legacy: Filmotion and Its Successors

The Filmotion engine was not merely a graphical gimmick, but a new way of conceiving isometric gameplay. Environments constructed as three-dimensional puzzles, height management, interaction between characters and objects, and sophisticated depth systems anticipated far more famous productions by years.

Many developers looked to *Knight Lore* and *Alien 8* as models to follow. By the late 1980s, numerous studios adopted similar solutions, contributing to the spread of

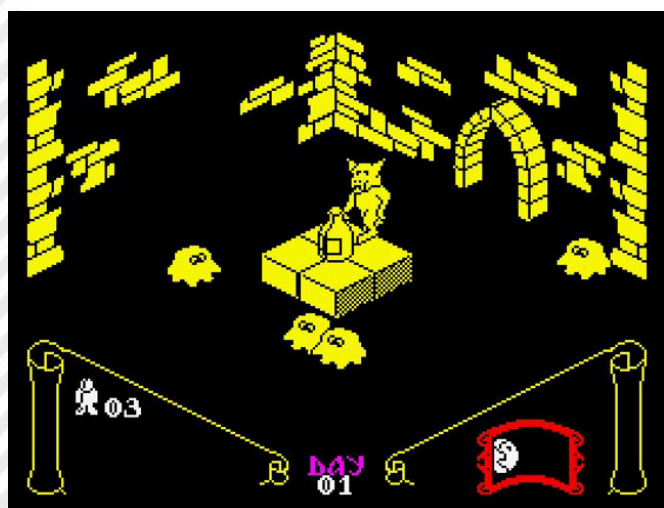
isometric exploration and environments designed as three-dimensional puzzles. Successful series such as *The Last Ninja* on the Commodore 64 demonstrated how the isometric perspective had by then become one of the most interesting expressive tools in European game design of the era, even while following different gameplay paths than Ultimate's titles.

Ultimate's influence was such that, for a time, the phrase "Ultimate-style isometric game" became almost synonymous with a specific subgenre. Even the idea of creating proprietary engines that could be reused across multiple productions was decidedly ahead of its time. The Stamper brothers would carry this approach with them into the next phase of their careers.

The Transition to Rare

Between 1985 and 1986, Ultimate Play The Game gradually began to scale back production. While new titles continued to be released under the historic brand, behind the scenes the Stammers were already planning for the future. The 8-bit era was beginning to show its limitations, while Nintendo consoles offered increasingly attractive opportunities.

In 1985, the Stammers founded Rare Ltd., while the Ultimate brand continued to be used for a few more years. During the second half of the 1980s, the team's focus gradually shifted toward development for the NES, thanks in part to securing one of the rare official Nintendo licenses granted to Western developers. Gradually, Rare became the new face of the company, first with NES ports and original titles, then with its success on the Super Nintendo



Knight Lore and its beautiful game engine



Alien 8



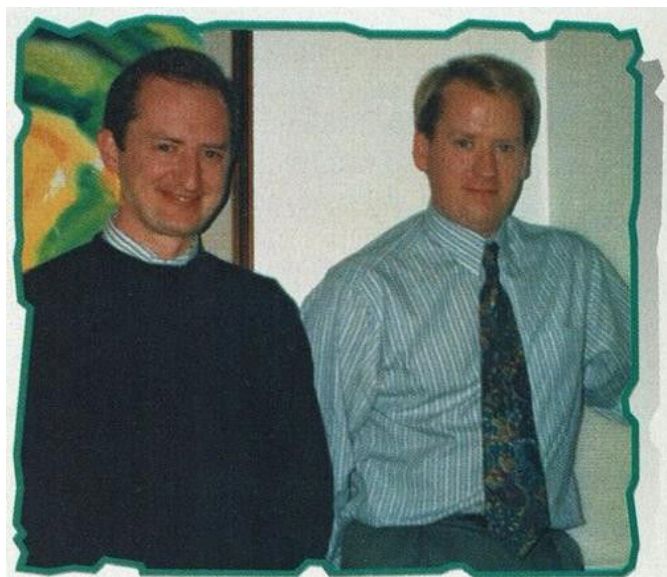
**On the Super Nintendo, this title was revolutionary...
Donkey Kong Country!**

thanks to **Donkey Kong Country**, and, above all, on the Nintendo 64 with titles such as **GoldenEye 007**, **Banjo-Kazooie**, and **Perfect Dark**.

To those who followed only the console market, Ultimate seemed to have disappeared. In reality, its spirit had simply changed names. Tim and Chris Stamper remained at the creative helm of Rare until its acquisition by Microsoft in 2002, bringing with them the same obsession with quality and control over projects that had defined them since the Ashby era.

Legacy and Contemporary Cult Status

Today, Ultimate Play The Game is considered a cult software house in the truest sense of the term. Its ZX Spectrum



The Stamper Brothers

titles—Jetpac, Pssst, Tranz Am, Atic Atac, the Sabreman Series, Knight Lore, and Alien 8—regularly appear in rankings of the best Spectrum games of all time, cited for their innovation, difficulty, and attention to detail.

The retrogaming community continues to explore and pay homage to the company's catalog. The website The King of Grabs maintains a comprehensive list of Ultimate releases, including homebrew conversions and unofficial remakes, a testament to an interest that has never waned. Rare, for its part, has maintained a relatively open stance over the years toward non-commercial amateur projects based on Ultimate's older intellectual property.

In critical discourse, the name "Ultimate" comes up whenever the "golden age" of British game design is discussed. It represents the ideal bridge between the era of 8-bit home computers and the console boom of the 1990s, embodied by Rare's evolution. The software house's contribution goes far beyond individual titles: it demonstrated what can be achieved when pushing a machine to its limits, when developing proprietary engines and original visual languages, and when letting the game speak for itself rather than relying on marketing.

Conclusion

For a magazine dedicated to retrogaming, **Ultimate Play The Game** is a perfect case study. It's the story of two brothers and a small team who, from a small-town office, reinvented home video gaming on the ZX Spectrum, setting technical and creative standards that continue to influence the industry today. It's also the story of a transformation: from an almost mythical brand of the 8-bit era to Rare, one of the most important names in the Nintendo era.

Telling the story of Ultimate means conveying the idea that "small" is not synonymous with "limited." It means recalling an era when innovations emerged quietly—without conferences, social media, or hype campaigns—arriving directly in people's homes in the form of colorful cassettes. And it means recognizing that, without those isometric games and without the Filmation engine, the gaming landscape—from action-adventures to modern open worlds—would likely be a little less rich.





Italian Computer Science Encyclopedias of the 1980s

by Francesco Fiorentini

In the early 1980s, computers gradually ceased to be tools reserved for large companies, universities, and research centers and began to find their way into homes. The spread of personal computers—from brands such as Olivetti, Commodore, Sinclair, Atari, and IBM—combined with the growing belief that computer literacy would be an essential skill for the future, created an enormous need for training and self-education.

In those years, the computer was seen as a revolutionary technology but one that was still little understood. Anyone who bought a home computer had to learn practically everything: from hardware to operating systems, from programming (often in BASIC) to the use of peripherals. Information sources were limited, specialized courses were few and far between, and the Internet simply did not exist as a reference tool for the general public—nor were there spaces where one could easily interact with other enthusiasts. Consequently, books, specialized magazines, and above all, encyclopedias in installments were the primary learning tools.

This rush toward computer literacy, combined with a genuine collective curiosity about new technologies and the Italian publishing industry's ability to quickly tap into the public's new interests, created the ideal conditions for the success of computer encyclopedias. Major publishing houses and publishing groups, including the Jackson Publishing Group, as well as general-interest publishers such as De Agostini, Fabbri, Mondadori, and other key players in the serialized publishing industry, invested in the production of encyclopedic works that combined technical rigor with accessible language.

These publications were often distributed at newsstands on a weekly or biweekly basis, following a publishing model that had already proven successful with encyclopedias dedicated to history, medicine, photography, or the natural sciences. The option to purchase them in installments made these works accessible; had they been sold as a single volume, they would have been financially prohibitive for many families. Furthermore, the publication schedule allowed readers to study gradually, building a specialized library over time and enabling ongoing education.

Computer science encyclopedias were not mere collections

of terms. They were conceived as full-fledged courses: they explained how computers worked, illustrated hardware components, introduced programming languages, described professional and home applications of computer science, and addressed topics that were innovative at the time, such as computer networks, digital graphics, artificial intelligence, and even robotics. Many included examples of source code, circuit diagrams, hands-on exercises, and even software distributed on accompanying cassettes or floppy disks.

Their success was also a reflection of a specific historical moment. The 1980s represented a transitional phase in which computer science was entering everyday life but was not yet a widespread skill. There was therefore a vast audience composed of students, teachers, office workers, professionals, and enthusiasts eager to understand a technology perceived as crucial to their personal and professional futures.

It is precisely this unique combination of factors that makes the phenomenon deeply rooted in the 1980s and unlikely to be replicated today. First, the monopoly on information held by print publishing has been replaced by the virtually unlimited availability of digital resources. Manuals, technical documentation, tutorials, online courses, videos, forums, and collaborative platforms now allow users to access continuously updated information for free, drastically reducing the role of the print encyclopedia as the primary learning tool.

Second, the pace of technological innovation has changed profoundly. In the 1980s, while hardware and software evolved rapidly, a published work could remain relevant for several years. Today, however, programming languages, operating systems, platforms, and digital tools evolve so quickly that a printed encyclopedia would risk being partially obsolete even at the time of publication.

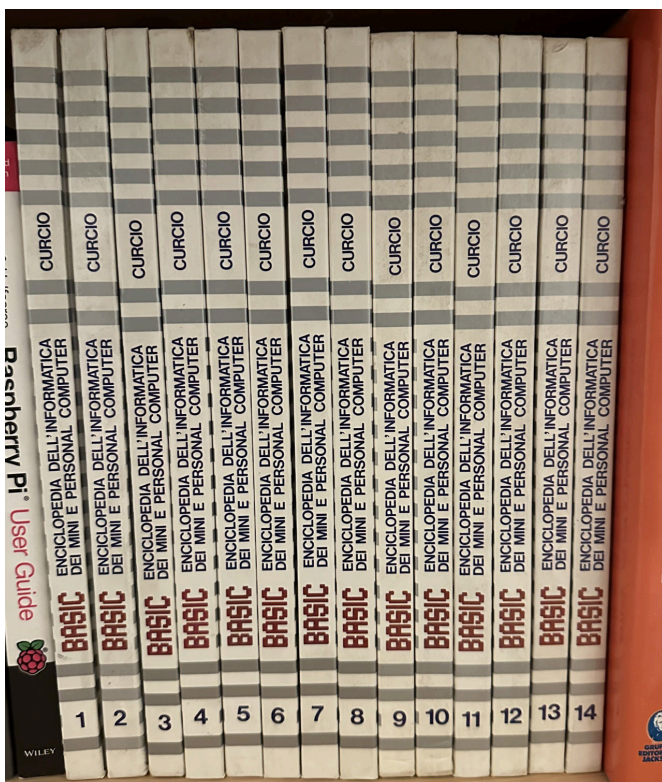
The audience has also changed. In the 1980s, computer science was a completely new field, and the goal was to provide basic literacy to a population starting almost from scratch. Today, fundamental digital skills are acquired from childhood onward, and learning tends to be much more specialized and tailored to specific needs, rather than focused on general encyclopedic knowledge.





Finally, the publishing model itself has changed. Large serialized works were one of the pillars of popular publishing in the post-World War II era and reached millions of readers through the network of newsstands. The gradual decline of this distribution channel, combined with the digitization of information and changing cultural consumption habits, has made a publishing format that required high investment and long production times increasingly unsustainable.

The computer science encyclopedias of the 1980s thus represent not only a significant chapter in the history of Italian publishing but also a testament to a unique moment in which a new technology, a strong collective desire for knowledge, and an established publishing model converged to create a cultural product that made a decisive contribution to the spread of computer science culture in our country. Personally, I am captivated by these encyclopedic works, often produced with academic rigor and of undoubted educational value (both for their time and today). As of now, the information contained in these works is still accurate—though likely not suited to today's hardware, software, and programming languages—yet they retain their value intact for anyone interested in studying and delving deeper into the use of computers from the 1980s. It's true that the same information can be easily found through simple Google searches or by chatting with the most popular AI chatbots, but can anything compare to the thrill of owning a piece of Italian "digital" history that,



BASIC by Armando Curcio Editore (a 14-volume work)



"Corso pratico di utilizzo del software" - Jackson

as we discussed above, will certainly never be replicated? As a dedicated collector of books on retrocomputing, encyclopedias were a must-have for my ever-expanding collection. Currently, I believe I own almost all the computer science encyclopedias (and even some on electronics) published in Italy in the 1980s (and not only that—I also own some Spanish and French ones...).

Let's take a look together at the ones that are part of my collection.

Corso pratico di utilizzo del SOFTWARE

Gruppo Editoriale Jackson – Divisione Grandi Opere

Number of volumes: 5

Software is a comprehensive work on the world of personal computer programming. Divided into three thematic areas—OPERATING SYSTEMS, PROGRAMMING LANGUAGES, and APPLICATION SOFTWARE—it offers an overview of the computing world of that era.

The BASIC language naturally takes center stage, with two entire volumes dedicated to it—BASIC I and BASIC II—but the volume on programming languages also covers LOGO, PASCAL, FORTH, C, and, to a lesser extent, ADA, COBOL, and PROLOG.

The operating systems covered in the book are: CP/M, MP/M, Atari DOS III, MS/DOS, Apple DOS 3.3, Apple PRO DOS, OASIS, T.O.S. UNIX, Apple Macintosh, OS-9, and UCSD p-SYSTEM. There is also a chapter dedicated to the



**BASIC by Armando Curcio Editore (8-volume version)**

CBM 1541's operating system.

The applications covered are as follows: Wordstar, Visicalc, PFS File-Report, Microsoft Chart, Multimate, Multiplan, dBASE II, Easy Writer, Symphony, AutoCAD, JAZZ, SuperCalc, Open Access, and OMNIS.

This is undoubtedly a comprehensive work, written in the Jackson Publishing Group's signature accessible style. A must-have for any retrocomputing enthusiast.

BASIC - Enciclopedia dell'informatica dei mini e personal computer

Armando Curcio Editore

Number of volumes: 14

Total pages: 1,728

Once the exclusive domain of a few specialists and major research centers, the computer is becoming a tool destined to enter everyone's daily life, finding applications in a wide variety of sectors, from work to telecommunications, from medicine to education. The authors foresee an increasingly widespread adoption of personal computers and home computers, which are set to revolutionize the way we work, study, and access information. In this context, they emphasize the importance of acquiring a basic understanding of computer science and learning the language of computers in order to use them effectively. This need gave rise to *BASIC: Encyclopedia of Mini- and

Personal Computer Science*, conceived as an educational journey that progressively guides the reader from an understanding of the fundamental principles of computing to programming, providing the tools necessary to comprehend and utilize new technologies.

The work is very well presented, rich in fundamental concepts for self-learning, illustrations that clarify the most challenging concepts (flowcharts, truth tables, logical connections, assembly instructions...), and code examples ready to be executed on actual hardware.

BASIC - Enciclopedia dell'informatica dei mini e personal computer

Armando Curcio Editore

Number of volumes: 6

Total pages: 1,728

Virtually identical to the 14-volume edition, it differed in that its binding was more similar in size to a typical encyclopedia of the time.

BASIC - Enciclopedia dell'informatica dei mini e personal computer

Armando Curcio Editore

Number of volumes: 8

Total pages: 1,728 + 575

It added two new volumes to the 6-volume edition. The content of the first 6 books obviously remained the same, but the two additional volumes sought to fill the gap in application software by covering 3 identified areas of fundamental interest to readers at the time: Programs for the Family (with 6 programs), Programs for Study (containing 5 programs), and Programs for the Workplace (4 programs).

Let's take a closer look:

Programs for the Family

- Financial Calculations
- Checking Account Management
- Family Budget
- The Household Database
- Recipe Book
- The Home Doctor

Study Programs

- Spelling
- Arithmetic
- Geography
- Texts: Logic and Associative Laws
- The Computer from the Computer
- Professional Programs





- The Electronic Scoreboard
- The Database
- Computer Graphics
- Word Processing

INPUT – Corso pratico di programmazione per lavorare e divertirsi col computer

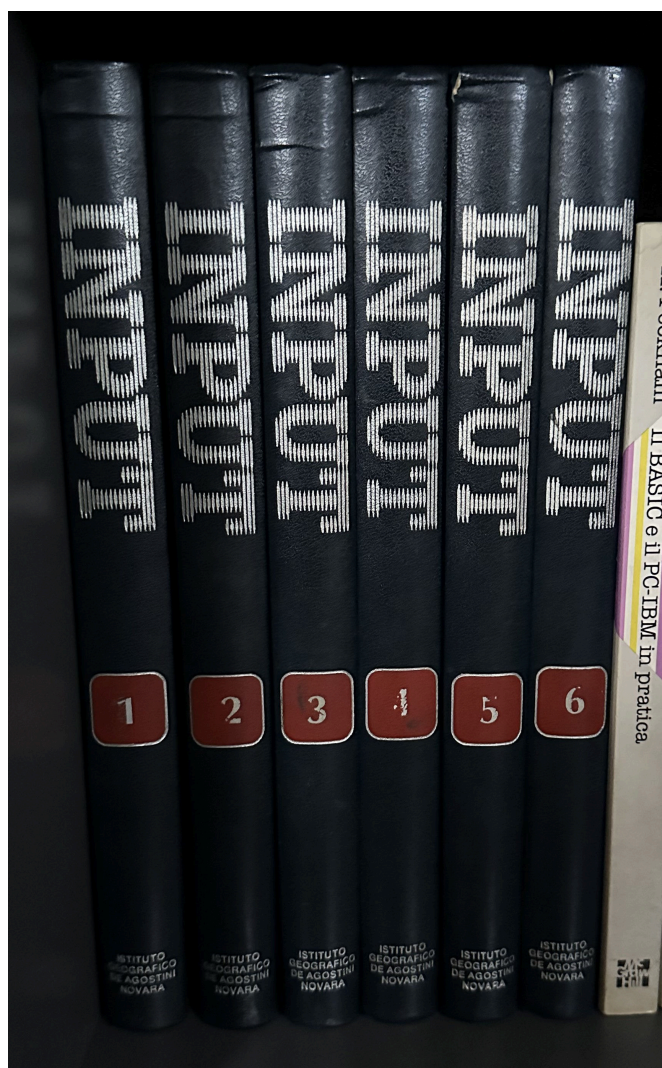
Istituto Geografico De Agostini

Number of volumes: 6

Total pages: 1,664

I'm particularly fond of this encyclopedia because a dear friend of mine owned it—we used to spend afternoons together playing games and programming on the Commodore 64. I remember how we'd gaze in fascination at its pages and how we tried to create a top-down soccer game with little success (unfortunately, neither of us was Dino Dini).

Unlike many other encyclopedias, this one gets straight to the point, immersing the reader from the very first pages in the fascinating world of programming and inviting them, right from the first paragraph, to test the code on



INPUT - De Agostini

their own computer.

While tackling complex topics and offering high-quality content, it does so in a pleasant and engaging style, enriched by images that spark curiosity and encourage the reader to experiment firsthand with what is presented. The topics covered range from programming games and applications in BASIC and Assembly to brief touches on other languages such as Pascal, Forth, LOGO, Lisp, and even COBOL.

The programs published in INPUT are designed for easy use with the following computers: the Sinclair SPECTRUM (16K and 48K versions), the COMMODORE 64, the ACORN ELECTRON and BBC, and the DRAGON 32.

However, many of the programs and texts are also suitable for: the Sinclair ZX81, the Commodore VIC 20, and the Tandy Color Computer with 32K and Extended BASIC.

Il Mio Computer – Corso pratico di informatica: micro, mini e personal computer

Istituto Geografico De Agostini

Number of volumes: 8

Total pages: 1,920

This is an adaptation and translation of the English work "The Home Computer Course," published by Orbis Publishing Ltd. in 1983.

Published by the De Agostini Geographical Institute, the book aimed to guide readers through the world of computing



Il mio computer - De Agostini





with a simple, step-by-step, and highly practical approach. Each issue covered a new topic, alternating between theoretical explanations, photographs, diagrams, and numerous code examples to be typed directly into the reader's computer.

The pages are rich with illustrations, diagrams, and photographs of the computers that defined the 1980s: from the Commodore 64 to the ZX Spectrum, including the Apple II and the IBM PC. Today, these images hold undeniable historical value and chronicle a period when every new machine represented a small technological revolution.

The computer overviews are particularly interesting. It feels as though you're revisiting the hands-on reviews conducted by the most authoritative industry magazines of the time, yet without offering a judgment on the hardware. This unique approach significantly enhances the value of this work, helping to keep it relevant in some ways even today.

BYTES – Concetti e linguaggi della programmazione - Corso avanzato di cultura informatica

Gruppo Editoriale Jackson

Number of volumes: 6

Total pages: approximately 1,600

BYTES was designed for readers who had already mastered the basics and wished to delve deeper into the more theoretical and professional aspects of computer science. While many of the encyclopedias we have already examined focused primarily on BASIC and the use of home computers, BYTES went further. Readers were introduced to the main programming languages used in scientific, managerial, and industrial contexts, including: FORTRAN, COBOL, C, Pascal, Assembly, Ada, and APL.

For once, the goal was not merely to teach the syntax of these languages, but to understand their philosophy, fields of application, and design differences.

From an editorial standpoint, BYTES stood out for its more rigorous approach compared to popular series aimed at beginners. The explanations were accompanied by diagrams, tables, logic diagrams, and code examples, but the language used was more technical and less geared toward immediate experimentation. By the late 1980s, the personal computer was no longer just a tool for learning BASIC or playing games, but was becoming a work platform. Consequently, the demand for more advanced skills—related to software design, professional programming languages, and business applications—was



Bytes - Gruppo Editoriale Jackson

growing.

EI – Enciclopedia di elettronica & informatica

Gruppo Editoriale Jackson

Number of volumes: 6

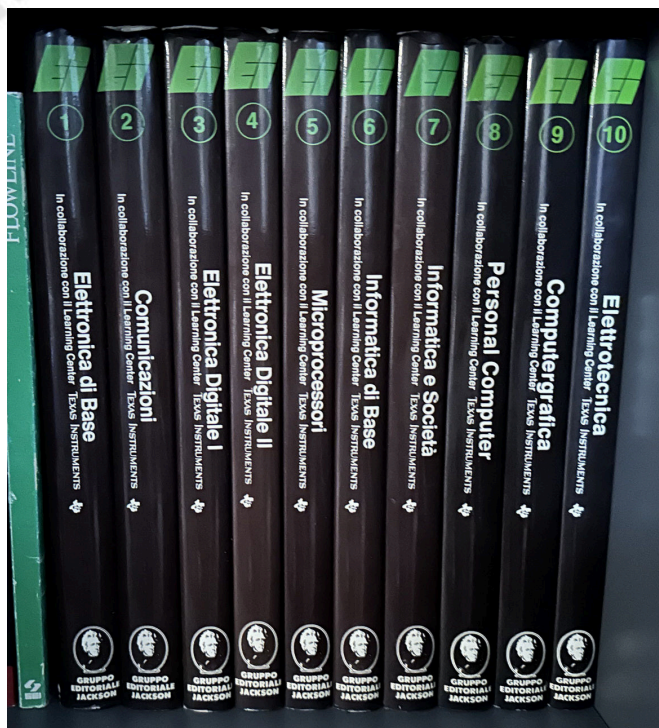
Total pages: approximately 1,600

Comprising 9 volumes logically organized by topic—unlike other series of the time that focused exclusively on personal computers or programming—EI offered a broader view of technology, demonstrating how hardware and software were two sides of the same coin.

The 9 volumes of the work cover a wide range of topics:

- analog and digital electronics
- logic gates and Boolean algebra
- microprocessors and microcontrollers
- computer architecture
- programming languages
- operating systems
- electronic instrumentation
- telecommunications
- automation and control.





EI - Enciclopedia di Elettronica & Informatica

The breadth of the topics covered made the series a true technological encyclopedia, capable of guiding the reader from circuit theory to the most advanced computer applications of the time. Aimed at enthusiasts as well as students and novice technicians, with the goal of providing a solid foundational understanding of two disciplines that, precisely during those years, were converging at an ever-increasing pace, it enabled readers to understand not only how to use a computer but, above all, why it functioned in a certain way.

While maintaining a certain technical rigor, EI did not sacrifice a popular science approach, with explanations

supported by photographs, exploded views, block diagrams, electrical schematics, and illustrations that facilitated understanding even of the most complex topics.

Enciclopedia di Informatica – Fondamenti, metodi, applicazioni

ETAS Libri

Number of volumes: 14 + 4

With a decidedly more academic approach, this work by ETAS Libri was aimed at an audience of college students, professionals, and technicians interested in understanding the theoretical and methodological principles of computer science.

Upon opening its volumes, it immediately becomes clear that the work's intent is not to encourage the reader to experiment quickly, but rather to prioritize reasoning and develop a solid foundation in computer science, rather than limiting oneself to learning a specific language or system.

Unlike other encyclopedias, which are full of colorful images designed to immediately grab the reader's attention, here the concepts are described in a didactic, almost pedantic manner, making the work unsuitable for the casual reader but well-suited to its target audience. There is no room for entertainment.

The final volume, dedicated to computer graphics, reads like an academic treatise on vector mathematics—difficult to grasp without a solid prior foundation.

Capire il computer



Enciclopedia di Informatica – Fondamenti, metodi, applicazioni - ETAS Libri





EGI – Enciclopedia generale di informatica – Informatica di base - Gruppo Editoriale Jackson

CDE – Gruppo Mondadori

Number of volumes: 21

The approach of the *Understanding Computers* series is decidedly different.

The volumes were organized as independent monographs, each dedicated to a particular aspect of the world of computing. Topics covered included how computers work, microelectronics, networks, robotics, industrial applications, software, video games, telecommunications, and the uses of computers in various sectors of society. Some titles were dedicated to specific themes such as “Computers and Transportation” or “Speed and Power,” reflecting the series’ strong focus on practical applications.

From a publishing standpoint, *Capire il computer* stood out for its graphic design. The volumes featured an elegant layout, with hardcovers, large photographs, and numerous color images, designed to make even the most complex concepts engaging. The goal was to transform computer science—often perceived as a technical and difficult subject—into a topic accessible to everyone.

The overall appearance of the work resembles that of a catalog rather than a popular encyclopedia. It was a truly unique item among the array of computer science encyclopedias of the 1980s.

EGI – Enciclopedia generale di informatica – Informatica di base

Gruppo Editoriale Jackson

Number of volumes: 15

Another encyclopedia dedicated to beginners in computer science. Within the Jackson Publishing Group’s catalog, EGI thus served as a gateway to computer science culture: less specialized than BYTES, less focused on electronics than EI – Encyclopedia of Electronics & Computer Science, but perfectly in line with the educational mission of those years, when the computer was transitioning from a mysterious object for specialists to a tool accessible to everyone.

Ample space was devoted to the concepts of data, information, archives, and procedures—essential elements for understanding the role of the computer in business processes and daily life.

It is interesting to note that the work was accompanied by no fewer than four volumes dedicated to an English-Italian dictionary and one from Italian to English. The aim was clearly to introduce the average Italian—who, at the time, had no knowledge of any language other than their own—to a new world governed by the English language.

Enciclopedia pratica del computer





Enciclopedia pratica del computer - Longanesi

Longanesi & C. Periodici

Number of volumes: 4

The title itself highlighted the series' philosophy: not merely a collection of definitions, but a practical guide to learning how to use a computer. Ample space was therefore devoted to practical applications, such as document management, data processing, word processing, spreadsheets, file management, and the earliest forms of digital communication.

Naturally, more technical topics were also covered, such as the internal structure of the computer, processors, memory, peripherals, and the principles of programming. However, compared to the more specialized works published during the same period, the approach remained more oriented toward the end user, with the goal of bridging the gap between the reader and a technology still perceived as complex.

Probably less effective than the works already presented, but certainly of historical interest precisely because it is not very common.

Il grande dizionario Jackson di Elettronica e Informatica

Gruppo Editoriale Jackson

Number of volumes: 10 + 2

Developed in collaboration with Philips, the Great Jackson

Dictionary of Electronics and Computer Science was designed as a reference guide to help readers navigate the technical terms, components, technologies, and concepts of a rapidly evolving field.

Unlike encyclopedias, which guided readers through a gradual learning process, the dictionary was organized alphabetically and structured more like a reference manual. Its goal was to provide quick and precise explanations of key topics related to electronics, computer science, and telecommunications, serving as a valuable resource for students, technicians, enthusiasts, and professionals.

The entries covered topics ranging from the fundamental concepts of electronics—such as passive components, semiconductors, and integrated circuits—to topics more closely related to computer science: microprocessors, memory, programming languages, operating systems, computer architecture, peripherals, and software applications.

Two monographs complemented the work.

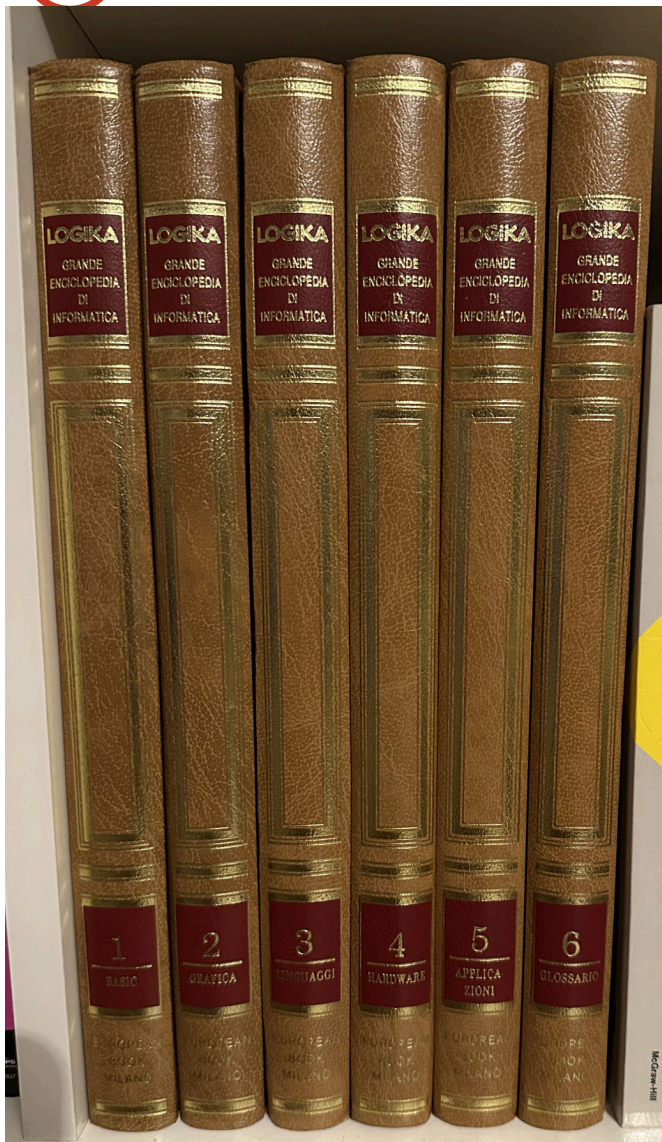
The first was dedicated to electronics, with the aim of providing readers with the theoretical foundations needed to understand how the devices and systems described in the dictionary function. It addressed topics such as electronic components, semiconductors, analog and digital circuits, microprocessors, and the principles underlying hardware design. The work thus enabled readers to understand the technology that made the operation of modern computer systems possible.

The second monograph, on the other hand, focused more on computer science, delving into the structure and operation of computers. Topics included computer architecture, data representation, memory, operating systems, programming languages, and major software



Il grande dizionario Jackson di Elettronica e Informatica - Gruppo Editoriale Jackson





LOGIKA – Grande enciclopedia di Informatica

applications.

LOGIKA – Grande enciclopedia di Informatica

European Group Milano

Number of volumes: 6

Published in 1991, this work serves as the natural continuation of the work developed in the previous volumes. In this case, the publisher sought to create a product capable of appealing to a broader audience, including both beginners and more experienced users.

The topics covered span the entire field of computer science: programming languages, graphics, hardware, applications, and much more. While striving to maintain an independent approach with respect to different hardware platforms, the growing influence of the IBM PC is already clearly evident, with examples of applications and code snippets closely tied to this system.

The world of computer science was changing rapidly compared to the 1980s, and this work serves as a testament

to this transitional phase. The spread of professional personal computers, IBM-compatible standards, and new models of software use were profoundly altering the technological landscape.

This is likely one of the last major computer encyclopedias published before the evolution of the sector and the subsequent spread of new digital tools permanently changed the way people learn and access information.

Corso pratico col computer

Fabbri editore

Number of volumes: I believe 6 but I own only 2

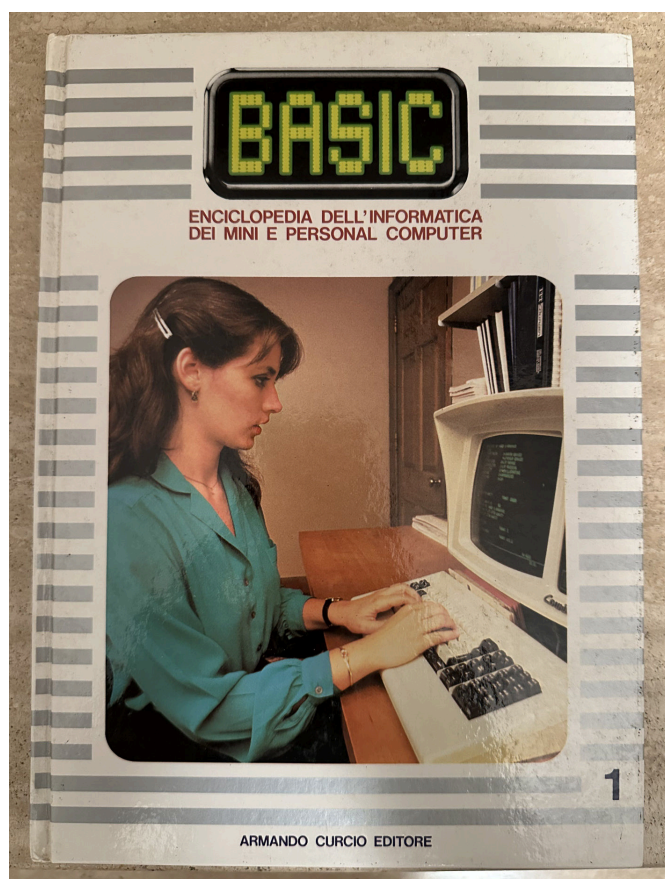
As with other traditional computer encyclopedias, this work emphasized a didactic and practical approach, guiding the reader through a gradual learning process of the technologies of the time. The various sections were developed with the contribution of specialized companies and examined the leading home computers of the period, such as the Commodore 64, ZX Spectrum, MSX, Apple II, and IBM PC. Because of these characteristics, **Practical Computer Course** serves as a testament to the popularization of computing in Italy during the 1980s and to the transition of computing from the professional to the home environment.

In these pages, I believe I have covered, if not all, then at least the vast majority of the computer encyclopedias published in Italy during the 1980s. If you are aware of any other works, please let me know. I'd be happy to expand my collection and add information to what's included in this article. I may publish future articles dedicated to some of these encyclopedias to explore their contents in greater depth and showcase some of their most representative pages. Stay tuned!

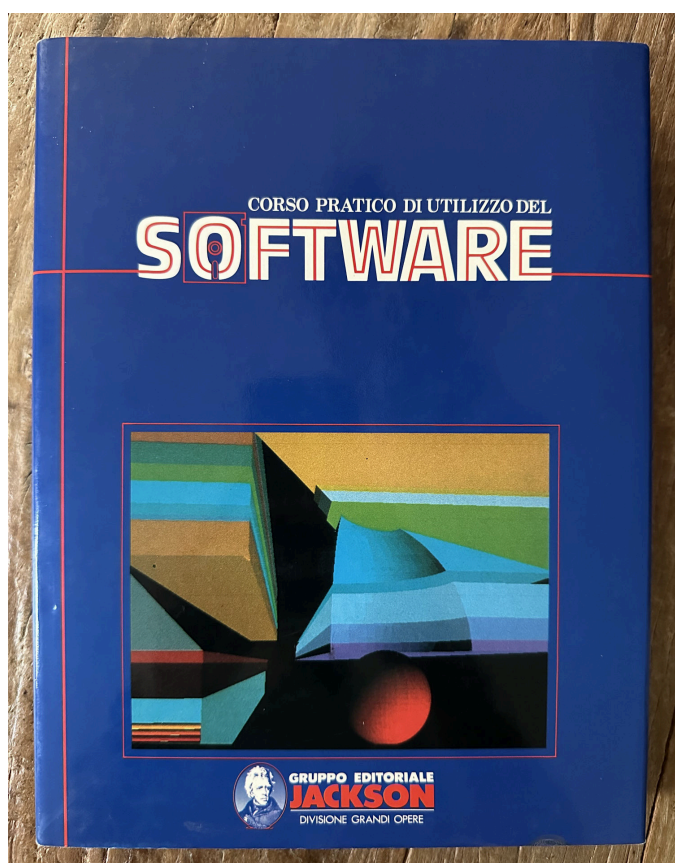




BASIC Advanced – The two supplementary volumes of the BASIC encyclopedia published by Armando Curcio Editore



BASIC - The first volume of the 14-volume edition of the Encyclopedia



A volume of Jackson's Practical Guide to Software Use Encyclopedia





The Story of a Legend: Atari

by Takahiro Yoshioka, translated by Carlo Nithaiah Del Mar Pirazzini

The history of Atari between 1972 and 1996 reads like a true industrial novel: a meteoric rise to success, a devastating collapse, and a long period of attempts at reinvention. In between lies the very birth of the video game industry as we know it today

It all began in June 1972, when Nolan Bushnell and Ted Dabney founded Atari, Inc. in Sunnyvale, California, with the idea of turning the early experiments in electronic video games into a full-fledged business. Five months later, Pong arrived: an arcade cabinet with two joysticks and a square ball that bounced across a green phosphor screen. Pong wasn't the first video game ever created, but it was the first to clearly demonstrate that there was a market for these machines. Arcades filled up, revenue skyrocketed, and Pong became the symbol of this new form of electronic entertainment—so much so that Atari's products from the 1970s are often cited as the ones that “defined the electronic entertainment industry.”

Pong became unstoppable!

In its early years, Atari rode a roller-coaster ride. On the one hand, the company innovated rapidly in the arcade world; following Pong came titles like Breakout, Asteroids,

and Missile Command, which refined the formula for on-screen action and introduced mechanics, aesthetics, and pacing that would become industry standards. On the other hand, Bushnell realized that video games could not remain confined to arcades: in 1975, thanks to a deal with Sears, he brought Pong into the home in the form of a dedicated console. This was the first time the home television became an interactive device, and this insight paved the way for the true revolution: the launch of the Atari Video Computer System in 1977, soon known to the general public as the Atari 2600.

The Atari VCS/2600

The VCS/2600 was the turning point that transformed video games from a niche curiosity into a mass-market pastime. Atari introduced microprocessor-based hardware with interchangeable ROM cartridges, allowing families to buy a single console and play many different games. Titles like Space Invaders, Asteroids, and Pac-Man for the 2600 became household phenomena; children and adults alike played in their living rooms, and within a few years—by the early 1980s—the 2600 dominated the North American market. The ability to “bring the arcade



Atari, its founders, and Pong... the success is evident in this photo





Pong becomes unstoppable!

home” sent the industry into overdrive: other companies followed suit, revenue soared, and video games officially became part of the cultural fabric, with Atari as the leading brand.

The Arrival of Warner Communications: From the Peak to the Atari Shock

On the corporate front, however, Atari underwent profound changes. In 1976, Bushnell sold Atari to Warner Communications for approximately \$28 million, remaining at the creative helm for a time but placing the company within the framework of a much larger media conglomerate. Under Warner, Atari split into two distinct divisions: the arcade division, which continued to churn out successful arcade cabinets, and the home division, which oversaw the 2600 and, later, the home computer lines. Atari also experimented in the personal computer sector: 8-bit systems such as the Atari 400 and 800 were introduced, followed in the second half of the 1980s by the Atari ST, which would play an important role in graphics, music, and the European market.

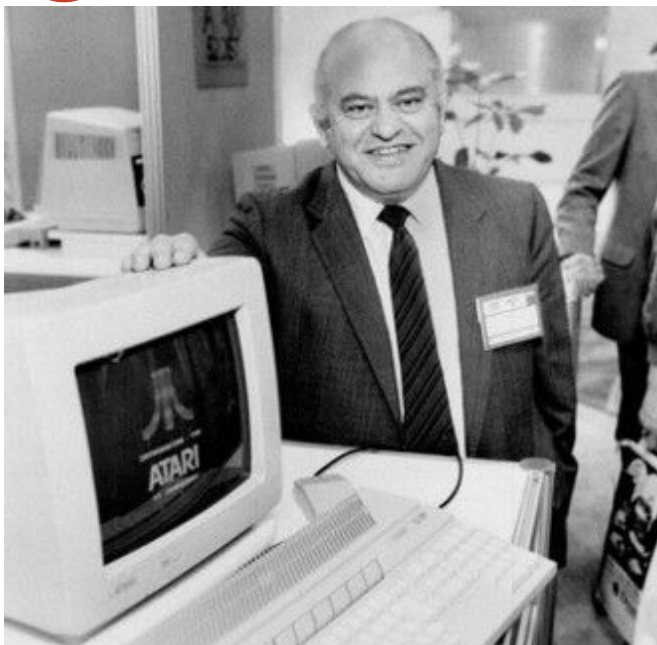
The period between 1979 and 1982 was one of both peak success and fragility. On the one hand, Atari was the fastest-growing company in the United States, a symbol of the “video game boom economy”; on the other

hand, the market was flooded with hardware and video games of varying quality. The Atari 2600 was so dominant that it prompted many manufacturers to flood the platform with mediocre or poorly crafted titles, saturating the shelves with similar or poorly finished games. Atari’s and other companies’ ability to accurately gauge demand began to falter: more consoles and cartridges were produced than the public was willing to buy. Added to



The Atari VCS/2600





Jack Tramiel and the Atari ST... his Jackintosh!

this were poor decisions such as the infamous E.T. for the 2600, developed in a very short time and considered one of the symbols of the poor quality that drove consumers away.

E.T. wasn't to blame, but it found itself caught up in a whirlwind of catastrophic events

In 1983, the "video game crash" erupted—so devastating that in Japan it came to be known as the "Atari shock." Industry revenues in the United States plummeted in two years from approximately \$3.2 billion to just over \$100 million, a collapse of such magnitude that it brought manufacturers and distributors to their knees. Atari, which had marked the rise of the home video game, also became the symbol of the crisis: warehouses full of unsold inventory, public confidence undermined, and competition from personal computers—such as the Commodore 64—that offered flexibility and power at competitive prices. Warner, unable to weather the storm, decided to split up the company in 1984: the console and computer division was sold to Jack Tramiel (formerly of Commodore) and transformed into Atari Corporation, while the arcade division remained separate as Atari Games.

The Rebirth

Under the new structure, Atari Corporation sought to reinvent itself by focusing primarily on computers. In the second half of the 1980s, the Atari ST became a popular platform in Europe for graphics, music, and games, rivaling Commodore's Amiga. On the console front, the Lynx—the color handheld console of the 1990s—was released, followed in 1993 by the Jaguar, billed as the first "64-bit"

console. These products reflect Atari's attempt to remain at the forefront of hardware innovation, but the landscape had changed: the market was now dominated by Nintendo and Sega, with Sony soon to join the fray. The Lynx and Jaguar remained cult classics rather than mass-market successes and failed to reverse the company's commercial decline. Meanwhile, Atari Games, the former arcade division, continued on its own path, passing from Warner to Namco and, finally, to other owners, and producing arcade cabinets through the 1990s, though it no longer played the central role it had in the 1970s and early 1980s. In 1996, the "classic" narrative of Atari hardware effectively came to a close with the Jaguar and the end of the company's strong presence in the console sector. From then on, the Atari name would enter new phases, marked by acquisitions, changes in ownership, and rebranding, culminating in the arrival of Infogrames and the transformation into Atari SA in the early 2000s.

The Long and Winding Road

Looking at its impact on the industry between 1972 and 1996, Atari played a dual role: creator and "destroyer" of cycles. Pong and the Atari 2600 helped define the very concept of the commercial video game, both in arcades and in the home. They introduced key concepts such as the electronic arcade model, the console with interchangeable cartridges, game design based on scores and lives, and the use of the television as a mass-market interactive screen. They also helped shape a visual and auditory culture, with the Atari logo, minimalist graphics, and futuristic aesthetics that influenced fashion, film, and music. At the same time, Atari's business decisions during its years of reckless expansion directly contributed to the 1983 crash, which forced the entire industry to rethink



The Atari Jaguar, Atari's last console





E.T. wasn't to blame, but found itself caught up in a whirlwind of catastrophic events

its business models. The warehouses full of unsold hardware and rushed games led to the realization that quality controls, more careful release strategies, and better-managed relationships between hardware manufacturers and software developers were needed. The subsequent arrival of Nintendo's NES in 1985, with its licensing system and quality seals, was a direct response to the lessons learned from the "Atari shock."

In the following decade, Atari continued to influence the industry in more indirect ways: the Atari ST had a significant impact on music production and the demoscene; the Lynx foreshadowed some features of later color handheld consoles; the Jaguar, though not a commercial success, became an example of an ambitious yet poorly supported machine, which analysts still cite today when discussing

the risks associated with launching hardware that is poorly aligned with market needs.

Between 1972 and 1996, therefore, Atari helped lay the foundations of the video game industry, demonstrated the limits of unregulated growth, and offered subsequent players—from Nintendo to Sega to Sony—a model to emulate and, at the same time, to avoid. It's hard to imagine the history of the medium without this constant ebb and flow: from the first ball bouncing in Pong to the logo emblazoned on cartridges and computers, all the way to the latest, ambitious but ill-fated consoles like the Lynx and Jaguar. At every stage, Atari raised the bar, even when market results fell short of expectations, leaving a legacy that continues to resonate in contemporary gaming culture.



Japan, part 29: Gachagachagachagachagacha...pon!

by Michele Ugolini

Dear readers, time flies, but in Japan, the Gachapon craze seems far from fading. In recent months—especially since April—many new, incredibly funny items have been released, brimming with ingenuity and charm. Sometimes it seems absolutely incredible how these ideas could have even sprung from the minds of their creators! Lately, the trend has focused heavily on three categories: hyper-realistic, working miniatures; highly successful anime collaborations; and the bizarre/ironic gachapon typical of Japanese pop culture.

Let's start with the hyper-realistic, working miniatures.

Get your magnifying glasses ready because the JR Timetable Mame Gasha Hon are an insanely brilliant idea. Just released in June 2026, as you can see in the image below, they're tiny booklets containing microscopic train schedules replicated down to the millimeter—enough to make any railway otaku's heart race. Imagine flipping through the historic turn-of-the-millennium edition, contained in just five centimeters of paper but with over a hundred pages printed beautifully and completely legible. It's a crazy and wonderful

collectible that lets you carry all the train connections of the Land of the Rising Sun in your pocket and travel back in time without taking up space in your backpack. In any case, watch out for finger cramps.

I only recently learned about them, but at the beginning of the year, high-tech cat waiters were also released: the BellaBots. These tiny cat-shaped robot waiters faithfully replicate the famous automatons that bring you food in Asian restaurants. The real genius lies in the internal spring mechanism, which makes them actually walk among keyboards and coffee cups, simulating real-life deliveries. A super fun and highly detailed gadget, perfect for transforming your study area into a tiny smart home, without the risk of the robotic kitten asking you for a tip in the form of cat treats.

Another very cute idea—though, in my opinion, not particularly original—is the miniature Nikon Camera Series: these are tiny optical masterpieces ready to take over your desk. These tiny Gachapon figures are incredibly faithful replicas of the legendary Japanese cameras, complete with camera bodies crafted with meticulous attention to detail, accompanied by



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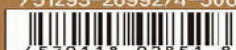
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delightful interchangeable lenses that actually detach. Lightweight yet high-performance—though for real photos, you'll still need to use your cell phone or a real DSLR.

Let's switch things up. Fans of the occult and wild racing, get ready—the Dandadan characters have unleashed the mighty Turbo Nonna. Have you been following her? Riding the wave of the anime's global success, this collection of large soft vinyl figures pays homage to the series' most iconic and foul-mouthed spirit, complete with fun details. You can place this bizarre figure on your shelf to scare your friends or simply to celebrate an animated hit. A must-have collectible that brings a touch of alien and paranormal madness right into your room. Of course, not all anime, gaming, and major brand products that feed the ravenous Japanese market—full of otaku collectors—make it to Europe and Italy. For example, not everyone is familiar with the Chiikawa “Oyasumi” Plushes, released in May 2026. These are super-soft mini plush toys of the hugely popular Chiikawa characters—Hachiware and Usagi—in their sleeping versions, which sold out immediately in Japan. Other brands, on the other hand, have enjoyed global success, such as Tamagotchi. Take the Tamagotchi Blister Packages (released in May/June 2026), for instance: they're sold as keychains that replicate vintage Tamagotchis inside their iconic original miniature packaging.

So far, we've talked about fairly straightforward items; now let's move on to Japanese quirks. These are the ones I love the most, as they showcase the highest degree of morbid inventiveness—as well as obsession—from the darkest recesses of the Japanese psyche.

Let's talk about the brilliant Mosaic Dogs.

Get ready to laugh until you cry as you watch these little dog figurines—puppies, no less—strolling carefree, but with one surreal detail. Their rear ends are completely censored by a small square of plastic pixels that mimics classic Japanese TV censorship. This permanent pixelated effect transforms an ordinary dog walk into an X-rated comedy scene, perfect for bringing a smile to anyone who glances at your desk. An ironic and ingenious gadget that perfectly embodies the bizarre and irresistible spirit of collectibles from the Land of the Rising Sun. These were also released around March, but unfortunately I only learned about them recently—just like the Itchy Dog Scratching Series.

Get ready to itch with amusement, because the Itchy Dog Scratching Series captures the most liberating moment of a dog's life in miniature form. These hilarious figurines depict dogs of various breeds caught in the exact moment they're giving themselves a mighty scratch behind the ear, complete with comically tilted heads and a spectacular expression of pure, heavenly relief on their faces. Each pup exudes such contagious and funny joy that you'll want to help them out by placing them on your desk, adding a touch of lightheartedness and domestic humor to your collection. You can feast your eyes on the image below.

But enough about cute things for now.

Why don't we talk about something crazy and horror-themed?

If you love nighttime chills and refrigerated display cases, then the Night Shift Incident signs are the perfect horror Gachapon to light up your desk-side nightmares. They were released around the same time as the Mosaic Dogs. These mini, fully functional light signs are inspired by famous Japanese indie





video games set in gloomy nighttime convenience stores, where horror lurks behind the soda machines. All it takes is a click to turn on that sinister fluorescent light and instantly recreate the atmosphere of pure anxiety typical of those solitary digital adventures. A terrifyingly brilliant gadget to give your room a spooky, cyberpunk twist—just hope no monsters show up to do their shopping.

Should we also talk about a Takara Tomy product that was a huge hit around April? Would an anthropomorphic Gashapon machine suffice?

The Takara Tomy Arts Gacha Machine Mascot is the ultimate Gachapon, one that laughs at its own struggles. This brilliant figurine depicts a fully anthropomorphic capsule machine, complete with hilarious human legs, but captured in a weary posture, with its back hunched over. It really seems as though the burden of dispensing gadgets all day has worn it out, transforming it into the perfect portrait of an exhausted employee at the end of their shift.

A piece of pure Japanese cyberpunk humor, perfect for placing next to your computer to remind you that you're not the only one eagerly awaiting the weekend or a well-deserved coffee break after working way too hard.

Speaking of anthropomorphic objects, "Animal Camp Part 02" (early 2026) was also released a few months ago. These are anthropomorphized wild animals in a camping style, equipped with mini folding camping chairs, cups, and modular barbecue accessories.

Still on the topic of our beloved vending machines, a new series has also been released featuring the famous Japanese lunch/dinner boxes: bento boxes! Get your tweezers ready and make room for a microscopic appetite, because the Mini Bento Box

Display turns a Japanese lunch into the tiniest culinary challenge ever. These delightful Gachapon figures feature bento boxes complete with removable lids and a cascade of ingredients invisible to the naked eye, such as rice, crispy tempura, and colorful vegetables. The fun part is being able to rearrange everything as you please, using real surgical tweezers to create your perfect culinary composition—without the risk of making a mess in the kitchen. A quirky and mouthwatering Zen pastime that will put your coordination to the test, rewarding you with a tiny masterpiece to proudly display.

Finally, let's talk about other containers: the ones for empty ice cream cups that we've emptied of their contents. I'm not sure if I've mentioned them before or included a picture, so I'm doing it now—I've added an image below. For example, this box was available at Narita. So, dear collectors, if you decide to leave the plastic scoop at the store or vending machine, know that there's a specific bin for the hard plastic wrapper.

Become champions of miniature ecology, because the Recycling Box is also designed with meticulous attention to detail. A strangely therapeutic and super-geeky gadget that embodies the Japanese obsession with order and recycling—ideal for adding a civic touch to your experience in the small yet vast world of miniaturization.

What can I say, folks? In the next article, there might be an item that the Japanese haven't come up with yet? Only time will tell—we'll catch up at the next Gacha. Bye!





Petal Panic! The Preview

by Chiara "Kika" Carrara

Team Piggy 18 strikes again (and goes on a furious rampage)!

Whenever the name Piggy 18 comes up, the Commodore 64 retro-programming scene always pricks up its ears. Known for their unconventional approach and their ability to squeeze every last bit out of the C64's video and sound chips as if we were still in 1987, the team is back in action with the Petal Panic demo.

And yes, we've finally gotten our hands on the joystick to test out the life of this decidedly over-the-top farmer.

You immediately find yourself in the shoes of a handsome, mustachioed farmer, wearing red overalls and wielding

a giant pitchfork ready for action...

Your task is to conquer the various platforms in record time by making as many flowers bloom as possible; it's a true race against the clock where you'll have to dodge the garden's deadly guardians: slimy giant snails and lightning-fast pixel-art lizards ready to take you down! In short, this is yet another demonstration of how a simple concept remains consistently effective: a fixed-screen platformer that's intuitive and incredibly fun—and totally addictive.

Special kudos go to Team Piggy 18, a true mainstay of the Commodore 64 homebrew scene. With this WIP build of Petal Panic, the developers demonstrate how passion





and digital craftsmanship can push the C64's hardware to its limits, delivering modern, responsive gameplay wrapped in a beautifully retro package.

While the modern industry often focuses solely on gigabytes, Team Piggy 18 reminds us of what truly makes a video game timeless: pure fun. Full steam ahead with development—the final version promises to be an unmissable gem!

KIKA's Take!!!

Guys, even though this is just a demo and not the full package, let me unbutton my overalls to say one thing: swinging that pitchfork left and right is an absolute blast!

It's all about perfect timing. That hunk of metal will serve as both a space shield to send the snails' bullets right back at them and a weapon to skewered lizards on the counterattack. In short, you'll learn how to play in three seconds flat, but if you don't have the reflexes of a cat on caffeine... well, you're dead!

Conclusions

Okay, it's just a demo and the levels are limited, but this game is a legal drug! With the timer breathing down your neck and the High Score challenging you, the "I'll just play one more game and then quit" syndrome hits immediately. Getting wiped out at the very last second by a snail's spit will just make you mad at yourself, driving you to hammer the fire button like a maniac for another run. If the early bird catches the worm, the final version from Piggy 18 will have us wearing out our joysticks! We can't wait to play the full version!!!

Long live Team Piggy 18!!!





FRIDGE FURY

THE COLD REBELLION

Year: 2026

Editor/Developer: Eruiz00

Genre: Platform

Platform: Sega Master System

Website: [https://](https://www.smspower.org/Homebrew/FridgeFury-SMS)

www.smspower.org/Homebrew/FridgeFury-SMS

In the heart of an ordinary kitchen's refrigerator, order came to an end one day. For years, the fridge had been a temple of freshness and discipline. Dozens of yogurts lined up like little white monks, serene tomatoes, contemplative cheeses, and Zen carrots that accepted their fate in silence. Then, an overload in the rear coil unleashed the Apocalypse. An anomalous fermentation transformed the dairy kingdom into a thermonuclear hell of sentient, pissed-off food.

Thus was born the world of *Fridge Fury*, a Sega Master System homebrew by eruiz00, in which the protagonist is neither a muscular hero, nor a knight, nor a blue hedgehog... no, he is the Chickpea Killer, a murderous chickpea, boiled in Málaga, tempered by the Andalusian sun, and seasoned with the wisdom of generations. His mission is to restore order within the rebellious refrigerator before the uprising spills over into the kitchen... and then into the rest of the world.

The fridge, once a sanctuary, is now a surreal war zone. The yogurt, forgotten in dark corners, has turned sour and vengeful. The tomatoes have gained consciousness and a rage worthy of a late-night talk show. The cheese, fed up with being snubbed until it goes moldy, has hardened and forged blades of rind to exact revenge. The carrots have spent nights



practicing ninja arts. The wine bottles and beer cans, drunk on their own power, have banded together in a crusade against sobriety. It's a full-blown gastronomic coup, and in the midst of this chaos, our protagonist, the chickpea, awakens.

But our Chickpea isn't "just any chickpea"... he's a flatulent legume with a passion for lore. The Andalusian sun, enriched by the wisdom of





grandmothers, tapas, and family lunches, has instilled in him a sense of culinary justice that brooks no compromise. His mission is clear... to restore balance to the refrigerator and prevent the rebels from breaking through the seal and invading the kitchen... and beyond. The tone is unabashedly epic-absurd, but the fridge is a serious theater of war, and the gameplay is no joke! Every shelf is a level, every compartment is a biome, every leftover is a potential boss.

Fridge Fury is a fast-paced action platformer for the Master System, surprisingly long and varied for a homebrew game. It features a robust structure with expansive levels, a wide variety of scenarios, all kinds of platforms, and a movement system that even includes the ability to cling to walls like a chickpea-ninja in search of strategic vantage points from which to jump. The game isn't limited to simple "go from left to right and jump"—in fact, it also introduces a shooter section and a section aboard a floating vehicle, a sign that the refrigerator, at some

point, spills over into environments that defy culinary logic but enhance gaming logic. Every area of the fridge is a new challenge. The upper shelves become dangerous zones where ice acts as a slippery platform; the vegetable drawers are jungles of ninja carrots and treacherous salads; the side doors harbor armies of bottles and cans that bombard the player from advantageous positions. The level design plays with this idea. Each new area introduces some new element, whether it's a





different type of platform, an enemy pattern, or an environmental mechanic. In short, behind the game's design is someone who knows their craft.

As a homebrew title for the Sega Master System, *Fridge Fury* also has the merit of expanding a game library that, over the years, has been far less nurtured than that of the Mega Drive. The Master System homebrew scene is lively but niche, and seeing such an ambitious title—complete, lengthy, with multiple distinct gameplay sections—pop up for free on SMS Power! is a cause for celebration for those who still keep the console under their TV or use dedicated emulators.

The zany spirit of *Fridge Fury*, however, isn't just narrative; it's also reflected in the way the game challenges the player. It's not an "educational" or forgiving platformer, but a frantic one, packed with enemies, bullets, platforms, and sections where timing matters more than strategy. The chickpea protagonist isn't a dramatic antihero, but a yellowish projectile that zips

between explosive bottles and belligerent vegetables, and every mistake is punished with the coldness that only a fridge can deliver. The arcade spirit of the golden age is felt in every pixel. Overall, *Fridge Fury* is the perfect example of how the Master System homebrew scene can take a completely crazy idea and turn it into a surprisingly solid, long-lasting, and varied game. The absurd world in which the protagonist moves isn't just a gag—it's a coherent setting that justifies the variety of environments, enemies, and gameplay situations.

by **Ingrid Poggiali**



OUR FINAL SCORE

» Gameplay 82%

It's a great platformer! It's a joy to play, with well-designed levels and plenty of variety.

» Longevity 90%

For a homebrew game that originated in a competition, it has a lot to offer and plenty of gameplay.





ALTAIRIS

Year: 2026

Editor/Developer:

Loudscotbloke

Genre: Puzzle Game

Platform: Sinclair ZX81

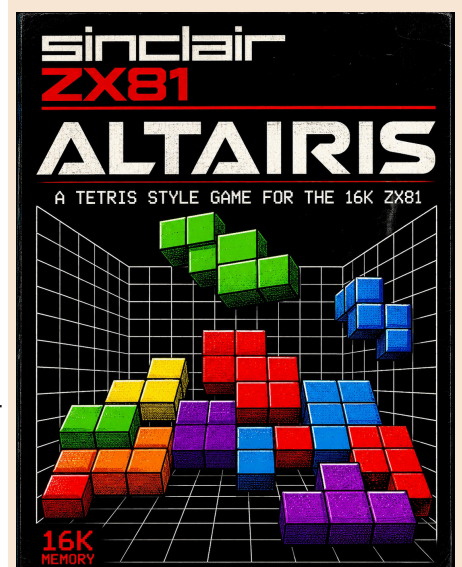
Website: <https://loudscotbloke.itch.io/altairis-sinclair-zx81>

The Sinclair ZX81 has declared war on oblivion, and it's doing so with this title. Altairis isn't just "coming out for the ZX80/ZX81" in 2026. It's a game that hits you right in the face to tell us that this machine can't be pushed aside like some old plastic relic, but must be recognized as a living, much-loved retro computer, still capable of delivering pure 8-bit arcade action with less RAM than a pocket calculator. The Loud Scots Bloke took his Sinclair, set it up against a modern arcade cabinet, and told it: "Now show those who are afraid that 80% of the retro community still thinks you're dead." And Altairis raises the bar, soars, shoots—and does so with a clarity that transcends technology and turns it into art.

Altairis actually began as a title for the ZX80 with 4K ROM and 16K of RAM, but it fits perfectly into that scene that considers the ZX80 and ZX81 part of the same ecosystem of stubborn enthusiasts. We're talking about people who, in 2020 and beyond, are still writing shoot 'em ups, puzzles, and arcade games for machines that, theoretically, struggle to even display a spaceship on screen using more than two characters. The game is a Tetris clone, using the same principles as the original, adapted to the limitations of this hardware. It's not just your typical "technical

experiment" to show off on forums: it's designed to actually be played, controller in hand (or rather... keyboard and fingers in a prayer position).

To understand why Altairis is interesting, you have to take a step back and look at the ZX81 world in perspective. The poor ZX81, at the time, was the "entry-level" machine. It had 1K of base RAM, character-based graphics, no color, no sound. It was the machine of BASIC code snippets in magazines, "advanced" calculators, and programming tutorials. And yet, even back then, some people





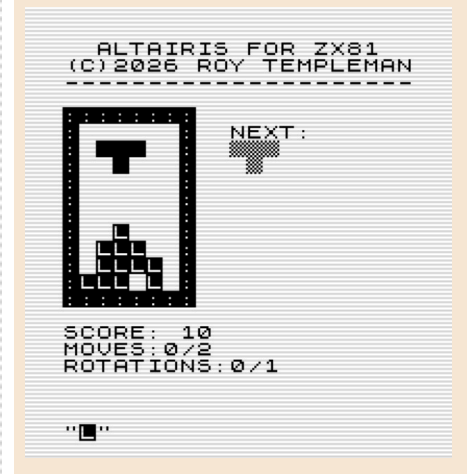
OUR FINAL SCORE

» Gameplay 90%

It's Tetris at its playful best on a machine that was considered "doomed." A joy to play.

» Longevity 95%

...did I already mention that it's Tetris? It's hard to put down, no matter which version you play!



were pushing it further with Scramble-style shoot 'em ups, planetary defense games, and arcade clones squeezed into 1K. Today, that tradition is not only still alive but has become a full-fledged homebrew scene: new games, new expansion boards, even hardware clones like the ZX81+38 that recreate the machine using modern components. Altairis fits perfectly into this revival: it does exactly what you love to see in a good ZX81/ZX80 homebrew. It takes an extremely accessible concept, adapts it within the machine's brutal hardware constraints, and instead of bowing to those limits, it uses them as part of its aesthetic. Every line, every character on the screen has to serve a purpose: there's no room for the superfluous, but there is room for charisma. We're not talking about a half-hearted port: it's a brand-new game for an old

machine, one that behaves as if it were still 1982... except that the level design and overall polish reveal the eye of a developer who's grown up with decades of game design history behind them. The ZX81 homebrew scene in general has become, in recent years, a sort of laboratory for extreme minimalism. Developers enjoy releasing "1K games programmed in BASIC," text adventures, side-scrolling shoot 'em ups, and strategy hybrids where every byte is a choice. Every new release is celebrated on social media, blogs, and YouTube channels, because the appeal now lies not just in "playing," but in seeing just how far you can push the limits of hardware designed to cost less than an evening at a pizzeria. In this context, Altairis isn't a marginal curiosity but one of those titles that demonstrate how, in 2026, the ZX80/ZX81 aren't

just a chapter in the history of computing, but a vibrant, living creative platform, with developers releasing games on itch.io alongside projects for the NES, C64, and the like.

If you love first-generation Sinclair machines, you have to at least see it in action. More than just a "new title for the ZX80/ZX81," it's a statement of intent. It says that as long as someone enjoys writing code that's seemingly impossible for hardware considered dead for forty years, these little plastic rectangles will never truly retire. And if you find yourself smiling as you watch a few black-and-white characters scroll across the screen, that means the mission is accomplished... and everything is perfect!

by **Carlo Nithaiah Del Mar Pirazzini**





VENTURE 48K

Year: 2026

Editor/Developer: Jason Indie

Genre: Dungeon Crawler/
Roguelike

Platform: ZX Spectrum 48k

Website: <https://jason-indie.itch.io/venture48k>

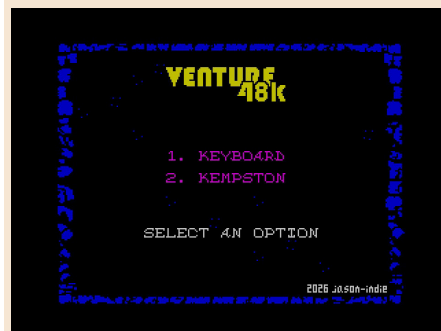
Deep inside an old ZX Spectrum 48K, where RAM is measured in crumbs and colors jostle for space in 8x8 cells, someone decided it was a good idea to hide a treasure. In the legendary dungeon of Sinclairyn, stories speak of riches buried deep within, but they remain silent on the number of (digital) skeletons that tried to descend and never made it back up. Venture48k is the adventure for those who choose to enter anyway, armed only with 48K of memory and pixel-perfect courage. It's a small, epic journey condensed into just under half an hour of gameplay, but for Spectrum lovers, it's the kind of half-hour that's worth an entire afternoon at the arcade.

Venture48k, developed by jason-indie, is a compact dungeon crawler that takes the concept of Rogue 64 and its modern successors and unceremoniously squeezes it into the confines of the 48K Spectrum. The player explores the dungeon of Sinclairyn in search of the famous treasure, guided by a simple premise... legends speak of great riches at the bottom of the dungeon; the rest is up to the player to write, through carefully considered moves and wrong decisions. The tone is unmistakably classic: you enter, explore, fight, die, and try again. No cutscenes, no endless lore—just that “one room at a time” atmosphere

that anyone who grew up with Rogue or the early Spectrum dungeons recognizes at first glance.

Venture48k is structured as a short but intense adventure. It lasts just over half an hour, suggesting an experience designed to be completed in a single, focused session. This isn't an endless roguelike or a marathon campaign, but rather a sort of “mini-roguelike” designed to challenge the player within a limited timeframe, while keeping the stakes high... The term “rogue64-ish” implies that there are elements borrowed from the genre's great classics—grid-based exploration, random encounters, resource management, dangers around every corner—but with a design intended to be accessible and self-contained.

Technically, the game is built with the





actual hardware in mind: a ZX Spectrum 48K, no exotic expansions, no compromises. This means the graphics adhere to classic standards—namely, a 256×192 resolution, limited colors, a color attributes for 8×8 blocks, and all the creativity needed to work around—or embrace—the infamous color clash. The game's compact nature is also reflected in its overall structure. Here, we explore a single dungeon, with a single objective and a limited duration. But within this narrow scope, Venture48k still affords itself the luxury of some variety. There's variety in the combat and in the dangers scattered here and there. This creates that typical roguelike tension. You're always torn between the desire to descend one more floor and the fear of never making it back up. One of its strengths is the consistency between its objective and its form. It's meant to be a short, dungeon-based adventure on the ZX Spectrum 48K, and everything—from its duration to its target hardware—aligns with this concept. The fact that it's free further lowers the barrier to entry. Just download the file, load it into an emulator

or on a real machine, and you're immediately in Sinclairyn, chasing the usual, eternal dream of treasure at the bottom of the dungeon. Its limited duration makes it perfect as a "one-shot" for a retro night: one run, maybe two, and the feeling of having experienced a small, self-contained journey.

Its limitations, inevitably, are the very things that partly define its charm. It's not a game that focuses on deep systems or the complexity of a modern roguelike: the 48K format and half-hour runtime force you to make tough choices. Those coming from years of PC roguelikes might find its mechanics less sophisticated; those seeking vast amounts of content and endless campaigns might perceive it as "too short." But for Spectrum enthusiasts, these aren't true flaws so much as the price to pay for a new experience built on vintage hardware.

by **Carlo Nithaiah Del Mar Pirazzini**

OUR FINAL SCORE

» Gameplay 85%

Simple and well-structured with a great balance of difficulty.

» Longevity 70%

It can be completed in a short amount of time.





ZEVIOUS SEVEN

Year: 2026

Editor/Developer:

zx81keyboardadventure

Genre: Shoot'em up

Platform: Sinclair ZX81

Website: [http://](http://zx81keyboardadventure.itch.io/zevious-seven)

zx81keyboardadventure.itch.io/zevious-seven

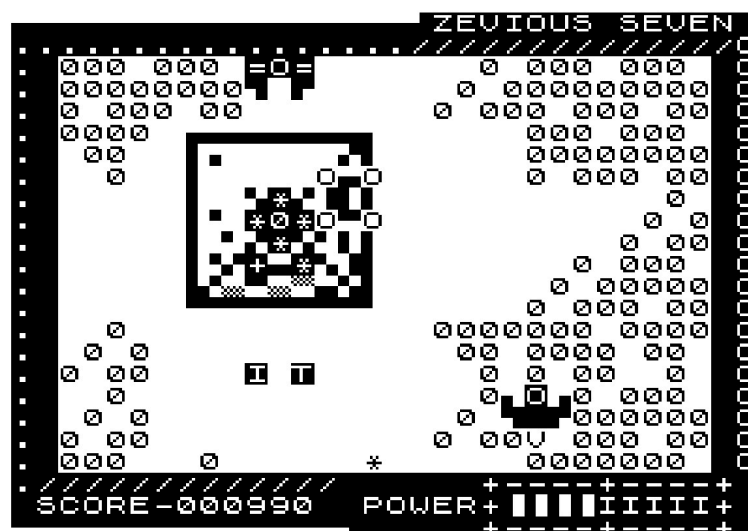
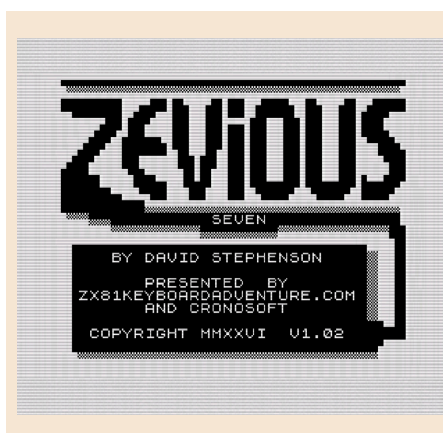
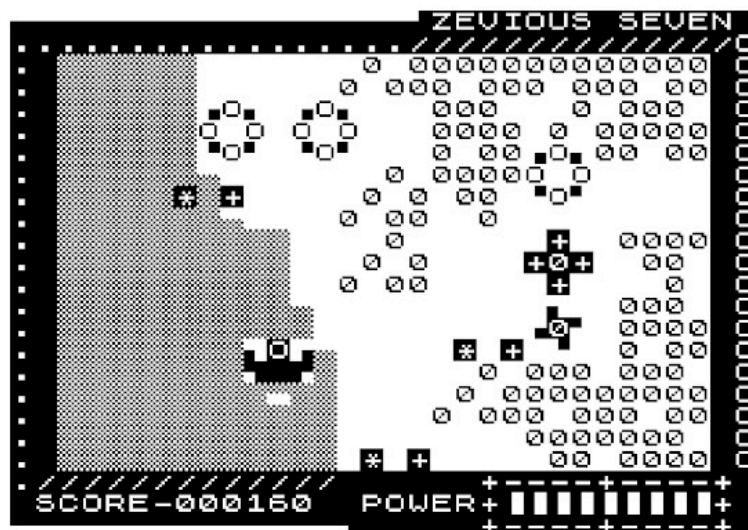
A solid game in just 16k!! This is Zevious Seven, a surprisingly well-crafted vertical shoot 'em up for the ZX81 that manages to squeeze the most out of hardware notoriously ill-suited for fast-paced action and smooth scrolling.

The game comes across as a sort of "Xevious that never was" for the ZX81. The author explicitly states that he wanted to create the kind of shoot 'em up that, in his opinion, the machine always deserved but never had. The setting is the classic one of defending Earth against an alien force—complete with crop circles, reactivated pyramids, and hostile armies—presented with a self-deprecating tone that effectively adds a touch of lore to a pure arcade title.

It presents itself as a pure vertical-scrolling arcade shooter. The screen scrolls continuously downward, while the player must simultaneously manage dodging, enemy fire, and the destruction of alien targets. The ship is equipped with dual cannons and a shield that regenerates slowly, creating a good balance between risk and long-term survival. An interesting detail is weapon overheating: holding down the fire button for too long locks up the cannons, forcing a mandatory pause and introducing an element of pacing management that isn't common in an 8-bit game of this generation. The roster of enemies is surprisingly varied. We have complex waves of aerial threats (Loopies, Loopy Bombers, Guppies, Zippers, and even full-fledged flying "walls") combined

with ground installations such as radars, launch pads, and tanks, which reward the player with score bonuses if destroyed. All of this contributes to the feeling of a well-crafted game, not just a simple tech demo.

The in-game controls are also quite good. You have the classic keyboard with the default layout (Q/A/O/P/M for movement and fire) and the option





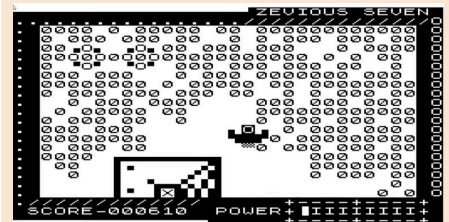
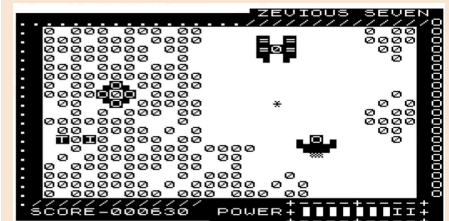
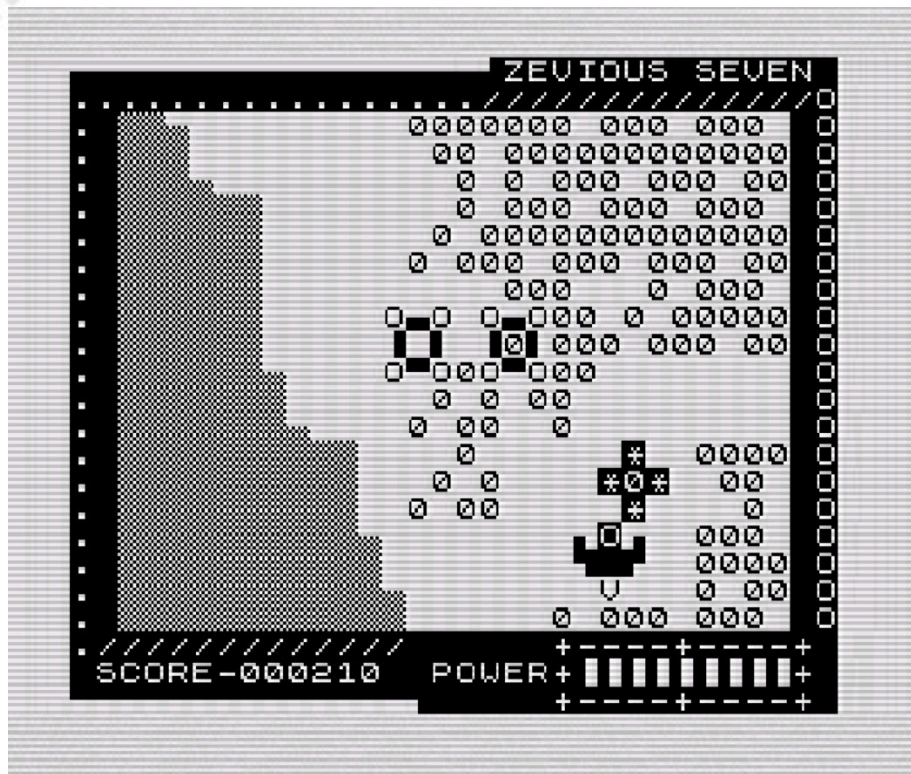
OUR FINAL SCORE

» Gameplay 90%

Various possible control configurations and excellent gameplay... in just 16k!!!

» Longevity 80%

Not an easy game, but a great old-school arcade shooter!



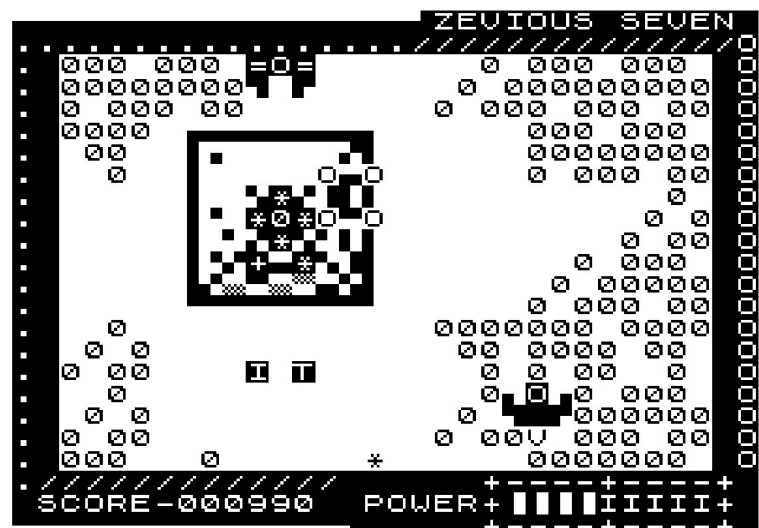
to remap the keys, as well as support for joystick interfaces like Kempston, ZXpand, Sinclair, and Boldfield. This attention to detail makes the game accessible to both those playing on real hardware and those using modern emulators.

The heart of the experience, however, lies in the technical implementation on the ZX81. The background tiles are organized into a 4x3 set that is loaded and scrolled at regular intervals, while the sprites are managed in 3x6 blocks, with half the sprites processed per cycle to maintain smooth animations. To stay within the 16K limit, an interesting compromise was made: compression was applied only to level data, while sprites and tiles were left uncompressed to avoid sacrificing gameplay speed. The result is an unusually fast title by ZX81 standards, with the refresh rate locked to the vertical frame rate and a noticeable difference between PAL mode (faster) and NTSC (slightly slower) modes.

Zevious Seven is, in essence, an extremely competent homage to the great arcade shoot 'em ups, filtered through the brutal limitations of the ZX81. It offers classic yet solid gameplay,

a seemingly intense difficulty curve, and technical execution that borders on "magic" on this platform. For those who love retrocomputing and the creative limitations of 8-bit systems, this is a must-play title; for everyone else, it remains an excellent example of just how much can still be squeezed out of a 1981 home computer when there's passion and a deep understanding of the hardware.

by Carlo Nithaiah Del Mar Pirazzini





WOLFENSTEIN 3D FIRST ENCOUNTER

Year: 2026

Editor/Developer: Pwwit1

Genre: FPS

Platform: Atari Lynx

Website: <https://drive.google.com/file/d/1l9VtmUSGzJCwQSZc8TBR8RKs5gfSP7Wa/view>

Wolfenstein 3D Shareware for the Atari Lynx is a head-on assault! The glorious American spy from 1992 returns to battle, but this time inside a Lynx cartridge, transforming the little Atari handheld into a corridor of stone, metal, and pixelated blood. Behind this magic lies the relentless work of pwwit1, who bent C++, 65C02 assembly, and every single byte of the system to conjure up, on the console's vertical screen, the oppressive labyrinth of the Nazi fortress and the exploits of B.J. Blazkowicz.

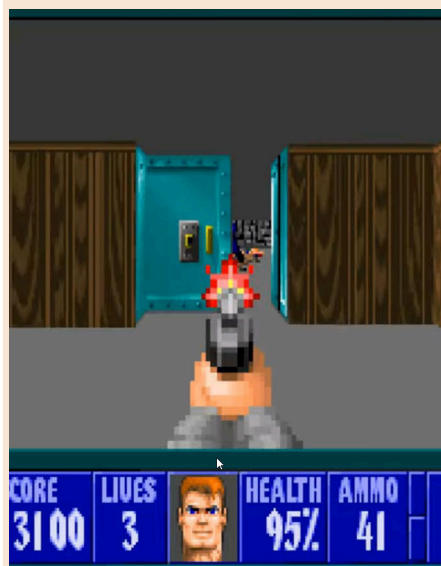
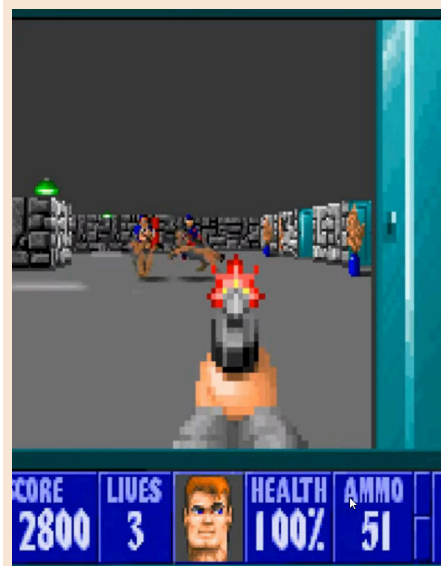
To understand why this port is so impressive, we need to go back for a moment to 1992. id Software's Wolfenstein 3D is the title that, more than any other, defined the "modern" first-person shooter. The formula consisted of a first-person perspective, (nearly) fully textured 3D corridors, Nazis to mow down, secret doors, treasures, colored keys, and a protagonist named William "B.J." Blazkowicz. The shareware episode—*The First Encounter*—circulated widely in its DOS version, to the point of turning the game into one of the symbols of BBS distribution. Structurally, the original is an episodic FPS: each episode features nine levels, with a boss at the end of the last one, and the player must advance by finding the end-of-map elevator, managing health, ammunition, and four main weapons (knife, pistol, submachine gun, chaingun), all tied to a single ammo pool. At the end of each level, the game displays percentages for secrets found, treasures collected, and enemies eliminated, with bonuses for those aiming for 100%. It's a simple yet tremendously effective design that paved the way for *Doom* and, in fact, the entire FPS genre as we know it.

In this context, the shareware version serves as the "gateway" to the legend. It features three complete levels, a fast-paced rhythm, sufficient enemy variety, and enough gameplay hooks to win over an entire generation. And it is precisely this version, *The First Encounter*, that became the starting point for the Atari Lynx port.

On the AtariAge thread, the author immediately clarifies the conversion's pedigree. It's a port of the 1994 Mac version, which in turn relied heavily on the SNES code. In practice, it doesn't start from the original DOS version, but from a variant that had already passed through the console filter—one better suited to limited hardware and featuring some technical solutions already designed for non-PC systems.

Perhaps the most surprising part is that the entire game has been ported and will be included in the full version... bosses included, even though this build only releases the three levels from the shareware episode, for obvious legal reasons. The author is explicit: he cannot distribute the full version without the green light from id Software, so the current package remains a very generous demo, though still limited to content that was historically already public in shareware form.

It's interesting to note that the port has been developed "on and off" for about four years, using a hybrid C++/65C02 assembly pipeline compiled with llvm-mos, and with resource management adapted to the Lynx's drastic constraints: wall textures and sprites are streamed from the cartridge to stay within the 64 KB limit—a solution typical of those who squeeze every available byte. The technical heart of the port is a very clever use of the Lynx hardware. The game uses





TATE mode, i.e., the console's vertical orientation. The screen is rotated 90 degrees, and the game is played "book-style," with the D-pad at the top or bottom depending on preference (the developer later added, upon request, a runtime flip via the Pause + Option 2 combination).

This choice isn't just aesthetic... in TATE mode, the Suzy graphics coprocessor can render wall spans with a single draw call by leveraging the hardware's tilt and stretch functions, significantly optimizing speed and enabling a surprisingly smooth frame rate for an 8-bit game. Instead of classic ray casting, a BSP tree comes into play here—a data structure often associated with the most advanced PC 3D engines, but which in this case is used to manage the drawing order of segments and maintain stable rendering.

The choice of vertical orientation—which on paper might have seemed limiting in terms of playability—actually feels natural. The game is incredibly fun! It has all the essentials: the first playable level is complete, and the health and ammo management is strict; overall, it has that early '90s FPS toughness that has no intention of holding the player's hand.

The shareware port of Wolfenstein 3D for the Atari Lynx is fascinating for more than one reason. On the one hand, it's a piece of real-time interactive archaeology: a 1992 PC classic, born on DOS, ported to the SNES and Mac, that lands in 2026 on an 8-bit handheld through a process of reverse engineering, adaptation, and optimization that seems to have come

straight out of a university lab rather than a hobby project. On the other hand, it's a reminder of just how vibrant the Lynx scene is... not just small experiments, but complex ports that make full use of the hardware architecture of this "misunderstood" handheld. When viewed in the context of Wolfenstein's history—from the top-down stealth of *Castle Wolfenstein* to id Software's "fake but brilliant" 3D—this Lynx port stands as a powerful testament. It proves that classics never truly stop coming out; they just change platforms and resolutions. And when a title like Wolfenstein 3D manages to run smoothly even on an Atari Lynx—complete with a map, bosses, and the full shareware version—it becomes clear that the legend no longer lives only in DOS memories, but also in the hands of those patient enough to bring it back to life bit by bit.

by **Carlo Nithaiah Del Mar Pirazzini**

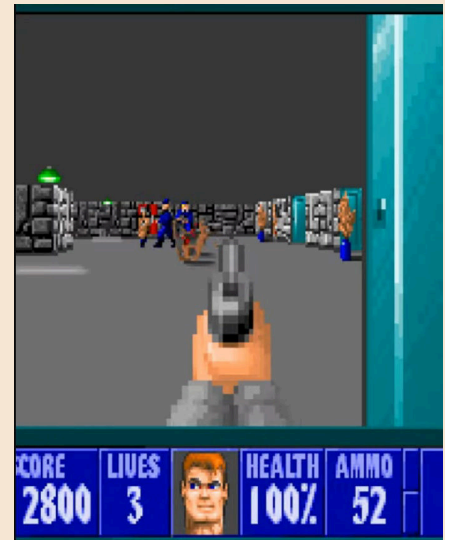
OUR FINAL SCORE

» Gameplay 85%

Tate Mode can be disorienting at first, but it grows on you after a while. The developer has also included the option to split the screen in the standard way... and Wolf is a really great game to play.

» Longevity 90%

It's just a limited Shareware version, but it's already a lot of fun to play.





GREEN LAND

Year: 2026

Editor/Developer: Fadest/
Yastuna Games

Genre: Strategico

Platform: Atari Lynx

Website: <https://fadest.itch.io/green-land>

In a world of games that seek to keep players engaged with endless missions and increasingly complex systems, Green Land takes a different path—one of melancholic simplicity and measured challenge. There are no heroes, enemies, or plots to unravel, but rather an empty island to fill, a grid to transform into order, and a set of simple rules that conceal a surprising depth of strategy. It is a solo game, designed for those who love planning, precision, and the satisfaction of a well-solved puzzle, without the need to compete against an opponent or a timer.

It's a strategic puzzle game for the Atari Lynx that transforms the concept of a solo board game into a controlled and rigorous digital experience. The goal is clear: to create the most orderly colony possible by carefully placing roads, houses, trees, castles, and a church, adhering to the scoring rules and striving to maximize every single placement. Every game is a battle against yourself, against your own high score, and against the capricious nature of the pieces that arrive. It's not a game that shouts, but one that whispers. It invites you to pause, breathe, and consider every move as if it were your last.

The game's structure is elegant. The grid represents your island, which already features two starting roads



and a series of “ghost” symbols—ghost trees, ghost houses, ghost castle—that indicate special positions. If you place the corresponding elements (trees, houses, castles) on these spots, you earn extra bonuses. You have a limited set of tiles at your disposal: 30 roads, 15 houses in three different designs (which, however, are all worth the same), 14 tree tiles of various sizes, 4 castles, and a church. Each turn, the game offers you an X-mino to place; it's up to you to decide where to fit it in to grow your colony, connect roads, expand the forest, or build residential neighborhoods around the church.

The scoring system is at the heart of the strategy. Trees are worth 5 points each, with a 10-point bonus if placed on top of a ghost symbol, and an





additional bonus for the “largest forest,” which awards 5 extra points for each tree in the largest cluster. Unconnected roads do not score points, while each road tile connected to an active network is worth 5 points, with a super bonus of 50 points if you manage to create a road connecting the two flags at opposite ends of the map. Houses are worth 5 points each, 15 if placed on a ghost symbol, and earn an additional 5 points for each adjacent active road, effectively turning well-connected neighborhoods into mini-scoring hubs.

Castles are the big players... each tile is worth 25 points, which double if placed on a designated symbol; furthermore, if you manage to build a 2x2 castle using all four tiles, you earn a 50-point bonus. The church follows a similar logic: it's worth 25 base points, but if placed in the center of four adjacent houses, it grants an additional 50-point bonus. Rounding out the system is a final 50-point bonus for anyone who manages to complete the entire grid—a goal that's by no means guaranteed, given the increasingly cumbersome nature of the X-minos as

the game progresses.

This combination of rules produces gameplay that strikes a delicate balance between planning and adaptation. Each game is governed by a seed that controls the order of the pieces, making the layout semi-random yet reproducible. The player can view the seed, pause the game from the title screen or during gameplay, and—thanks to the latest updates—even undo the last placement by holding down the B button until a meter fills up. This “undo” feature isn't just a convenience for the absent-minded, but an invitation to experiment with more ambitious strategies without the fear of irreparably ruining a good run due to a misclick.

Visually appealing and with a soundtrack that could use some tweaking (we're reviewing a preview build), Green Land will also be available in a physical edition following the digital game's final release. If you love “relaxed” and thoughtful games, this one's for you!

by **Giampaolo Moraschi**

OUR FINAL SCORE

» Gameplay 85%

Elegant and easy-to-manage game structure. It blends strategy with casual gameplay.

» Longevity 85%

Enjoyable challenges that keep you entertained for quite some time.





CHOPCHOP

Year: 2026

Editor/Developer: Sebotron

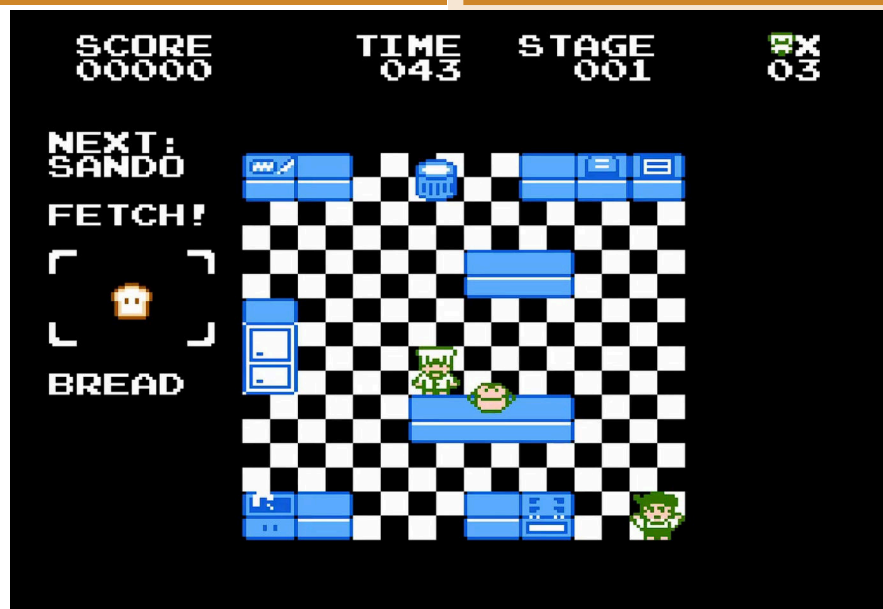
Genre: Cooking game

Platform: Nintendo NES

Website: <https://sebotron.itch.io/chopchop>

ChopChop is the NES game that proves an uncomfortable truth: reading the instructions saves your life... or at least your dinner! It's a micro-project by sebotron, developed over a weekend as a break from his JRPG **The Book of Rynn**, but it has all the makings of that classic "joke" game that you end up replaying ten times in a row. It's a cooking game for the NES, but there are no Michelin-starred chefs, no fancy plating, and no MasterChef. Here, it's just you, an 8-bit kitchen, a recipe to follow, and a timer ticking faster than your brain can keep up. ChopChop is described by its creator as "a frantic little NES kitchen game about reading a recipe, grabbing the right ingredients, and racing through the prep before..." and from that sentence alone, you realize that anxiety is a design feature, not a bug. You have to scan the recipe on the fly, figure out what that line of text really wants from you, grab the right ingredients, and combine them in the correct order before time runs out. Miss a step, and your kitchen turns into a pixel-art museum of culinary horrors.

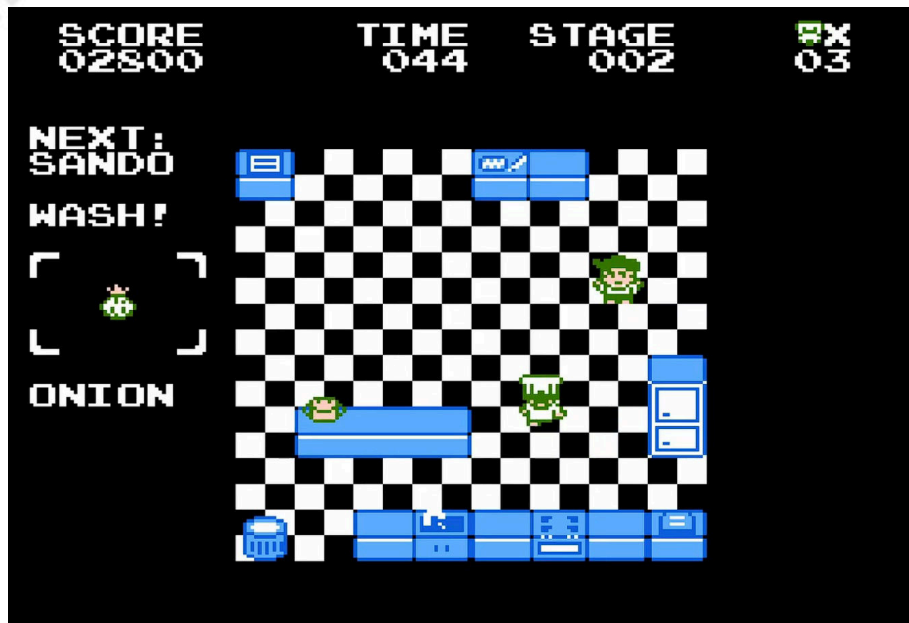
The structure is super simple but mean... in all the right ways! Each dish is a mini-challenge based on reading speed and quick reflexes. It's the classic game where you tell yourself you'll "just try it for two minutes"—since the developer himself mentions 5–10 minutes of entertainment—and then those 5–10 minutes turn into a toxic loop of "okay, now I know the recipe; I won't mess anything up this



time." It feels like a cooking-themed QTE: the tension of an arcade game, but tied to something as seemingly harmless as preparing a meal.

Aesthetically, it plays the pure nostalgia card. It's an NES-style title that looks like it came straight out of an '80s Nintendo black box, with clean, legible graphics, a minimalist color palette, and an interface that speaks to you





OUR FINAL SCORE

» Gameplay 80%

Tough but satisfying... A bit like dry bread in a latte on a winter morning!

» Longevity 80%

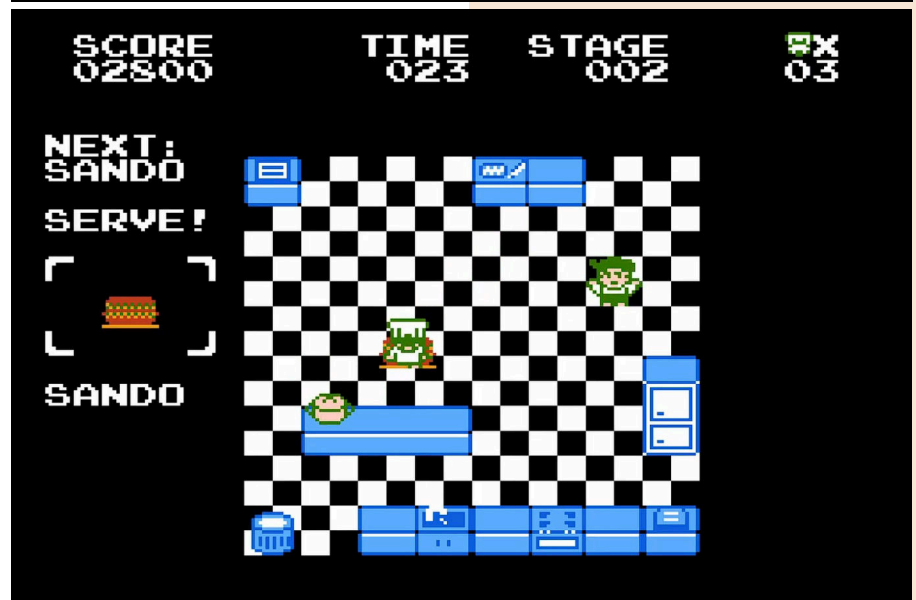
It might seem to go by as quickly as a piece of chocolate... but one game leads to another... Although it's essential to read the instructions carefully.

more like an old instruction manual than a glossy modern indie game. It works because it feels like a long-lost game, resurfaced from an anonymous cartridge found at the bottom of a box, but with the kind of fast-paced game design you'd associate more with 2026 than 1987... without a shadow of a doubt!

But enough now... I have to get back to the stove!!!

by Carlo Nithaiah Del Mar Pirazzini

From a practical standpoint, it's also extremely accessible. The NES ROM is available for free on itch.io, so it's perfect for loading into an EverDrive, on MiSTer, or in your laptop's usual couch-gaming emulator. For the homebrew scene, it's a little calling card from sebotron. Guys, if he can turn a recipe into a tense and fun experience, you've got to be curious about what he'll do with a full-fledged JRPG like **The Book of Rynn** (here at the editorial office, we're really looking forward to it with bated breath, Ed.). Ultimately, ChopChop is the ideal 8-bit gaming snack... you start it out of curiosity, keep playing out of pride, and only give up when you realize you're reading the recipes in the game more carefully than you do in real life. Ideal score: 8 out of 8 bits—keep it permanently on your SD card alongside the classics, for when you want to switch from Contra to “battling” the oven.





THE BLACK CAULDRON

Year: 1986/2026

Editor/Developer: Sierra On-Line/Aria Wiogec

Genre: Avventura grafica

Platform: Amiga, macOS

Website: <https://aria-wiogec.itch.io/the-black-cauldron>

The Black Cauldron on itch.io isn't a "new" game in the strict sense, but a very convenient gateway—and one that's explicitly geared toward a modern audience—to one of the most underrated tie-ins of the Sierra era, re-released today with the meticulous care of a passionate archivist. Aria Wiogec doesn't take center stage as the creator of a remake, but rather as the curator of a packaged, ready-to-use Amiga/Mac version, allowing the itch.io community to rediscover a piece of graphic adventure history that is now officially freeware.

The Black Cauldron was originally released in 1986 under the Sierra On-Line label, designed by Al Lowe in collaboration with Roberta Williams and based on the 1985 Disney film, which in turn was inspired by Lloyd Alexander's *Chronicles of Prydain* novels. Unlike many other Sierra titles of the era, it does not require a text parser; it is, in fact, a more accessible "hybrid" graphic adventure with a simplified interface, designed in part for a younger audience who might have just seen the movie in theaters. The original platforms speak for themselves: MS-DOS, Apple II, Atari ST, with the Amiga following in 1987, when the Sierra brand began expanding into more powerful, color-capable systems.

From a narrative standpoint, the game follows the Disney film fairly closely. You play as Taran, a young swineherd tasked with protecting Hen Wen—a sow with prophetic powers—from the obsessive pursuit of the terrible Horned



King. The goal is to prevent him from getting his hands on the Black Cauldron, an artifact capable of summoning an army of the undead and turning the world's fortunes upside down; along the way, we encounter familiar faces to fans of the film, such as Princess Eilonwy and the bard Fflewddur Fflam, as well as, of course, the small and enigmatic Gurgi. It's an adventure that blends fantasy wonder with surprisingly dark undertones for a Disney product of





that era, and it's precisely this balance that makes it worth rediscovering even today.

The curious aspect—and one that's somehow central to *The Black Cauldron*'s relevance today—is its status as a “minor” title in Sierra's history, yet one that ended up finding a second life thanks to the community. The game was made freeware years ago by Al Lowe himself, who made the files available on his website, and since then it has become part of the ScummVM scene and retro collections as a precious little relic of an era when movie tie-ins weren't yet synonymous with disposable products. At the same time, remakes and AGS ports for Windows have emerged, complete with full access to the source code—a sign of affection that has far outlasted the film's box office success.

Aria Wiogec's page on itch.io fits into this context as a modern hub. Here we find neither a redesign nor a reinterpretation, but an Amiga/Mac package downloadable with a single click, accompanied by a concise description that immediately brings the key elements back into focus... Sierra On-Line, 1986, Al Lowe, Roberta Williams, Disney. It's a presentation almost like an encyclopedia entry, but that's precisely what makes it effective. If you know the game, you immediately understand what it's about; otherwise,

it offers a simple way to replay it on emulated hardware without having to hunt for ZIP files lost in anonymous archives.

Looking at the project as a whole, *The Black Cauldron* on itch.io functions as a small time capsule. It allows you to relive a graphic adventure that, despite its Disney “licensed” nature, bears the signature of two key figures in the genre's history and bears witness to a transitional phase in which Sierra was experimenting with more intuitive, less punishing interfaces compared to the crude parsers of its early days. The fact that the title is now freeware and accessible via platforms like ScummVM and legal download sites makes it easier to enjoy; the version curated by Aria Wiogec, with a focus on Amiga/Mac, adds another avenue of access designed specifically for those already immersed in the indie/retro world of itch.

It's not a flashy remake, it's not a reboot, it's not a “new definitive HD version”: it's a bridge. A link between 1986 and 2026 that, with a simple 8.4 MB ZIP file, brings back into circulation a fantasy adventure more significant than its “Disney tie-in” label suggests. And for those eager to explore the history of graphic adventures, that bridge is definitely worth crossing.

by **Giampaolo Moraschi**

OUR FINAL SCORE

» Gameplay 75%

A simple and streamlined game compared to Sierra's more renowned adventure titles. Suitable for a younger audience.

» Longevity 72%

Not difficult to finish, but enjoyable.





ADRIAN AND A FRIEND IN NEED

Year: 2026

Editor/Developer: NTPR

Genre: Platform

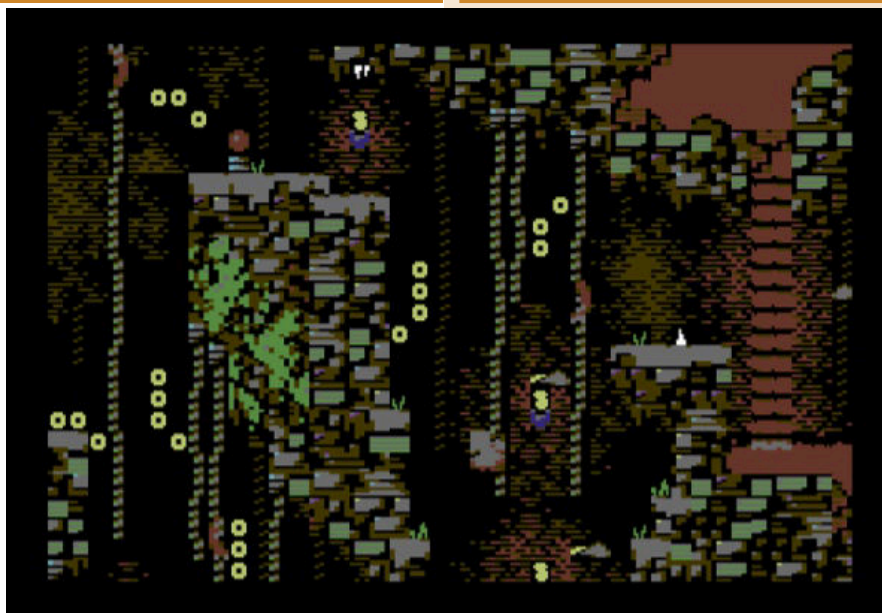
Platform: Commodore 64

Website: <https://ntpr.itch.io/adrian-and-a-friend-in-need>

“Adrian and a Friend in Need” is a very well-crafted Commodore 64 platformer that builds upon the foundation of **Crystian and the Lost Crystals**, expanding it to be more expansive, fluid, and spectacular—resulting in a truly remarkable retro title in terms of graphics, level design, and overall presentation.

In this adventure, you’ll play as Adrian, Crystian’s friend, who sets out on a mission to help him recover the scattered crystals, all within a lighthearted and self-deprecating narrative framework (they even mention that they plan to play *GTA VI* together afterward—awesome!). The adventure is divided into six new, larger, and more varied worlds, each with a crystal to find and a non-linear structure that lets you explore and choose different paths to reach the exit.

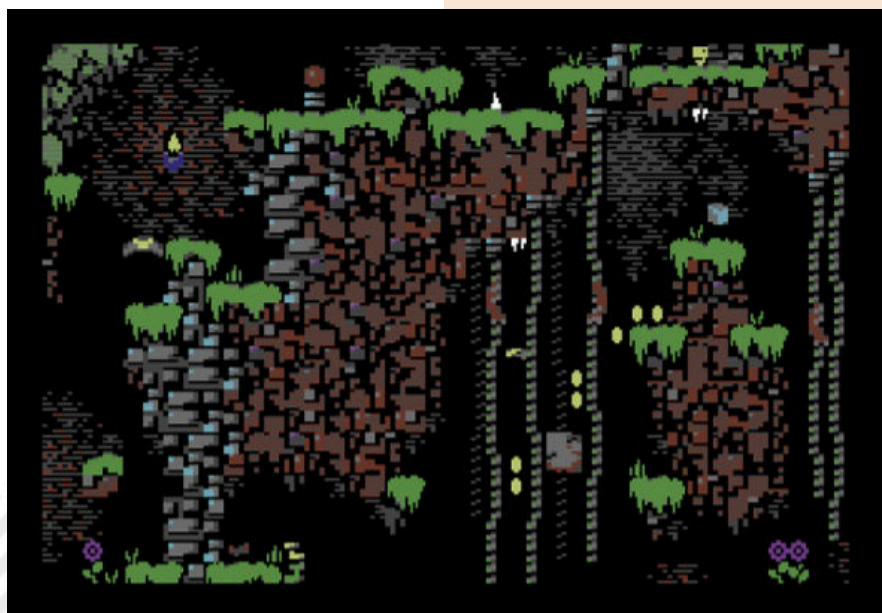
Throughout the levels, we’ll traverse environments rich in visual elements—vegetation, waterfalls, lava, water, ropes, and ladders—that give the impression of living, “full” places, not just straight corridors; this makes the levels as visually stunning as they are complex to memorize. The concept of a single, expansive, and interconnected map per level evokes certain 1980s platformers where, rather than simply “beating the level,” you must learn to navigate a small maze full of dangers and shortcuts. Compared to the previous installment, the decision to abandon grid-based movement makes Adrian much more responsive and agile (and I’d say thankfully so!). The character is faster, more agile, and jumps with precision, with a feel closer to a “pure” action



platformer than to a puzzle-platformer with fixed steps. This choice gives the game a more dynamic and modern pace, but at the same time makes managing jumps on ropes and ladders more delicate—typically requiring pixel-perfect precision.

Controls are handled by the joystick on port 2, with the fire button dedicated to jumping, and the design also accounts for more complex situations

like climbing and collisions. If you’re hit while climbing, you’ll be “knocked down” for a moment, forcing you to plan your timing and routes more carefully. The game also offers some handy keyboard shortcuts (quit, restart level, toggle between ambient effects and music), which for a modern C64 developer are a quality-of-life feature that shouldn’t be taken for granted.

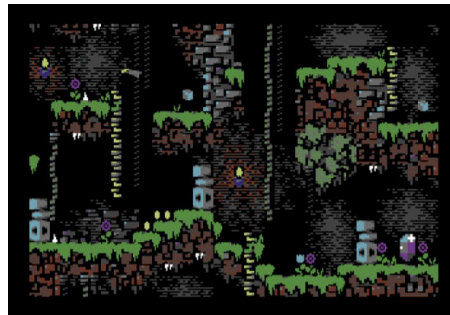




Each map features about a hundred enemies, with various types (birds, worms, fish, lava rocks) and distinct movement patterns, alongside an “active” environment with rocks and spikes that fall dynamically and unpredictably. The developer has built a semi-automatic system for generating enemy patterns, utilizing color maps and PHP scripts, which has made it possible to populate the levels with over 600 entities while maintaining consistency and variety in their movements. In addition to purely action-based obstacles, there are simple puzzles designed to open gates—a mechanic that adds a strategic dimension to the basic act of jumping. Coin collection—following the classic rule of 100 coins = one extra life—along with energy and life pickups, round out a structure very much in line with arcade tradition, yet with a density of elements exceeding the average of original C64 titles.

Technically, each map measures 152×115 characters, for a total of 17,480 “tiles”—more than double the size of Crystian’s maps, which topped out at around 8,000—demonstrating the effort to create larger and more complex environments. To handle this workload, the author set up a pipeline that combines level generators, manual refinement, and automated scripts—a very modern approach applied to the C64’s memory constraints.

The character set system is also cleverly designed. The game uses two character sets—a main one and one dedicated to environmental animations—with a routine that temporarily swaps out the vegetation characters for those from the font when text needs to be displayed on screen, thereby maximizing graphical



variety and the number of “virtual” sprites. This trick allows the game to maintain a surprising amount of detail—terrain, vegetation, torches, background elements—without sacrificing readability or enemy variety. The soundtrack was composed by Johan “Stinsen” Samuelson, a highly regarded figure in the C64 scene, and is described by the composer himself as one of the game’s highlights, despite the extremely tight memory constraints for music. In addition to the music, there are additional ambient sound effects created by other musicians, which round out the soundscape and allow the player to easily switch between focusing on the effects or the musical tracks via an in-game option.

The game is compatible with both PAL and NTSC C64 hardware and runs smoothly on VICE as well, with the author recommending specific palette and contrast settings to achieve the best possible visual quality. This attention to usage conditions—typical of modern “scene” projects—shows just how much the author cares about the overall experience, not just the code. Overall, “Adrian and a Friend in Need” is a modern platformer for the C64 that successfully blends nostalgia with contemporary design. The only real “downside” may be the transition from grid-based movement to free movement. Those who loved the almost puzzle-like setup of the first game might miss that precision, while those seeking more speed and fluidity will find Adrian to be a natural evolution.

by **Roberto Del Mar Pirazzini**

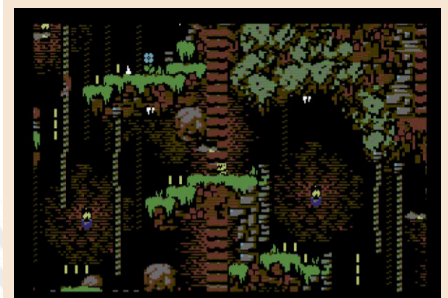
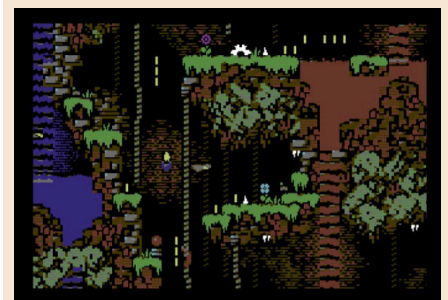
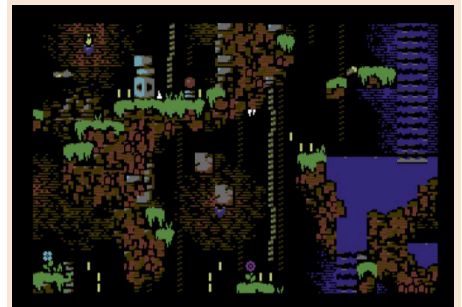
OUR FINAL SCORE

» Gameplay 85%

Simpler and more intuitive control system, suitable for fans of action platformers.

» Longevity 80%

A good mix of platforming and puzzles.





BOMB JACK GX

Year: 2026

Editor/Developer: Anthony Flack

Genre: Platform arcade

Platform: Amstrad CPC Plus, Amstrad GX4000

Website: <https://anthonyflack.itch.io/bomb-jack-gx>

Bomb Jack GX is the classic case where you expect the usual “cute, sure” from a weekend homebrew project... but instead it blows you away with a gaming bomb on the Amstrad Plus and the GX4000! Anthony Flack took Bomb Jack Extra Sugar, stripped out the extra modes that nobody really used, and decided to do something simple in theory but devastating in practice: a pure arcade port, pumped up with all the power of the Plus hardware.

There are no nostalgic filters here or “...it’s nice for a CPC game”: Bomb Jack GX unashamedly aims for the arcade experience—full 50 Hz, dozens of simultaneous sprites, up to 50 colors on screen, and gameplay straight out of Extra Sugar with a few surgical tweaks to the difficulty to bring it closer to the 1984 arcade cabinet. The promise is clear... if you still remember the rhythm of the original Bomb Jack, you’ll feel right at home here in half a second—except that the house has been remodeled, repainted, and wired with fiber optics. Graphically, it’s a bit of a show-off, but the kind you love. The game takes full advantage of the Amstrad Plus and GX4000’s features, such as multiplexed sprites, the extended palette, color effects everywhere, and that constant feeling of “come on... this can’t be a CPC, you’ve got to be kidding me.”

It’s not all cotton candy, though. Precisely because Bomb Jack GX pushes the hardware to its limits, those delightfully nerdy issues emerge



—the ones that make emulator enthusiasts happy and drive developers to despair. The bombs are, in fact, handled as multiplexed hardware sprites with ultra-precise timing. When there are more than four on the same line, the game shifts the few available sprites at exactly the right moment to create the illusion of a larger number. The result... on some emulators, the timing isn’t quite accurate enough, and the bombs end up “in the wrong place,” shifted by a few pixels as if they’d had one too many energy drinks. Anthony Flack, with Zen-like calm and a touch of irony, responds something like, “It’s perfect on the

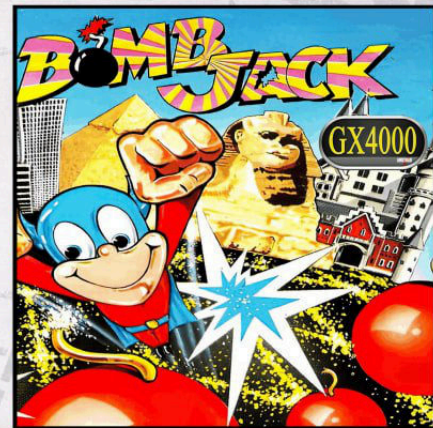




CARTOUCHE DE JEUX · SPIELKASSETTE
CARTUCHO DE JUEGO · CARTUCCIA GIOCHI

GAME
CARTRIDGE

464 PLUS · 6128 PLUS · GX 4000



real hardware; talk to the emulator's author... maybe they can use Bomb Jack GX as a benchmark"... Well, I'd say he took it with immense philosophical grace.

Getting back to the game and the selection of content, here too we're dealing with a classic as classic as it gets. No special modes, no built-in trainers, no meta-games. Anyone looking for the invincibility of *Extra Sugar* won't find it here—this is the arcade-centric version, straightforward and no-frills.

Bomb Jack GX is designed to run on any Amstrad Plus or a genuine GX4000, but it really shines when paired with the Pico-GX cartridge or the ACE-DL emulator, which supports high-score saves. The persistent high-score feature isn't just a gimmick—it's the thing that makes you say, "Okay, one more game and then I'll stop," only to find yourself an hour later still there, fighting to add three more digits to the nickname of the guy who humiliated you in that Facebook screenshot. It's no coincidence that Flack recommends ACE-DL as the go-to emulator and points out that it's exactly what he used to develop the game, emphasizing the virtuous cycle of creator-tool-community.

Ultimately, Bomb Jack GX is one of those cases where the word "port" doesn't quite do it justice. It's a labor of love for Tecmo's arcade classic, a

show of what the Amstrad Plus/GX4000 is capable of, and a very clear message to the scene... that in 2026, you can still take an arcade classic and make it feel like the flagship title for your home console. If Bomb Jack ever swindled a coin out of you, Bomb Jack GX is the perfect opportunity to get your revenge... and, inevitably, get swindled all over again.

by Marta Rossmann e Nithaiah

OUR FINAL SCORE

» Gameplay 92%

All the magic and gameplay of the arcade version perfectly recreated.

» Longevity 90%

Same as the previous entry. Challenging, tough, fun, and endlessly replayable!





RETURN TO BLACKTOOTH: A HEAD OVER HEELS ADVENTURE

Year: 2026

Editor/Developer: Thalamus Digital

Genre: Adventure

Platform: Amiga, Atari ST

Website: <https://thalamusdigital.itch.io/return-to-blacktooth-amiga> e <https://thalamusdigital.itch.io/return-to-blacktooth-atarist>

"Return To Blacktooth: A Head Over Heels Adventure" is the official sequel to the 1987 classic Head Over Heels, once again programmed by Colin Porch and released today by Thalamus Digital on Amiga—nearly forty years after the original. The game runs on real hardware and aims to appeal directly to those who grew up with 1980s Britsoft, while still giving a nod to modern players.

A sequel conceived in the '80s... released in 2026

By the late '80s, Porch had already completed the Amiga and Atari ST versions of Head Over Heels and immediately set to work on a sequel, which, however, never saw the light of day at the time. Only now, with the approval of the current rights holder (Atari), is that youthful project finally being polished and released as *Return To Blacktooth*, almost like a time capsule recovered and made playable on our Amiga computers... and we couldn't be happier!!!

Head and Heels: The Formula Remains Unchanged

At the heart of the design are the two protagonists, Head and Heels, with complementary abilities. Head jumps high, moves through the air, and can shoot "donuts," while Heels doesn't jump but is fast and uses a bag to collect and move objects. As in the original game, the initial goal is to reunite the two characters so they can then combine into a single entity that combines both of their powers,



opening the door to even more complex puzzles.

This two-character structure is still a brilliant idea today, and the sequel demonstrates just how much potential remained to be explored in the mechanics introduced in 1987. It's not just a simple "little extra," but an expanded reinterpretation of everything that made the original so special.

Over 300 screenshots, including remakes and new content





OUR FINAL SCORE

» Gameplay 85%

Challenging but enjoyable. Well-designed puzzles that are always solvable. Controller mechanics need refinement.

» Longevity 80%

A title suited for fans of this genre. Newcomers will need a bit of practice to explore the game's 300 rooms.



Return To Blacktooth offers over 300 isometric screens, featuring a mix of completely new rooms and sections that revisit or remix classic puzzles (such as the iconic remote-controlled “Prince Charles Dalek”). The new elements—force fields, invisible platforms, and other variations—expand the formula in a coherent way, without distorting the logic of the first game. This is where the nostalgia factor comes into play... both a blessing and a curse for us eternal retro-gaming “Peter Pans.” Rediscovering familiar rooms might feel like a slightly recycled “best of” compilation, while for others it will be like coming home after decades. It depends a lot on how attached you are to the original and what you expect from such a long-awaited sequel.

Difficulty: Designed for Veterans

The challenge level starts off high right away. Many puzzles seem tailored for those who already played through Head Over Heels back in the day, and the initial level of complexity is comparable to the most advanced levels of the original game. If you’ve never played the classic version, you’ll likely feel a bit lost, and the learning curve may seem steep.

However, there are targeted aids: the number of lives is much more generous than in the past, and can increase depending on the difficulty level chosen. Additionally, there’s a mechanic that

allows one character to transfer some of their lives to the other under certain conditions, providing a valuable safety net in the most brutal situations. Even with these aids, Return to Blacktooth remains a game that demands dedication. Some puzzles will literally have you





scratching your head for hours and cursing like seasoned dockworkers. The important thing is that the solutions are always logical and achievable, and when “the light bulb goes off,” the feeling of having won a battle of wits with the designer is exactly like that of the best puzzle games of the era. You’ll also find yourself solving things in ways that seem “outside the box,” and even in these cases, the game always rewards perseverance.

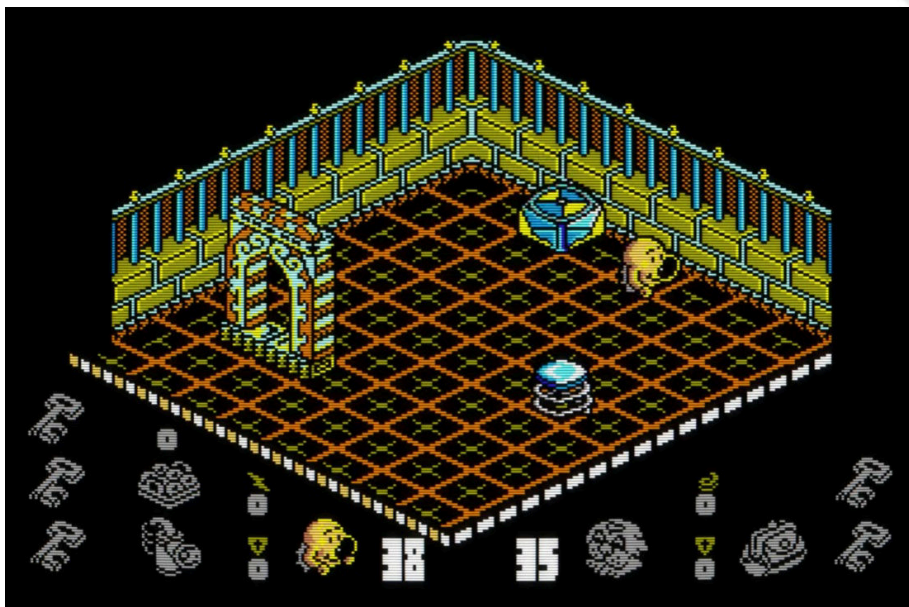
Historical Limitations of the Isometric View

The only truly jarring aspect—more a legacy of the genre than a flaw in the sequel—is the isometric view. Jumping with precision and judging distances isn’t always intuitive, and sometimes the perspective hides crucial platforms, leading to a few deaths that feel “unfair.” It’s the same problem that plagued the 1987 title and many other isometric games of the era, so if you grew up with *Landstalker*, *Knight Lore*, or similar titles, you’ll probably feel “right at home”—for better or worse. Those accustomed to modern camera systems, however, may find it a bit outdated.

Technical Notes on a Real Amiga

For this review, the game was tested on a real Amiga, and the verdict is very positive: *Return To Blacktooth* runs smoothly and features elegant graphics even on entry-level models. If you’re only familiar with the 8-bit versions of *Head Over Heels*, the visual leap on the Amiga will blow you away, especially in terms of detail and colors. Both floppy disk booting and hard disk installation are supported, along with a convenient save feature—essential for such a long and challenging adventure.

On the ST, the visuals are “different” but the gameplay speed is definitely better, at least in my personal opinion. In either case, it’s a fantastic effort on both systems.



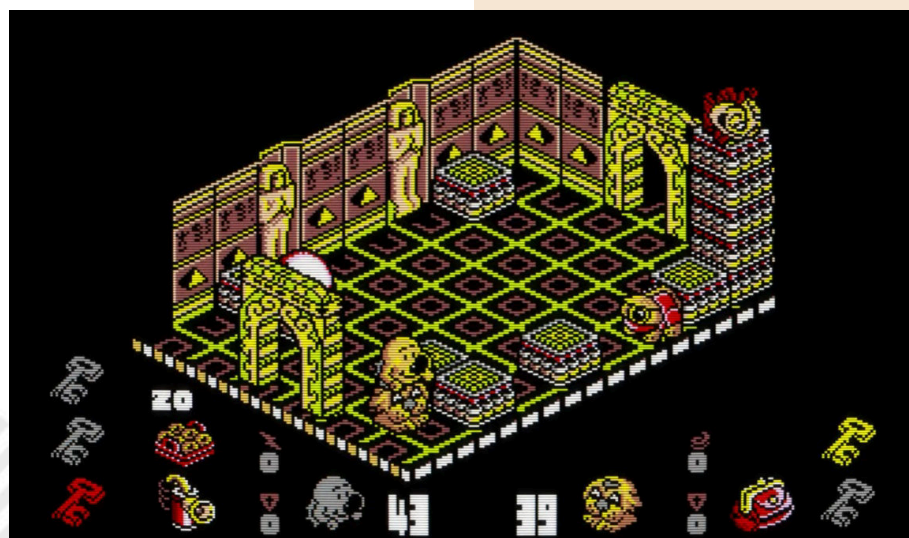
CD32 and Controls: The Only Real Drawback

The main drawback in terms of comfort is the lack, at the time of this review, of full support for the CD32 controller. The character Head is easy to control with the joypad (jump on the red button, fire on the blue one), but for Heels, you need a combination of joypad and keyboard, which detracts a bit from the immediacy of the gameplay. The good news is that the publisher has already confirmed the release of a dedicated CD32 version and an update that should address this issue. For those playing on classic hardware with a joystick and keyboard in the “traditional Amiga” setup, the problem is less severe, but it remains a gap to be filled.

SUMMING IT UP

If you loved the original, *Return to Blacktooth* is practically a must-buy: it’s bigger, more substantial, and clearly designed for those seeking a new challenge in the world of *Blacktooth*. If you’re new to the series, I recommend playing the 1987 classic first, so you can better appreciate both the design and the wealth of references and variations this sequel brings. Either way, highly recommended!

by Carlo Nithaiah Del Mar Pirazzini





INFE2TATION

Year: 2026

Editor/Developer: Monte Boyd

Genre: Action/Platform

Platform: Commodore 64

Website: <https://monteboyd.itch.io/infe2tation>

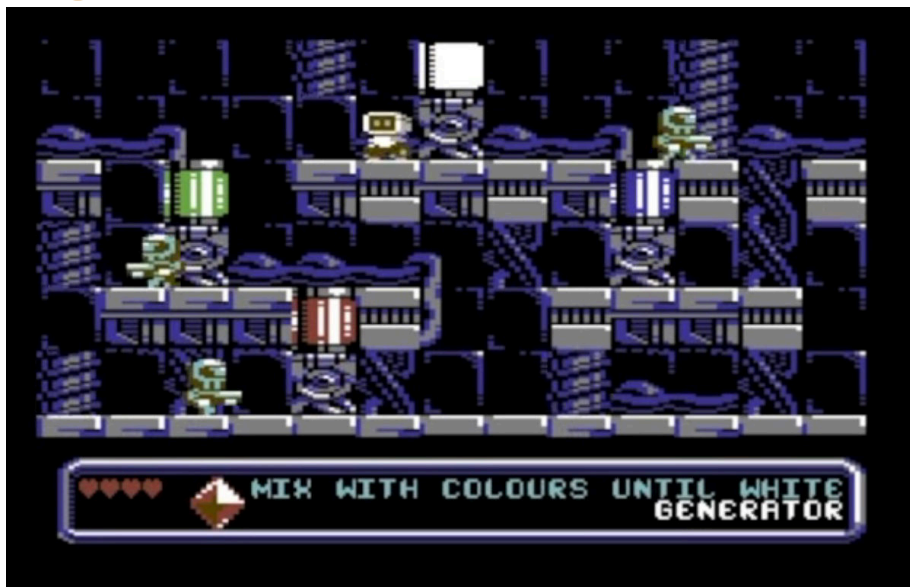
Infe2tation marks the triumphant—and decidedly more ambitious—return of the galactic sheriff of Monte Boyd on the Commodore 64, a sort of “Episode 2” that takes the arcade-style gameplay of the original infeZtation and embeds it within a more structured framework, complete with a map, missions, and a manual that evokes the feel of old cassette tapes from newsstands. The premise is simple only on the surface: our sheriff (she’s a woman!) is sent to the Crystal Moon to investigate an illegal mining operation that, of course, turns out to be much more than just a clandestine mining operation. The stated mission is clear right from the manual: investigate, collect all the crystals scattered throughout the levels, and find an exit at any opening on the right edge of the screen. Behind this terse “MISSION,” however, something broader can be glimpsed; the “Mystery of the Crystal Moon” evoked in the devlogs and promotional posts suggests a web of out-of-control experiments, haunted lunar sections, and a progression that goes beyond the simple “score points and start over.”

The game structures the action across two distinct planes. On one hand, there’s the heroine’s exploration on foot, armed with her service rifle and the various special weapons she can collect along the way. Controlling the protagonist is typical C64-style with the joystick in port 2: left/right to run, up to jump, fire to shoot, and holding down to use or interact with



environmental elements, from consoles to key points that unlock further progress. On the other hand, when the D3P-UT—the small support vehicle—enters the scene, the feel and controls change completely: left/right to move, up to use thrust, and fire to use the crystals collected inside the recharging units, as if it were a mining shuttle adapted for far less peaceful purposes.





OUR FINAL SCORE

» Gameplay 80%

An interesting alternation between the two gameplay styles and the protagonist's two "roles," although the lack of a second button option is a drawback.

» Longevity 75%

There's plenty of variety overall, but some levels tend to get a bit repetitive.

The heart of the design lies in how the game balances, level by level, the combination of mobility and firepower. The standard rifle has a slow reload and limited range and serves primarily as a foundation upon which to build upgrades. The extra weapons really change the pace: the plasma gun traps enemies in an energy sphere for a limited time, and touching them while they're trapped eliminates them instantly; the rapid-fire upgrade transforms the rifle into a medium-range machine gun; the lightning gun deals extra damage with a shorter horizontal range but some vertical reach, offset by deliberately unpredictable behavior; finally, the boomerang gun fires shots that return, allowing for multiple hits but requiring careful attention to positioning and timing. Only the basic rifle has infinite ammo, while all other weapons have limited ammo: when supplies run out, the game automatically reverts to the rifle, which may still be upgraded with the rapid-fire bonus if it has been collected.

This choice forces the player to constantly think about which weapon to use and when, especially since power-ups are reset at the end of each level. Infe2tation is therefore not a simple "run-and-gun" game where you just let the power-ups carry you to the boss, but a series of screens in which the

right weapon, used at the right moment, makes the difference between a clean run and an inevitable death in the swarm of aliens. The inclusion of a global map—accessible in-game and described in the manual with instructions on how to navigate back through the menus using key combinations—suggests a more complex progression than the original, featuring backtracking, codes, and a structure that rewards players who memorize the geography of Crystal Moon.

From a narrative standpoint, the game doesn't rely on lengthy in-game text, but instead uses intros and cutscenes that can be skipped with the fire button or—for those who prefer to jump straight into the action—skipped all at once





with the spacebar. It's an elegant solution for a title that aims to remain firmly rooted in arcade-style gameplay, without sacrificing a minimum of context. The manual does more than just explain the controls: it outlines the sheriff's mission, details the mystery of the Crystal Moon, and credits Monte Boyd as the sole creator—code, graphics, music, sound effects—with story support from Harry Boyd and testing by Louie Dimovski and Patrick Offord. It's a strong authorial imprint, which is also reflected in how the game is presented on social media: "The galactic sheriff is back to unravel the Mystery of the Crystal Moon," as launch announcements and tweets repeat. Infe2tation thus arrives on the C64 as a deliberate sequel: not simply "more levels" of the previous game, but an expansion of the sheriff's universe, with a richer structure, a more varied arsenal, and a design balance that requires the player to memorize patterns, manage resources, and make full use of every single power-up before the game takes it away.

Some aspects, however, aren't entirely convincing. For example, there's no option to play with a two-button configuration: having the jump assigned to the up direction—especially with certain controllers—often feels

awkward, and a two-button option, more in the style of a console, would have made the experience significantly more enjoyable. The exploration segments with the sheriff are well-crafted, but they tend to feel too similar to one another and, over time, risk becoming tedious.

The audio and visuals are of good quality, with the familiar "Monte Boyd-style" graphics that continue to work well and stand out. Despite these issues, the game is a pleasure to play and is certainly a title worth supporting.

by **Carlo Nithaiah Del Mar Pirazzini**





ECHODROME

Year: 2026

Editor/Developer: PixelPop

Genre: Shoot'em up

Platform: Amiga, Amiga AGA

Website: [https://](https://pixelplop.itch.io/echodrome-amigamejam2025)

pixelplop.itch.io/echodrome-amigamejam2025

Definitely arcade-style! Echodrome is one of the most interesting new arena shooters on the Amiga scene. Designed to run on OCS/ECS (with a separate AGA version), it was developed by PixelPlop for the AmiGameJam 2025, themed "Return of the Arcade." It requires only 1 MB of RAM (512 KB Chip + 512 KB Slow) for the OCS/ECS version, while the AGA version requires 2 MB of Chip RAM. It is written in C++, and development took about six months of intense work.

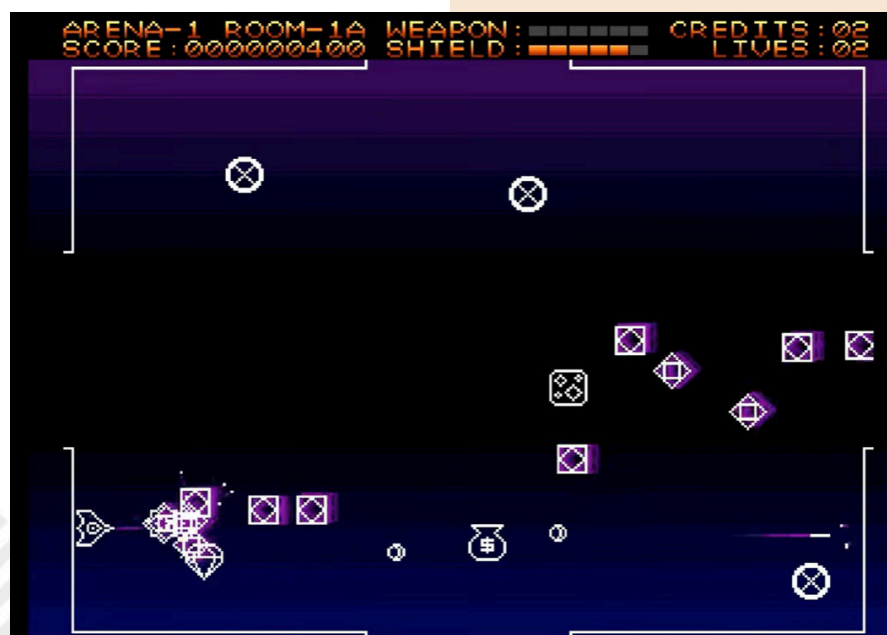
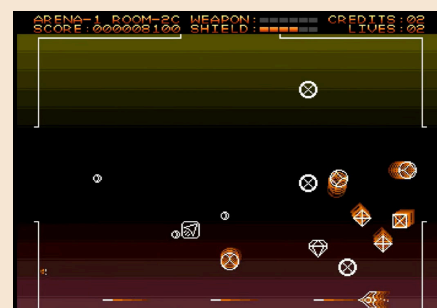
The game plunges us into the "ECHODROME," a sort of digital death arena where we must clear each room of waves of enemies to open the exit. The underlying goal is to survive, choose a path through rooms of varying levels of danger, defeat the area boss to earn a big bonus, and progress to subsequent arenas. The current version offers 9 levels plus a boss battle and, according to the author, already has a good degree of replayability.

The mechanics are reminiscent of a twin-stick shooter. You move freely around the arena, holding down the fire button to lock onto a target and fire automatically. The pace is fast, and the action is very intuitive, with continuous waves and a "just one more game" loop that many players have compared to the arcade feel of machines

from the '80s and '90s.

Enemies and environmental hazards combine to force you to keep moving constantly. Not only must you avoid contact with moving enemies, but also the mines scattered throughout the arena. Managing the risk—balancing getting close enough to deal damage while maintaining a safe distance from the mines—adds an interesting tension to the gameplay.

The control scheme is very flexible compared to the Amiga standard. You can play with a single joystick (movement + fire), with a keyboard (arrow keys to move, left Shift to shoot, customizable keys), or in twin-stick mode with two separate joysticks: one for movement, the other for shooting in all eight directions. A "Four Button (CD32 Pad Experimental)" mode is also





OUR FINAL SCORE

» Gameplay 90%

Fast-paced and engaging gameplay combined with a host of interesting controls.

» Longevity 90%

Challenging and long-lasting.

supported, which—if your setup emulates or uses a CD32 controller—provides a feel closer to modern twin-stick controls.

Visually, Echodrome features a neon aesthetic, with clear references to TRON and Geometry Wars, but filtered through typical Amiga “trickery”: advanced bitplane techniques and creative use of the copper for effects and gradients. Reviews mention a “TRON-like graphic style” and particularly praise the background gradients, screen shake effects, and screen flickering introduced in recent versions (0.11–0.12).

The OCS/ECS version remains surprisingly easy to see and, personally, I prefer it to the AGA version. On the audio front, Echodrome features energetic music that perfectly matches the game’s frenetic action.

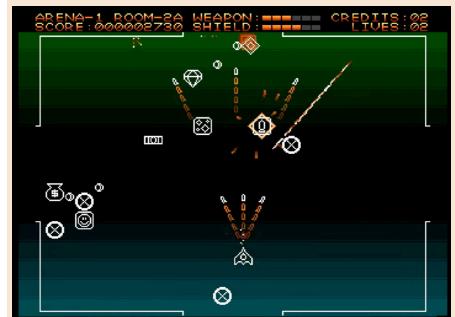
The difficulty tends to be high, but the presence of difficulty levels and the fact that the game “remembers” your progress room by room reduce frustration after dying. However, you’ll need to get a handle on the patterns, enemy priorities, and mine

layouts; so, those looking for an “old-school” arcade challenge will find it more than worth their while.

The branching room structure, where you can choose routes of varying risk, adds a touch of strategy and encourages multiple playthroughs to explore different paths.

In closing, we can say without a shadow of a doubt that Echodrome is a beautiful, fast-paced, and superbly programmed arcade game. A gem to play on the Amiga and a must-have for your collection.

by **Giampaolo Moraschi**





ALL TERRAIN GARDENER

Year: 1989/2026

Editor/Developer: Firebird

Genre: Platform/Puzzle

Platform: Commodore 64

Website: <https://www.gamethatwerent.com/gtw64/all-terrain-gardener/>

When gardening becomes a matter of life and death.

If you think gardening simulators originated with modern “relaxing” smartphone games, it means you’ve never encountered the ruthless philosophy of the 1980s. Back then, every aspect of daily life had to be turned into an adrenaline-fueled experience. Gardening was no exception.

All Terrain Gardener (also known as Sue’s Garden) is a small platform-puzzle masterpiece that was unfortunately canceled at the last minute in 1989 and only rediscovered years later by enthusiasts. And that’s a real shame, because the basic idea is as bizarre as it is fun. The game puts you in the shoes of a decidedly athletic gardener facing the worst day of his career: a sudden flood is about to submerge his beloved garden.

The game is a frantic fixed-screen puzzle-platformer: the water rises relentlessly, and you must make your way down the platforms before the ground is submerged.

The gameplay loop is as simple as it



is ruthless. Climb down the platforms before the ground is submerged, quickly dig to uproot the flowers one by one, and then run to bring them to safety in the basket at the top of the screen.

Complicating matters are the ticking clock and a host of pesky worms and





creatures ready to cost you a life at the slightest touch.

Developed in the late 1980s, the game makes the most of the Commodore 64's capabilities. The sprites are fluid, crisp, and vibrantly colored. The protagonist is animated with surprising care and moves with an agility rare for the era. To add just the right amount of tension, the SID chip plays an excellent chiptune version of "Flight of the Bumblebee."

The frenetic pace perfectly complements the reflexes required by the game.

So, to wrap things up...

by Chiara "Kika" Carrara



OUR FINAL SCORE

» Gameplay 83%

The controls are responsive and precise down to the millimeter, which is a good thing, because the game has that typical 1980s ruthlessness: if you miscalculate a jump or hesitate for a second too long, you'll end up diving straight into the floodwaters. The difficulty curve is steep, but every level you clear gives you the same satisfaction as when you manage to keep a plant alive on your balcony in August: nerve-wracking but definitely rewarding.

» Longevity 74%

Thanks to the fact that the levels unfold upward, the game avoids the monotony of a static screen: here, you climb vertically with water up to your ankles, constantly reminding you to hurry up. Sure, it's not *The Witcher*, and you won't spend the next three months of your life playing it, but the "escape the flood and beat the high score" formula is pretty addictive. It'll keep you glued to the screen for quite a few afternoons—or at least until you've saved even the last darn geranium.





BLOODSTONE

Year: 2026

Editor/Developer: ZXOnline

Genre: Action/Platform

Platform: ZX Spectrum 128k

Website: <https://epsiloncool.itch.io/bloodstone>

"Noble traveler, allow a digital knight to guide you through the shadows of a mysterious outpost called Bloodstone, forged in the indie forges of ZXOnline in the realm of itch.io. Before you cross this threshold of blood and stone, let me warn you... you will gaze upon this game with awe and wonder, and you will be amazed by its technical grandeur on your ancient retrocomputer. Let me tell you the story..."

Kamran the Fury, the youngest son of Istvan Bassar, stood on the shores of Eshvara Island. The rumors were true: Bloodstone Castle was no myth. It loomed among the twisted branches of the forest in all its grim majesty, a tangible embodiment of ancient nightmares. Its dark, ivy-ravaged walls seemed almost alive...

That was exactly how old Istvan, Grand Master of the Lightbearers and the Order of the Guardians of the Rift, had described it. Memories of his father's final moments flooded Kamran's mind. In that fateful battle, when the Darkness had nearly devoured them both, Istvan had managed to cast a unique spell on his son. Now Kamran could remain on the side of the Light even without his soul—a terrible price, paid simply to continue the fight.



Although his heart no longer beats and his soul rests somewhere in the depths of the magical web, his will remains invincible."





OUR FINAL SCORE

» Gameplay 90%

This game is a pleasure to play and envelops you with its deep atmosphere and superb aesthetics.

» Longevity 90%

Challenging and long-lasting. A perfect mix!

Blood Stone is one of this year's most anticipated titles for the ZX. It's the work of a "deadly" duo and is, in all likelihood, one of the best games ever created for this system in recent years. The two developers have created an action-platformer that immediately grabs your attention with its highly polished visuals, attention to detail, and smooth scrolling—all reminiscent of the "Russian" school of modern titles for Sinclair's beloved 8-bit system. Add to all this visual splendor an evocative narrative and level exploration. Last but not least... the stunning music!

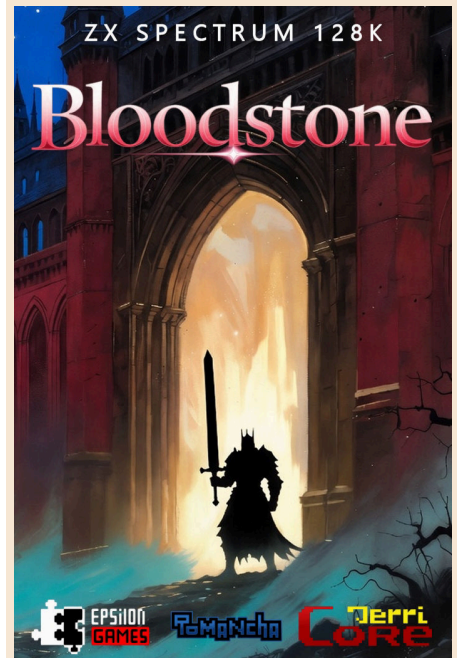
Like all modern titles for our beloved retro systems, here too we find the "old-school" approach to gameplay. No tutorials, no shortcuts... Bloodstone is ruthless, and that's exactly how it should be. Do you have a ZX 128 or a



good emulator on hand?

Well, go ahead and buy this game—it's well worth it.

by **Giampaolo Moraschi**





SONIC SPECTRUM NEXT

Year: 2026

Editor/Developer: Dave18

Genre: Platform

Platform: ZX Spectrum NEXT

Website: [https://](https://dave18.itch.io/wip-sonic-spectrum-next)

dave18.itch.io/wip-sonic-spectrum-next

Sonic Spectrum Next is an extremely ambitious and surprisingly playable port of Sonic the Hedgehog for the ZX Spectrum Next, based directly on the Sega Master System version. It confidently showcases both the power of the Next hardware and the technical maturity of its creator, Dave “dave18” Douglas.

The game was explicitly conceived as a port of the Master System version of Sonic—not the more famous Mega Drive installment—and runs by making extensive use of Layer 2 graphics to match the original 8-bit Sega in terms of color palette and definition. It follows the excellent *Astro Warrior**, a previous SMS→Next conversion by the same developer, which effectively served as a “test bed” to better understand the similarities between the two systems and tackle a port that is far more complex in terms of level design, physics, and scrolling mechanics.

Although the page still lists it as “In development,” the current build is labeled V1.0 and is a fully playable version. The update history shows rapid progress. The first beta essentially served to release a testable version, while the second introduced a properly functioning game-over sequence, a complete ending with all the emeralds, various fixes to sprite-background priority issues, and targeted work on optimizing palette transitions—which shifted from “on-the-fly” conversions to pre-calculated



palettes. V1.0 adds an options menu accessible from the title screen, includes extended keyboard support in addition to the joystick, and





OUR FINAL SCORE

» Gameplay 90%

Personally, I prefer the 8-bit version of Sonic... and seeing it on NEXT is a pleasure. It's more playable and "well-thought-out" than the 16-bit version. Excellent port!

» Longevity 90%

You know the first Sonic by heart... but it's still wonderful to play it like it's the first time!



introduces further optimizations to Layer 2 writes, reducing overhead and glitches.

The gameplay remains faithful to the Master System version, featuring the same type of horizontal scrolling, the same level layout, and physics that aim to replicate the feel of the original 8-bit Sega game, rather than the faster and more expansive feel of the Mega Drive. This is therefore not a "reimagining" of Sonic on Next, but a true port that aims to preserve the structure of the SMS title level by level, including the hunt for the Chaos Emeralds, the slower platforming sections, and the overall flow of the zones.

The control scheme is designed for both joystick and keyboard, featuring a very classic ZX layout adapted to Sonic's needs. In-game, the left/right keys control horizontal movement, while the up and down keys allow you to "peek" at the top or bottom of the screen and to crouch, just like in the Sega versions. The fire key corresponds to jumping, and holding down the down key while running performs the signature roll,

which is essential for tackling ramps, loops, and enemies with the right momentum. There's also a pause function via a dedicated key (H, "Hold"), which draws on a certain Speccy tradition while catering to a more console-like feel. Right from the title screen, you can access an options menu by pressing O—one of the specific additions in V1.0—a sign that the port isn't just a mechanical transposition but incorporates some





modern conveniences.

From a technical standpoint, Sonic Spectrum Next truly pushes the hardware to its limits, but it does so by utilizing every tool at its disposal. The heavy use of Layer 2 enables full-color graphics, smooth scrolling, and remarkably clean visuals, bringing the presentation closer to the Master System in terms of color density and background definition. In the devlogs, the developer speaks quite explicitly about the optimizations implemented: for example, the palette transitions in the Labyrinth Zone, initially handled via real-time conversions, have been replaced by pre-calculated palettes, resulting in significant speed gains and reduced flicker.

One of the thorniest obstacles is managing the z-order between sprites and the background, which occasionally causes Sonic or certain objects to end up “behind” scene elements unintentionally, revealing just how much the port is pushing the Next’s layering system and sprite logic to their limits. Dave18 himself describes this aspect as “the big problem” that needs to be addressed to make the port truly flawless—so much so that during a certain testing period, he had even forgotten to re-enable the game-over routine, playing with infinite lives to focus exclusively on technical fine-tuning.

Sonic Spectrum Next stands as a new addition to a growing Next library, fueled by ports, remasters, and original productions that aim to explore the space between nostalgia and “what-if” hardware scenarios.

It’s one of those projects that speaks directly to the most discerning retrogamers: those who love 8-bit Sega, those who own a Next or follow it closely, and those curious to see just how far theoretically “ZX”-class

hardware can go in replicating a landmark platformer. As a port of the Master System version, it stands out as a compelling and technically fascinating effort—still imperfect in some details but, precisely for this reason, worth following update after update.

by **Carlo Nithaiah Del Mar Pirazzini**





NEW GAME

CHROME HORIZON

Year: 2026

Editor/Developer:

Retroteamgames

Genre: Shoot'em up

Platform: Commodore 64

Website: <https://retroteamgames.itch.io/chrome-horizon>

"Already doneeeee?" That was the feeling I had while playing Chrome Horizon. Too bad, folks! We're probably looking at the game with the shortest playtime I've ever experienced (at least personally).

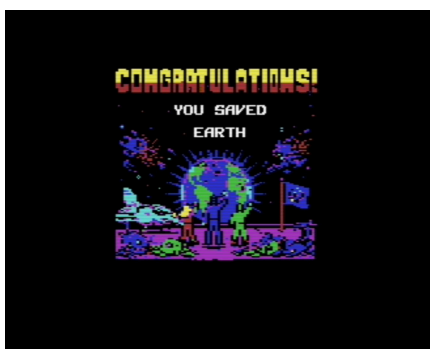
Chrome Horizon presents itself as a Commodore 64 shoot 'em up that immediately showcases ambition and technical solidity, but it's not without obvious issues. It doesn't try to reinvent the genre; rather, the intent is to bring a well-crafted shmup to the C64, and the technical polish is evident from the very first minutes. The structure is that of a classic horizontal shoot 'em up. It features all the usual clichés of classic "shoot 'em up" titles: constant forward movement, collecting power-ups, managing the support satellite, and end-of-level bosses. This simplicity works; it allows the game to focus on pacing, clarity, and immediate responsiveness to controls—three fundamental elements for an arcade game of this type. The most interesting aspect is undoubtedly the technical side. The engine is written in C using Oscar64—a non-trivial choice on a machine like the Commodore 64—and the game offers effects such as parallax scrolling, sprite multiplexing, and an overall very convincing visual presentation. It's rich with references to the past and evokes the spirit of classics like Katakis and R-Type, while remaining a standalone work. This is probably its greatest strength: it doesn't rely solely on nostalgia, but uses nostalgia as a language to build

something well-crafted.

The main drawback, however, is the limited amount of content. The four levels give the impression of a compact and effective experience, but one that's very short; for some players, this leaves them feeling a bit unsatisfied. I bought it and finished it on my first playthrough in 5 minutes... it was shockingly easy! Once you've grabbed the pod, it becomes practically impossible to die. Why? Enemies have highly predictable attack patterns, bosses often stand still and always fire in the same direction, no bullets can penetrate the pod, and the charged shot makes defeating bosses—including the final one—a matter of just a few hits.

There's still plenty of potential for the future, though. The technical execution is there, and the art direction and arcade-style feel are compelling. It's a shame that the final product feels too short and not challenging enough. Chrome Horizon is a game that deserves some difficulty balancing and a bit more content to justify its excellent technical execution.

by **Giampaolo Moraschi**



OUR FINAL SCORE

» Gameplay 70%

Simple and with a good weapon system.

» Longevity 20%

Simple and too short. Such a shame!





LUNAR 2 ETERNAL BLUE COMPLETE

Year: 1998/1999

Editor/Developer: Games Arts,
Vanguard Works

Genre: JRPG

Platform: Sega Saturn, Sony
Playstation

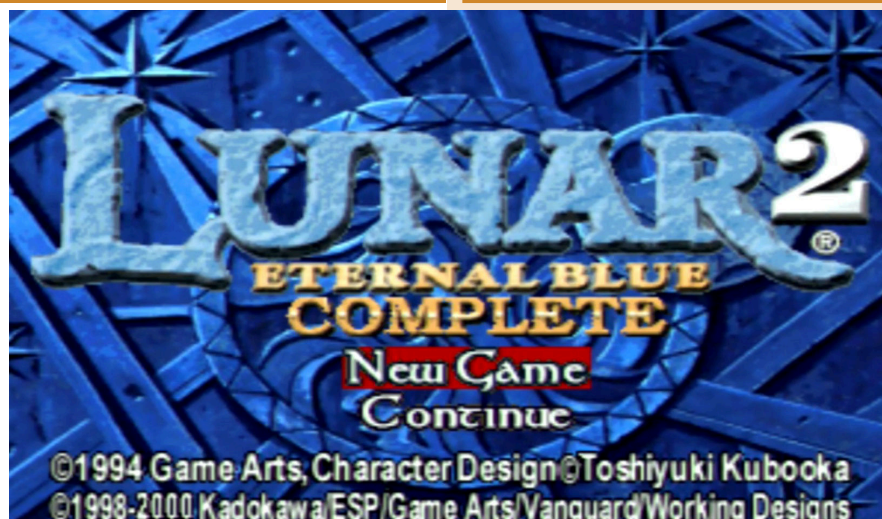
Until Working Designs released the remake of **Lunar: The Silver Star**, very few role-playing game enthusiasts had ever heard of the **Lunar** series. Those who had managed to play the titles on the Sega CD regarded them with a sort of reverence, while the rest of the public wondered what was so special about them. When *Lunar: Silver Star Story Complete* was released in 1999, a whole new world opened up: suddenly, everyone knew who Alex, Nall, Luna, Ramus, and the rest of the gang were. The Lunar story became almost as famous as that of *Final Fantasy* or *Dragon Warrior*.

Lunar 2: Eternal Blue Complete seeks to carry on the legacy left by its predecessor. Will it be able to hold its own against the wave of role-playing games that flooded the market that holiday season? The impression is that it does so without hesitation.

The Adventure Continues

Lunar 2: Eternal Blue Complete is set a thousand years after the end of *Lunar: Silver Star Story*. The world is profoundly different from before: while some cities and regions have remained nearly intact, others have changed drastically over the centuries. The blend of old and new effectively underscores just how much time has passed. The former heroes are now legends, their names remembered with awe by all the inhabitants.

The story opens with the protagonist, Hiro, and his companion Ruby, searching for a treasure in a forbidden place. They don't know that the simple



gem they're about to find will lead them on an adventure destined to change their lives—and perhaps even the lives of everyone they encounter. Old and new enemies will eventually cross paths with this new, ragtag group of heroes, and only with unwavering determination and a bit of luck will the party succeed in completing their mission.

For those who've played the original, Ruby essentially functions like Nall, with one key difference: instead of reviving party members from time to time, she simply attacks in battle,

dealing minimal damage—making her even more useless than her predecessor. As a character, however, Nall isn't nearly as entertaining as Ruby, who harbors an almost dangerous infatuation with Hiro. She even goes so far as to be rude to other girls who find Hiro cute. Some of the banter between Ruby and the rest of the cast is so well-written that it will have you laughing out loud.

The other characters are just as well-developed. Many of them seem destined to stay with the group only for a short while, but they inevitably





end up getting caught up in the grand plan to “save the world.” The party is by no means a cohesive team: the members often argue with each other, split up, and force Hiro to chase after them repeatedly when they wander off. On paper, this might seem repetitive, but it’s precisely this dynamic that gives rise to surprisingly touching exchanges and emotional moments.

None of this carries over into the battles, however, where lightheartedness gives way to the sheer necessity of survival. Once in combat, everyone fights to win. Since the main bosses—and even certain common monsters—can wipe out Hiro’s entire party in just a few turns, there’s no room for half-measures. To win, it’s not enough to be cautious, but a headlong charge isn’t a viable strategy either. Only careful planning, combined with a good balance between attack and healing, allows you to prevail in the countless, intense battles that await Hiro and his companions.

The battle menus have been revamped, introducing new features to benefit the player. The Fight, Flee, and AI commands return—the latter often proving all too effective—but the Tactics command has also been added. This allows you to set a specific series of actions for each party member to perform automatically in battle. Of course, once the battle begins, the situation may change, rendering that tactic suddenly unsuitable: in that case, you must

manually select the actions and, on the next turn, save them to a Tactics slot. Thanks to this addition, battles proceed much more quickly than in the previous Lunar, since it’s no longer necessary to select every single action each turn. To further accommodate the player, an option to disable voice lines during battles has also been included. This writer didn’t find them particularly annoying, but it was one of the most frequent criticisms leveled at the first Lunar.

Otherwise, the menus are largely intuitive. The only noticeable omission is a dedicated stats screen. Experience points are listed in the equipment menu, but numerical stats aren’t displayed unless the character is actually on the equipment screen. Sometimes it would be handy to quickly compare, for example, who has the best Magic Defense. Using the L1/R1 buttons to quickly cycle through characters partially

OUR FINAL SCORE

» Gameplay 95%

A well-written story that draws you in right away and keeps you hooked. In 2026, it’s still a blast to play, and the gameplay is still spot-on.

» Longevity 90%

Challenging but enjoyable... and this edition is packed with bonus content!





compensates for the lack of a stats summary screen, but the full-body image of each party member—typically located on that very screen—remains a feature that many players appreciate, especially considering that characters appear only as small sprites most of the time.

Visually, the graphics are decidedly old-school and have aged exceptionally well. Lunar was born in an era when sprites were the hallmark of role-playing games, and the remakes have never strayed from this approach: small two-dimensional characters against colorful backgrounds that scroll while keeping the avatar centered on the screen. During battles, the only animations are for movement, attacks, and spell effects. At first glance, this might seem far too simplistic by modern standards, and there are always those who struggle to understand how anyone could play a game like this. Yet, after just a few hours of play, many of these doubts fade away, and it becomes clear why the series has won over so many fans: instead of relying on “spectacular” graphics, Lunar 2 keeps the player glued to the screen thanks to the strength of its story and characters. In this regard, it hits the mark perfectly. The visual simplicity is also offset by an extraordinary soundtrack. The music seems perfect in every detail. If the console isn’t set up to fully utilize the hardware’s stereo capabilities, you end up missing out on one of the best video game soundtracks ever created. Working Designs is so aware of this that they’ve included a digital soundtrack in the box, allowing you to listen to the tracks at your leisure.

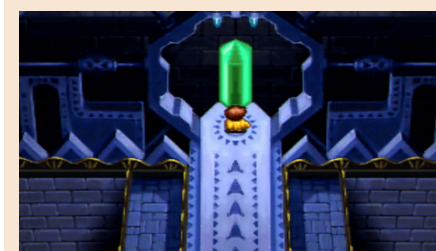
The extras don’t stop there. Lunar 2 comes with a “Making of” CD, several cardboard pop-up figurines, a hardcover booklet featuring interviews, Lucia’s pendant, and—for those who pre-ordered—a Ghaleon action figure. The behind-the-scenes CD offers an interesting look at the development

process, with interviews and trivia that any fan of the series will appreciate. Once you’ve gotten the hang of the controls, the action figure is perfect for improvising a few matches with a friend. Lucia’s pendant is surprisingly heavy and well-made: it’s a true design piece, not just a simple gadget. All of these additional extras aren’t meant to replace the fun of the game, but to enrich it with truly captivating collectibles.

Conclusions

If, like me, you love RPGs, Lunar 2: Eternal Blue Complete deserves a prominent place in any collection, right alongside Lunar: Silver Star Story Complete. The series has shown the entire gaming world that graphics aren’t everything and that there’s still room in gamers’ hearts for a story capable of warming the soul and showcasing, without compromise, the best and worst of humanity.

by **Roberto Del Mar Pirazzini**





IMPOSSIBLE MISSION III

Year: 2026

Editor/Developer: Psytronik Software

Genre: Platform

Platform: Commodore 64

Website: <https://psytronik.itch.io/im3-c64>

I made my debut in this magazine seven years ago with the solution to the first Mission Impossible, right after I picked it up again and finally solved the final puzzle of the mosaic. I had thus solved a truly impossible mission, and after years and years—having weathered the COVID-19 pandemic, the sweltering summers, and the Milanese winters that are no longer as freezing as they once were—I never would have imagined a third installment coming out nearly 30 years after Commodore's collapse. At first glance, Mission Impossible 3 might seem like a game we've seen before, but beyond the well-known difficulty and the digitized voice of scientist Elvin Atombender, there are some new features.

For example, Agent 4125 (it sounds like an international dialing code to me) can wield a blaster—a gun with limited ammo—which you'll find hidden behind various pieces of furniture. This is useful for stunning robots and solving puzzles like blocked passages. It adds some excitement to exploration, which is no longer limited to doing somersaults and snooping around every room...

The protagonist's design struck me right from the start because he looks like the stereotypical secret agent: black sunglasses and a service weapon that he finally decides to use.

The rooms are still divided into multiple floors accessible via elevators, and in each one, you must explore every piece of furniture in search of the 36 fragments of a circuit to once again stop the mad scientist from launching nuclear missiles. All of this is compounded by a time limit that

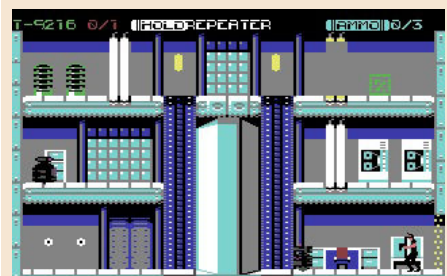
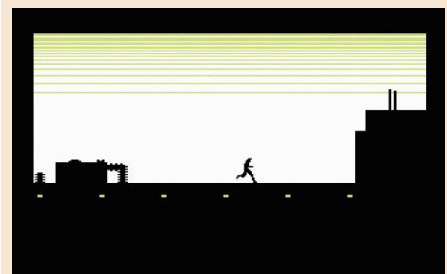
gradually decreases every time you lose a life. So avoid unnecessary fights and overly challenging rooms, at least at the beginning.

It also seems that the robots' AI has improved; after all, it's 2026—which makes sense.

Thanks to technological marvels, the number of digitized voice lines has increased, including the insults hurled at us by the scientist.

As for the graphics, it goes without saying that the animations have improved, but it's worth noting that an introduction has finally been added before you can start the actual game. I'm sure very few will have trouble finishing it, partly because the difficulty in recent games is better balanced, and the abundance of gameplay videos can certainly be helpful. Personally, I recommend enjoying it without any cheats, reliving the atmosphere of the '80s when walkthroughs were only found in magazines and, at most, from friends who'd beaten it before us—if there were any. Drawing a map would just be a waste of time, since the furnishings in the various rooms change with every new playthrough, which keeps the game interesting and ensures its longevity. I was talking to a friend a little while ago about this sweltering heat, and I was about to reply: "Don't worry, I've got a fan, a PC, an emulator, and Mission: Impossible 3 right here!" The only thing is, I don't know which of these to take with me to a desert island. Maybe all four!

by **Daniele Brahimi**



OUR FINAL SCORE

» Gameplay 80%

Improved: guns and plenty of good old-fashioned exploration!

» Longevity 90%

Have you ever played the first two Mission Impossible games?





THUNDER BIRD

Year: 2025

Editor/Developer: The New Dimension and Annwn Games

Genre: Shoot'em up

Platform: Commodore 64

Website: <https://richard-tnd.itch.io/thunder-bird>

West, amidst hundreds of enemies and end-of-level bosses. A true home computer port, however, was missing from the lineup, so many of you will be waiting for some benefactor to satisfy your needs. That benefactor may have arrived, but Thunderbird might not be exactly what we were all expecting, even though there are quite a few similarities; in fact, in this game you'll play as a young Lakota woman seeking revenge for the murder of her family at the hands of those trigger-happy white men in hats who think of nothing but drinking and playing poker.

Thunderbird is a side-scrolling platformer divided into three acts, each of which is quite tough and challenging. You'll encounter many cowboy enemies firing at you from multiple angles, as well as obstacles like rattlesnakes and the famous bulls that you'll surely remember from the aforementioned arcade game. All of this is set against the backdrop of a Wild West town, where we'll begin our quest for revenge, before moving onto a long, moving train, all the way to the locomotive to defeat the boss of the moment. Finally, in the last act, we'll have to face the evil spirit responsible for it all.

Sound-wise, you'll hear nothing but gunshots (after all, in the Wild West, what else can you hear in the middle of a shootout?). It's worth noting, however, that the loading screen of the cartridge version reminds me a lot of Ocean titles, with that beautiful music and the title image. Like any self-respecting platformer, the

precision of your jumps and shots is down to the millimeter: the slightest shift can make all the difference—for better or for worse. Remember, though, that the protagonist's gun can fire two shots at a time, at two different angles. Once you get the hang of it, you'll be the fastest gun in the West. Plus, you'll have five lives at your disposal... perhaps enough to make it to the end of the game.

Two small details in this game really made me think. The first: the protagonist is a woman in a predominantly male setting. I see this as a great example of gender equality, and it seems right to me, given that in recent years a significant percentage of female gamers have taken up gaming. The second: this isn't the classic, stereotypical "cowboys versus Indians" game, where you already know who the bad guys are—it's actually the exact opposite: a Lakota woman fighting the cowboys for a just cause. As a result, some might exclaim, "Justice is served!"

NdFF: Thunderbird is a game that participated in the 2025 C64 SEUCK Compo, winning second place.

by **Daniele Brahimi**



OUR FINAL SCORE

» Gameplay 70%

A precision platformer that never gets old, even after numerous attempts.

» Longevity 75%

It's not easy at first, and it takes some time to get the hang of it—but thanks to that, it won't be forgotten anytime soon.



The War for the Micros (and the End of Fantasy)

December, mid-1980s. It's cold outside; the heat and smell emanating from the cathode-ray tube in your room are clearly noticeable. By the light of a desk lamp, your fingers flip through the pages of your favorite magazine. If you were between 12 and 16 years old at the time, preparing for Christmas wasn't about trees or nativity scenes, but about comparison charts. By now you've made up your mind: it's time to replace your first microcomputer, your companion through so many afternoons.

So keep an eye out for the ads, technical articles, and reviews of the many new computers hitting the market just in time for the holidays. What to choose? A boring PC clone or brand-name model, or an Apple Macintosh? Too expensive? Then how about a Commodore 64 as the natural successor to the Vic-20? You'll definitely need the 1541 disk drive, too. An exotic Atari 800XL/XE? And where would you even find the games? A Sinclair QL—elegant and innovative—a true quantum leap from the ZX Spectrum, which used to heat up your bedroom just with its power supply. And what can be glimpsed on the horizon? Ah yes, the 16-bit platforms from Commodore (Amiga) and Atari (ST) are paving the way for the “revolution” with graphical interfaces, dedicated graphics and sound chips, and expansion ports. Still too expensive, but the future was already set in stone. And there were still so many brands crowding the pages of the magazine: Amstrad CPC, MSX in all its forms, Olivetti, Thomson, Oric, Acorn, and so on.

The truth? You didn't choose a computer based on the CPU's megahertz frequency or the amount of RAM. In the end, you bought the computer that your classmate or neighbor had. We didn't know much about hardware components, but we knew that hardware without software is just an expensive paperweight. The home computer ecosystem of the time was based on a cornerstone principle of youth culture: borrowing or copying cassettes and floppy disks during recess.

The Invasion of the Clones and the Extinction of “Biodiversity”

Then, slowly but with the ruthlessness of an ice age, computing “biodiversity” went extinct. All those custom chips, those ingenious and quirky architectures, those form factors ranging from rubber keyboards to steel blocks, gradually faded away. Companies stopped innovating and fell into line to all do the exact same thing: the gray, IBM-compatible box. Compromise won out. The ability to share a text file or a photo without having to convert the format using three different programs and two prayers won out. Today we no longer choose our hardware: we have three operating systems on three boxes that, deep down, are all alike. Was that a good thing? In practice, yes—it simplified our lives. Was it exciting? Not in the least.

In an alternate reality reserved only for enthusiasts, what would have happened if the market hadn't become a monoculture? Amiga, having become a brand in its own right after splitting from Commodore, evolving its proprietary chips to become the absolute standard for video editing and professional 3D graphics, powered by 128-bit Motorola processors. Sinclair transforming the QL line into elegant, incredibly powerful, and affordable business workstations. The Italian company Olivetti, which, instead of chasing after IBM PCs, insisted on creating a third European path to personal computing with Compasso d'Oro-winning industrial design. The MSX consortium dominating Asia and Europe by integrating cutting-edge Japanese hardware. With a clear head, what would we early-day nostalgics have truly preferred?

Perhaps we don't want a modern world full of incompatibilities. What we truly miss is the wonder of the unexpected. We miss opening a print magazine in December and not knowing what the engineer on duty would have come up with to fit the color graphics into 16 kilobytes of video memory. Today we have GHz by the bucketful, terabytes in our smartphones, and graphics cards that consume as much power as an air conditioner at the equator. But that feeling of holding a unique piece of the future in your hands—one different from your friend's or colleague's... well, that's stuck there like a read error between the sectors of a 5¼-inch floppy disk.

David La Monaca

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