In 1989, Janusz Pelc wrote the game Robbo on an 8-bit Atari, one of the first personal computers, which enjoyed a cult-like status in Poland before the fall of the Berlin Wall in 1989. Robbo, a small robot, collects screws and has to get through 56 planets. The game has achieved cult status, spawning hundreds of remixes and modifications. Beginning in the 1980s, fans (once mainly young boys, today adult men) played this game, collecting screws and running away from enemies such as bats, flying eyes, devils etc., while drinking beer, smoking cigarettes, eating crisps and telling jokes. One of the places where you play Robbo are the so-called demoparties, which gather computer geeks, technology nerds and fans of old computers. They are the heroes of Robbo. Walkthrough (2018), the first computer generated book published in Polish as Robbo. Solucja.

The game’s basis is a text generator with soundtrack, made using technology original to the Atari. The concept and text was created by Piotr Marecki. The project was presented as part of the wild compo during the demoparty Silly Venture 2017 in Gdańsk. The program lasts 56 minutes and generates walkthrough for the 56 individual planets. However, it is looped, so it generates an inexhaustible amount of solutions, one of which contains a published book. All of the elements of the work – text, music, code, composition, as well as graphics – were created by Polish Atari enthusiasts. It premiered at the Atari-themed party and are being distributed among retro computers enthusiasts.

While Robbo generator can be regarded simply as an entertainment or a joke, its authors believe that it also comments critically and playfully on computational obsolescence. The practice of returning to the discarded and dead (or “zombie”) media, in this case the Atari computer, is one challenge to the seeming inevitability of technological acceleration. This essay describes the history and making of Robbo. Walkthrough and provides a critical commentary on the value of “zombie” computing.
Robbo. Solucja (Marecki and Bociański 2018) is not an ordinary book, although at first glance it looks like one. It has a title, authors, pages, a cover, spine and ISBN number. Inside it has text. Despite all these traditional aspects, it has several elements that make it unique.

Robbo. Solucja is an analog book; however, it was generated on an 8-bit Atari computer, which is treated like a “zombie” computer: dead commercially, but revived by fans of the platform (Hertz and Parikka 2012). It contains the code of a program written in Mad Pascal and presents one of the possible variants of the text it outputs. The author of the code [https://gitlab.com/bocianu/GSR] is Wojciech Bociański. I, in turn, was responsible for the input data from which the algorithm randomly generated the final version of the book.

However, book publication is just one of the modes of functioning of Robbo. Solucja in the media universe. The nature of this work is that of a media hybrid—it was designed for both digital and analog media.

Indeed, Robbo. Solucja is also a text generator, that is – according to Leszek Onak’s definition – a literary machine “that creates dynamic textual compositions using a set of rules to process input data” (Marecki 2018). As such, it belongs as a genre to the field of electronic literature. Digital space, unlike print, allows for generating an infinite number of end results in the form of text strings using the algorithm.

Photo 1: Piotr Marecki, Wojciech Bocianu Bociański, Robbo. Solucja generated on the Atari 65 XE. Photo credit: Piotr Marecki.
Robbo. Solucja functions as an example of digital creativity in yet another dimension. The work was presented live as a wild demo at the Silly Venture 2k17 party in Gdańsk – the text generator we were working on with Wojciech Bociański (known on the Atari scene as “Bocianiu”) was shown accompanied with music by Lisu (created in Raster Music Tracker). [Link to recording of English version: https://www.youtube.com/watch?v=KJNpkf3nVyw]

The first part of the title refers to the game Robbo (1989), considered the most iconic Polish production created for the 8-bit Atari. The second part references a genre popular in the field of digital media – the walkthrough (in Polish – solucja), meaning a text describing how to finish a game. Hence, both the above-mentioned demo and book constitute an attempt at describing the walkthrough of the iconic Robbo. However, the twist is that the reader who decides to play Robbo using the tips given in these works will quickly fail. This is because the work is a literary (not to say: absurd) version of a walkthrough.

The book itself was also created in a rather unusual way. The text generated on the 8-bit Atari computer was rewritten into a text editor, and then typeset by Atari expert user Piotr Mietniowski (nickname “Kroll”) using the Calamus program created in 1987 for working in the Atari ST / TT environment. All elements of the work, including text, music, code, typesetting, and graphics, were not only written by Atari enthusiasts, but also shown for the first time at an Atari event and distributed among enthusiasts of retro computers.

A reader skeptical of this experiment could ask about the motivations for carrying it out at all, pointing out a few issues. First: why was the book generated on the Atari, which has been a commercially dead computer for several decades? Second: why would one devote interest to a game on a platform that has long been out of use, and write a walkthrough to it? Third: why produce books that are computer-generated? Fourth: why is the book typeset using an old program and old computer, if the contemporary DTP industry has gone so much forward and offers more advanced tools that better meet current standards? This article reconstructs several contexts of the creation of the work, at the same time attempting to answer such questions.
Why Atari?

In the FAQ tab on Atarionline.pl, one of the websites devoted to the Atari computer, Krzysztof “Kaz” Ziembik explains this platform in a very accessible manner:

For some, Atari is the American company very powerful in the 1980s, for others it means its home computers, millions of which were produced from the late 1970s to the mid-1990s, for others yet it constitutes a symbol of the [then-]emerging market of video games and consoles. But Atari is also the atmosphere that arose around the company and the users of its equipment. It is the countless anecdotes and stories about wars fought with the rival Commodore company, about the devastating defeats and joyous triumphs of the Atari company, about setting new standards in the computer market and disappointing marketing failures, about amazing hardware constructors, genius programmers, and teenage fanatics, and, finally, about the personal experiences of anyone who had come across the magic logo in the shape of Mount Fuji (Ziembik 2007).

Atari played, and continues to play, a special role in Polish computer culture as well as creative programming in the central and eastern European region. Poland is often named as “the Atari Empire,” regarding both past and present. It is in Poland that the largest Atari party gathering the platform’s fans from around the world is organized, Silly Venture in Gdańsk. Poland is also home to a very large group of fans (estimated 4000) of this platform, which has been commercially dead for several decades. It is also the only country in which works on the Atari are produced in such numbers.¹

¹ For example, 115 new works for Atari computers and consoles were presented during the 2017
The Atari computer – alongside Commodore 64, ZX Spectrum, Amstrad CPC - is an iconic 8-bit computer, a symbol. The role of these platforms was significant also in the cultural sense. There are several reasons why this occurred. First, the above-mentioned platforms were the first personal computers that became widespread in users’ homes and could be used for various purposes: education, entertainment, and creativity. Programs, games, music and literary texts were created using them. In addition, in some regions of the world some computers became more popular than elsewhere. One factor that determined this was the level of affluence of their inhabitants. Atari became the most popular in Poland. This is important because often the first contact with a particular computer leaves a mark in the user’s memory and contributes to shaping their idea of a computer in general. In the context of the discussed phenomenon, it would seem that people who in the 1980s became for the first time the owners of computers of a given brand still identify with this brand (although it does not have to be—and obviously is not—a rule without exception). Even though later, as technology developed, people who started with Atari or Commodore switched to more advanced machines, the first platforms often remained for them, in a certain way, “the ones.”

In the book *Bajty polskie* Bartłomiej Kluska and Mariusz Rozwadowski write:

In 1991, the eight-bit Atari remains the most popular computer among players in our country, as confirmed by the results of a survey conducted among readers of the magazine [“Top Secret”]. Almost half of them still used the Atari. Almost 1/4 – Commodore. Less than 10% – Spectrum. Only in the fourth place of this classification was Amiga (less than 7%), in the fifth – PC (only 3%). (Kluska and Rozwadowski 2014: 117).

Silly Venture party in Gdańsk.
It should be explained that calling Poland an empire of the 8-bit Atari was at that time, to quote Kluska and Rozwadowski, “evidence of the technological backwardness of the Poles” (Kluska and Rozwadowski 2014: 117). When the Atari was experiencing its heyday of popularity in eastern Europe, the world had already moved on to more advanced machines that offered greater possibilities, like the Amiga or PC. However, this local delay in comparison to the developed world had its positive and productive aspects for the platform itself. As the West abandoned Atari computers in the mid-1980s, Atari celebrated triumphs in Poland. It is around the Atari that a digital culture on a scale unprecedented for other platforms is born in this region of the world. It is also around Atari that gathered a strong group of “demosceners,” that is, computer users who use a computer for creative purposes and demonstrate the possibilities of a given platform. Enthusiasts of the platform compete to outdo each other in the production of demos, games, mags, etc. Many of these projects surpass what had been hitherto accomplished on the platform, including by professional international software producers. As it happens in the world of digital media, these productions are not necessarily original. On the demoscene and in the world of games, copying or appropriating ideas—including from other platforms—is prevalent. In the minds of fans “Atari” begins to designate to something more than the company that produces them. It becomes, as Ziembik phrases it, “not a soulless machine, but the memory of childhood, a flashback from the beginnings of the computer era” (Ziembik 2007). To put it even more radically: Atari becomes the very idea of a computer.

**Why Robbo?**

The computer’s iconic status is expressed through the reverence of fans for texts written on it, including games, demos or interactive fiction. Sometimes they are almost worshiped by them, and users spend months and years playing or viewing particular works.

As a result of the particular popularity of the 8-bit Atari in Poland, which served mainly for entertainment purposes, was the phenomenon of writing games. Polish games were usually designed for the local audience, if only by reason of the aforementioned commercial death of the platform in the West. Another phenomenon was a lack of professionalization. Games were created by enthusiasts at home, often outside large urban centers. What is more, games written on the Atari, which we are used to perceiving as commercial goods today, were also created in a very special period, characterized by a specific approach of creators to copyright restrictions (Kralka 2016). Robbo, a game widely recognized as the best and the most-often-remade Polish production in this field, is a good example of these aspects. Robbo is also an exception, because it gained great popularity in the West and was ported to many platforms. Krzysztof “Kaz” Ziembik in the above-quoted text from Atarionline.pl, when writing about the possibilities offered by the Atari computer, romanticizes: “Let your imagination
break loose and traverse the entire United States in _Road Race_, fight off another invasion in _Zybex_ or free _Robbo_ from countless traps” (Ziembik 2007). It is worth noting that in the short form of the FAQ the author mentions two classic world games and one local. And no one would dare deny this status, because _Robbo_ has a permanent and unique place in the history of Polish gamedev.

_Robbo_ was released in 1989 by Laboratorium Komputerowe Avalon, a company based in Strzyżów in the Podkarpackie Province of Poland. The professionalism of the production, however, was such of such a high quality that many did not believe that the work was made in Poland. The creation of the game was shrouded in legend. It was believed that this was another western project cracked by a local hacker. In fact, the program was written by the teenage Janusz Pelc. He achieved the feat in just a few months – while preparing for his end-of-high-school exams, and went on to establish the company together with a friend from school. Like many works created for the home market, the game was not entirely original, as it borrowed and developed ideas from _Boulder Dash_ and _Sokoban_. However, the uniqueness of the game consisted in the fact that --as its fans claim--it by far surpassed the originals.

In “Tajemnice Atari,” a magazine published by Avalon, we find the following summary of _Robbo:

According to the legend of the game, its hero - a small robot - has been imprisoned in a hostile planetary system and to free itself from it must travel a long journey consisting of 56 planets, divided into stages. Each stage contains four boards. At the beginning of the game, we have 9 robots, and in each stage we can obtain one additional “life”. If we lose all robots, we do not start the game from the beginning, but from the first board at the given level (Tajemnice Atari 1991).

Immediately after release, users started cloning, remaking and supplementing the game. Later also collector’s editions and parodies were made. Today, on sites devoted to retro gaming, one can easily find countless levels of _Robbo_ with new planets containing new difficulties for the small robot to overcome. This development in the history of this production was made possible by the creators themselves, who in 1990 released _Robbo Konstruktor_, a tool allowing users to create their own versions of the game with a maximum of thirty two boards. A modification that was considered particularly spectacular was _The Convicts_ by Witold Gantzke (1992), which was a two-player version. Some authors approached _Robbo_ in a more creative way. One of the authors of the game Alex (1992, by Bogusław Konafel and Radosław Popławski) a 112-level expansion of the original _Robbo_, describes the period of popularity of the robot:

After a few weeks the new _Robbo_ (I think I gave it the working title “second edition”) was being sold on computer marts. But it was such at that time the number of enthusiasts of this game grew dynamically and soon it was impossible to recognize which _Robbo 3_ was made by whom and if the mark “3” referred to this or that program. That is why I gave up such modifications and managed to persuade Radek Popławski to collaborate. I drew new boards, coded them into the original _Robbo_, tested, corrected, and Radek worked on improving the program in which

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these boards were to be displayed. After several attempts and tests it turned out that we can fit in as many as 112 boards! And so--one thing leading to another--we agreed with Radek that we would call the new game Alex [Ziembik and Kornafel 2014].

What is more, the popularity of the game does not end with the glory days of Atari in Poland. After almost three decades since its launch, creative remakes are still made. One of the most spectacular remakes is the work Robbo Forever by Janusz Pelc, Paweł Różański, Krzysztof Ziembik, Marek Gorczyński, Piotr Świerszcz, Poklik, Nosty, Pepax, Cosi, Gedzior, Golem XIV, Kaczor, Kaz, Larek, Marok, MWK, Nick, odislaw, Piotr Wompel, Robin, Sikor, Yosh, Ymorfeusz (2009) made to mark the 20th anniversary of the original. Kaz, the spiritus movens of this undertaking, explained the idea of organizing a competition for new boards as follows:

Over the years several people had wanted to organize such a competition, but the fact that copies of the original board-making program were unstable hindered these enterprises. It was only when one of our colleagues (Poklik) responded to our call and wrote his own program for editing levels that the competition could happen. It turned out very successful – more than a hundred boards were submitted. In the end, after a vote and jury deliberations, we included the top 59 boards (“tbxx” and Ziembik 2009).

Robbo Forever was released both as a collector’s edition and online. The game has a twist – the authors organized the boards against the usual trend, arranging them from most difficult to easiest.

It is not possible to list all of Robbo remakes in this paper, or even to mention all the significant ones. Even a cursory review of several magazines devoted to Atari allows to constantly come upon games that reference Pelc’s iconic work in their descriptions. For example, in the first issue of the “Atarynka” magazine from 2002 (published long after Atari’s golden age), we find a review recommending the purchase of the game Cyborg (1994) by Robert Szurała, Mariusz Zając (programmers), Robert Szurała, Mariusz Zając (graphics), Michał Szpilowski (music), which reads: “The basics of the game are similar to those of the famous Robbo, no need for advertising!!!” (Atarynka 2002: 15). In 2016, while working on the spectacular game Laura for the 8-bit Atari, its creator Arkadiusz “Larek” Lubaszka gave an interview in which he said: “I made a simple game based on Boulder Dash and Robbo with some elements of one of my own games - Hektor. A simple project became a megaproject, in which some of the top 8-bit Atari artists participated.” [“Repip”, “RetroBorsuk” and Lubaszka 2016]. Interestingly, the game Hektor (1999) mentioned by the artist was itself also based on Robbo.

Hektor is also a good example of remix that “betrays” the original. In this autothematic game, the concern is no longer saving the robot lost in cosmic space. In Hektor it is important that the robot is the Atari or other 8-bit platforms. An important role is played by the scroll, because it is from it that the player learns that their goal is to control the robot so as to “collect all the processors scattered throughout

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the entire planet during an explosion.” They can collect, for example, an Intel Pentium II (which “may be useful”) but also others that do not have names (“it’s not ours, but take it”) as well as processors for ZX Spectrum (“where did this come from?”) or Intel Celeron (“who needs this?”) In addition to the processors, there are also floppy disks, for instance, a 5.25 disk (“take it, you cannot buy them anymore”), the Atari mouse interface, and so on. There is also a manual for the Sony TV. When the robot collects the scattered screws, the scroll shows the message: “This is not Robbo! You are to collect processors.”

A year after Hektor, the monochrome Glut, a joke or parody game, was created by Krzysztof “Kaz” Ziembik and Poklik. This is yet another modification that changes both the title and the main character (instead of the robot, a devil), as well as the collected items (instead of screws, bottles). The authors describe their version of Robbo: “Glut [Polish: “the snot”] arrives from the depths of the cosmos and is highly monochromatic. He travels through planets and breaks into people’s homes. He pillages, murders, and above all, collects empty old bottles.”

Robbo transcended also to other platforms (PC, Linux, Commodore, Atari ST), it was ported to Java (and thus can be used on mobile phones). In 2017 a demake appeared – a version of Robbo Mechanik ported by Altair to the Atari 2600 console.

The few described examples demonstrate how Robbo and its modifications became, in a certain local model of games for the users of the 8-bit Atari, perhaps the most impressive in the sensitivity of the Polish players using this particular platform. This fact and the simplicity of the game were the starting point to writing the generated walkthroughs to Robbo.

**WHY WALKTHROUGH IN BOOK FORM?**

The contents of the book are sentences generated on the Atari 65 XE computer, and written down manually. It is one of the many versions that are produced when running the program. If one would want to assign Robbo. Solucja to a genre, it should be said that this is, as I mentioned at the beginning, a text generator.

While Poland was and remains an Atari empire, it would be difficult to defend a thesis about its empirical status in the area of text generators. Leszek Onak, who researched local literary algorithms for the scientific project “Creative programming” at the Ubu Lab at the Jagiellonian University, underlines:

> While working on the collection, I found about fifty digital works the operation of which is based on generativity. I discovered some examples from before the political transformation [1989], a dozen or so from the demoscene and first personal computers, but most of the Polish representatives of the genre appeared after 2010 (Marecki 2018).
Text generators are a genre of electronic literature. Their characteristic feature is that the author of the algorithm does not write the final text (which is created through running an algorithm), but authors its constituent elements and the methods for their processing. Onak explains the principle of operation of generators: “Literary algorithms have a performative character. Their final effect is not given in advance. It is created and ‘occurs’ before the reader’s eyes or with their active participation.” Onak also uses a picturesque comparison to describe how a text generator works:

Imagine a machine that has a digestive system and two holes: a mouth-hole and excretory hole. We feed the machine with words and phrases, it decomposes them, combines them and excretes them in the form of processed text strings. A generator is a machine that excretes digested text. […]

In the case of generative literature, the swallowed content is digested. You swallow a concrete mixer, a coat and yoghurt, and you obtain a Christmas tree shaped like a construction device that tastes like a coat and is the color of yoghurt. The task of the producer of the literary algorithm is to program the functioning of the digestive system and prepare textual food for the machine.

Digestion and excretion take place before the eyes of the recipient.

Robbo. Solucja, a text generator, was targeted to demoscene recipients associated with the 8-bit Atari. Therefore, the authors of the wild demo and book were interested in creating a text and form that would be understood first and foremost by a certain specific community: demosceners and fans of the 8-bit Atari, as well as the broader group of Robbo players. The starting point was the idea to create a minimalistic textual work, not necessarily meant to be read in full, which would thematize the process of spanning across time. In this case, Robbo was used as a simple game that engaged thousands of people that spent years shooting and tilting the joystick up, down, left and right.

The idea to use the form of walkthroughs was inspired by viewing walkthroughs for the game available on YouTube. None of the many fans who posted their Robbo walkthroughs chose to comment on the game’s story or narrative in voiceover, which is common in walkthroughs to currently produced games. It can be assumed that repetitiveness was the main obstacle to doing so. Such commentary would inevitably have to sound like: “Go up, go down, shoot, watch out for the devil, watch out for flying eyes,” and so on.

Robbo. Solucja is therefore a radical reinvention of walkthroughs to simple 8-bit games, which usually intentionally avoids verbalizing the player’s actions one by one. This is why the generator is based solely on text, emphasizing repeatability and duration. Robbo. Solucja is a generator that produces an infinite number of nonsense descriptions of the game. The work lasts 56 minutes and consists of 56 boards—one for each planet, as in the original Robbo. However, it is looped, so it will keep repeating until the user turns off the computer or emulator. The repetitiveness and repeatability is also emphasized by Lisu’s music. It should also be added that the work is not designed for
continuous viewing or reading, but for working in the background, acting in a way like ambient music, which is not listened to, but which simply fills the environment.

Between the boards with the generated text there are interlude boards with comments about Robbo from the YouTube platform. Together the comments constitute a collective affirmation of the game’s iconic status and a testament to how many people played it. Atari users will find in these texts a confirmation of Robbo platting rituals.

In the textual layer there are also a few elements added as Easter eggs or inside jokes understood by demosceners using the 8-bit Atari, who, according to (auto)-stereotypes of the scene culture, enjoy alcoholic beverages. Those who have experienced an Atari (and in general, a demo-) party in person will easily grasp some of these codes.

There are many text generators created worldwide. Most of them function as digital works. They are either published online or produced as apps to be installed on phones or laptops. Some also require to be run from the computer terminal. The vast majority of authors of literary algorithms use contemporary programming languages and popular platforms. Robbo. Solucja goes against such trends being a digital work written on a commercially dead platform.

**Why text-generator?**

In order to understand how Bocianu’s generator works, one should analyze the way input data is grouped in the program. Commands written in imperative mode, characteristic of a walkthrough, were divided into groups:

Group 0 – sentence beginnings, including:

- Tilt the joystick
- Take
- Watch out for
- Shoot
- Put it down
- Run away in the direction of
- Open
- Aim for
- Enter
Group 1 – endings to sentences starting with the first of the beginnings (‘Tilt the joystick’), including:

– up.
– to the right.
– down.
– to the left.

Group 2 – endings to sentences starting with the second of the beginnings (‘Take’), including:

– a sip of beer.
– another sip of beer.
– a screw.
– ...

And so on – until group 9:

Group 9 – endings to sentences starting with the ninth of the beginnings (‘Enter’), including:

– into teleportation.
– into double teleportation.
– inside the capsule.

Which is followed by a special Group of “rare sentences”:

Group 10 – rare sentences:

– Move the box.
– Press fire.
– Block the laser’s flame.
– Change music.
– This thing resembles a penis, but it’s not a penis. It’s a cartridge. Pick up the cartridge.
– Say some vulgar words to describe the flying eyes.
– Block the laser’s flame.

The program created by Bocianu for generating text is analogous for all planets. The diagram for one of them is featured in Figure 1 below.

![Diagram](image)

*Figure 1: Author credit: Bocianu.*
If the process of generating text were not limited by additional special rules, the end result could look like: “Watch out for the magnet. Watch out for the magnet. Watch out for the magnet. Put away the bag of chips. Put away the bag of chips.” “Rare sentences” would also repeat one after another, for instance, the generator would produce an output like: “This thing resembles a penis, but it’s not a penis. It’s a cartridge. Pick up the cartridge. This thing resembles a penis, but it’s not a penis. It’s a cartridge. Pick up the cartridge.” In order to prevent this, rules shown in the block diagram (Figure 2) were implemented.

Figure 2: Author credit: Bocianu.
WHY COMPUTER-GENERATED BOOKS?

The authors of some text generators, which are, after all, digital-born works, sometimes also use the medium of the book as the ultimate medium for their work’s content. Nick Montfort, a professor at MIT and the author of several text generators, keeps a catalog of books generated by computers. It includes works from around the world (Montfort 2018). At the time when this essay was written (January 2019), the list contained 74 works, including books from many cultural backgrounds.

There are few computer-generated books in Polish. A pioneer of generating text and publishing the end result in the form of a book was Wojciech Bruszewski, the author of the *Sonety* (*Sonnets*, 1992) generated using the Amiga computer. Bruszewski wrote a program that produced works in a non-existent language. The author intended to imitate the Polish language - the generated text in terms of word length and order bears similarity the author’s mother tongue. The artist usually presented the process of generating sonnets as a performance. The Amiga computer stood in a gallery generating text, which was then printed on computer paper by a dot-matrix printer. As a result of these performances new collections of sonnets were created and titled after the locations of gallery venues: *Sonety Lipskie* (*Leipzig Sonnets*, 1992), *Sonety Wrocławskie* (*Wrocław Sonnets*, 1993), *Sonety Budapesztewskie* (*Budapest Sonnets*, 1996). For the artist’s bio and the full list of works see (Wojciech Bruszewski 2014). Bruszewski also produced individual copies of the book with the generated text. When the artist, who was affiliated with the field of visual arts and demoscene, was being invited to show his works only in galleries, he wrote to his curators: “I intend to stage a coup in literature, not in visual arts” (Dziubałtowski and Bruszewski 2007). In 2016, Les Figues Press, a US-based publishing house based in Los Angeles, published the book 2x6, which contains stanzas generated in Python in six languages, one of which is Polish, alongside English, Japanese, Spanish, Russian and French. Through simple three-line stories, the work undertakes the problem, among others, of expressing gender in the grammar of a given language. Although the authors departed from the same original work in English, they arrived at different results, depending on their language. The work was on shown during an exhibition of computer-generated books organized at the Massachusetts Institute of Technology (M.I.T. Libraries 2018). The decision to print a computer-generated book is usually accompanied by some deeper idea. For example, Nick Montfort’s *World Clock*, published in English (2013) and Polish (2014), is a digital-born work written entirely in Python. The American author was inspired to create this generator by a text by Stanislaw Lem titled *One Human Minute*, in which the Polish writer reviews a non-existent book depicting sixty seconds from the life of humanity. Montfort, who tried to implement Lem’s idea with the help of an algorithm, that is, to generate a text about one minute in the life of humanity, chooses to use the book medium for this work, because Lem also described a book in his review. Therefore, in a way, Montfort materializes Lem’s concept.
Bruszewski’s work was not written in Polish. *The World Clock*, although published in Poland, was a translation of another algorithm. And *2x6* is a six-language work published by an American publishing house. It thus appears that *Robbo. Solucja* might be the first computer generated book written in Polish and published in Poland.

**WHY CALAMUS?**

*Robbo. Solucja* was first presented during Silly Venture 2k17 in Gdańsk, the largest Atari party, as part of the wild compo competition, a category for presenting works that do not fit into traditional demoscene categories like demos or intros. The work was, naturally, presented from the original 8-bit Atari.

However, the Atari was vital not only for the digital version of the work. The creators went further and decided to publish a book version containing a sample version of 56 walkthroughs. It was decided that also the making of the book would be Atari-oriented. Piotr “Kroll” Mietniowski, a Kraków-based fan of 16- and 32-bit Atari computers, and owner of original *Calamus* software, offered to help with the process. It should be underlined that *Calamus* is considered an iconic DTP program created in the Atari environment. The Polish online encyclopedia dedicated to the Atari, Atariki, begins the entry for *Calamus* with the statement “A legendary program.” [Calamus]. *Calamus* distinguished itself among other DTP programs with its small size (only a few hundred kilobytes) and large possibilities. Its main advantage was its modular structure and vector-based description of the layout and typesetting, including fonts, which greatly sped up work, giving it a significant advantage over other programs from that period (1990s, 2000s). It was used not only for designing magazines for fans of the Atari computer like “ST Fan” and “STE Fan,” “Desktop Info,” or “Atari Fan,” but also other publications.

![Figure 3: Screenshot from Inkaus. Author: Kroll.](https://scholarworks.rit.edu/jcws/vol4/iss1/5)
The program is still developed today. Currently the rights to Calamus are owned by Invers Software, which is responsible for its new versions. Piotr Mietniowski “Kroll” used a version of Calamus installed on Atari TT on the license “Calamus SLC 2015 – Complete Edition,” owned by the typesetter himself. The typsetter is also the official distributor of Calamus for Poland. When asked about his attitude towards the program, Kroll answers:

My fascination with Calamus began in 1991, when I acquired an Atari ST computer equipped with 1 MB RAM memory and an Atari SM 124 monochrome monitor. It was thanks to the small size of the program that it was possible to work with this configuration. In addition, simple use, great visual clarity [of the interface], and, above all, the possibility of working with vector graphics and fonts impressed me greatly. Subsequent versions, i.e. the appearance of the SL version and work with color only reaffirmed this impression; in addition, full modularity, meaning the possibility of quickly loading chosen modules to memory and using them, enabled amazing opportunities for users working on computers equipped with less operational memory (Mietnikowski 2018).

Another program used for processing the text was Inkaust, a Polish text preprocessor (spelling and grammar in accordance with Polish standards), written specifically for use in the Calamus program by Stefan Nawrocki from the ELEN company from Koszalin. Using this program the text was exported as formatted Calamus text (CTX) with Polish word division.

Figure 4: Screenshot from Calamus. Author: Kroll.
The cover of the book was also designed on Atari – by Krzysztof “Kaz” Ziembik. The author used the Crack Art program on the Atari 4160STE computer and the Robbo Kreator editor on a PC to obtain text written in the font characteristic of Robbo.

Photo 4: Cover of Robbo. Solucja; the cover designed by Krzysztof KAZ Ziembik on the Atari STE.

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There is no doubt that one of the reasons for the creating Robbo. Solucja was a just a ludic desire to play, to make a joke; however, it is the belief of the authors of the book and this essay that it helps describe the popular phenomenon of remixes in the modern technological world. Ewa Wójtowicz in her book *Sztuka w kulturze postmedialnej* on art in postmedia culture writes about the short life of technology, which is replaced by increasingly newer novelties, so-called *killer apps*. One answer to this technological acceleration is the practice of returning to media or devices that are displaced and dead. Such gestures on the one hand critically comment on this acceleration, and on the other enable us to retain cultural content in today’s excess-based culture based through circulation and reiterating. In this particular case the result is, at least according to the intention of the book’s authors, a very nerdy work. At its beginning and ending, as its alpha and omega, is the Atari, which proved sufficient equipment for every level of the book’s creation, from text, through layout and typesetting, to cover.
I would like to express my gratitude to Wojciech Bociański, Krzysztof A. Ziembik, Piotr Mietniowski and Aleksandra Małecka for their help and advice that contributed to the preparation of this text.

This is a revised and corrected version of the text that published in Polish as the afterword of the Robbo. Solucja book.

**ACKNOWLEDGEMENTS**

*Works Cited*


**Biography**

**Dr. Piotr Marecki** is Assistant Professor in the Institute of Culture at the Jagiellonian University in Krakow and lecturer at the Film School in Łódź. Editor, publisher, translator of experimental literature (with Aleksandra Malecka), cultural studies and digital culture scholar. President of Korporacja Ha!art Foundation, supporting contemporary, innovative, experimental art and culture. Since 1999 editor-in-chief of postdisciplinary journal of art and culture Ha!art. He has organised and co-organised numerous literary festivals, events, conferences and media art shows, including Ha!vantgarde International Literary Festlab.

He is also the head of creative computing lab at the Jagiellonian University. His recent collaborations include the conceptual book 2x6 with Nick Montfort, Serge Bouchardon, Andrew Campana, Natalia Fedorova, Carlos León and Aleksandra Malecka published by Les Figues Press, Los Angeles in 2016 and *Robbo. Solucja* with Wojciech Bocianu Bociański, Lisu, Piotr Kroll Mietniowski and Krzysztof Kaz Ziembik. Currently works on a ZX Spectrum monograph with Yerzmyey and Hellboj. Based in Kraków, Poland.