



Research Article

AI to enhance or to suppress human creativity: a research into contemporary practice of machine-assisted and machine-inspired screenwriting

Natalia Grigoreva^{ab*}

nloskutova@yandex.ru

ORCID:0000-0003-0589-4966

Alina Meshcherikova^b

meshherikova@gmail.com

ORCID:0009-0007-1598-5518

Irina Morozova^b

jazzforbliss@gmail.com

ORCID:0009-0009-0863-2399

^aMoscow Metropolitan Governance Yury Luzhkov University,
Stetenka St., 28, Moscow, 107045, Russia

^bAll-Russian State University of Cinematography (VGIK), V.
Pika St., 3, Moscow, 129226, Russia

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Abstract:

The research focuses on the role of AI in screenwriting as both an instrument to assist people and a motive to inspire them.

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* Corresponding author
E-mail address: nloskutova@yandex.ru



The authors claim that their initial intention was to study apps and tools for machine-assisted screenwriting, but soon they realized that assistance and inspiration in creative fields are inseparable and embedded in the wholesome character of filmmaking. The omnipotent character of AI makes it impossible to distinguish the contribution of each of its tool into a stained-glass whole of creative process. The current trends and forecasts for the future give reasons to believe that growing demand for high quality video content will only encourage filmmakers to use AI more extensively, both as an assistant and an inspiration, given that AI-centered stories generate an increasing interest among audiences. Literature review conducted as part of this study revealed that despite being positively assessed by many researchers, AI causes apprehension in terms of legal aspects of authorship and future prospect of human involvement in screenwriting process. Authors maintain that there is not enough evidence to suggest that AI can hinder human creativity as a whole, given that the knowledge AI instruments acquire are not only accumulated but also and handpicked by people. Voicing impartial understanding for these concerns, the authors remain convinced that AI will become even more deeply integrated in screenwriting process, and despite the current crisis that found many manifestations, like the strike of Writers' Guild of America in 2023 or authorship legal disputes, AI holds endless possibilities for innovation and creativity in film industry.

Keywords: AI, machine learning, creativity, machine-assisted screenwriting, script, machine-inspired plot, human writer, screenwriting tools, robot writer



1. Introduction

The role of AI in filmmaking and screenwriting in particular stole the spotlight after the strike of the Writers' Guild of America in 2023. That year Hollywood saw the biggest labor dispute in the XXI century. More than ten thousand screenwriters went on strike over disagreements with the Alliance of Motion Picture and Television Producers (AMPTP) regarding the alarming processes in the industry affecting their incomes. The strikers mainly focused on two issues: the residuals from streaming media and the terms of the use of AI in screenwriting (Kilkenny, 2023). The strike ended, but the concerns remained. The first issue was easy to solve by making new contacts, which satisfy the interests of both parties, but the second aroused lots of discussions and stimulated researchers to look deeper into the matter. Writers wanted AI instruments, such as ChatGPT, to be allowed to be used only to help with research or facilitating script ideas and not as a tool to replace them. This might sound good as a slogan, but researcher are puzzled by incongruity of this demand. Bastidas and Gonzalez (Bastidas; Gonzalez, 2023) argue that ChatGPT's impact on Hollywood can be of unmeasurable magnitude to the point that the technology could completely replace professional writers. The concerns about AI replacing humans are shared by performers who joined the strike (Cullins; Kilkenny, 2023), presupposing that with time, their jobs can also be lost because of allegedly unfair competition with the AI. So, the prospect of AI to be at least as good as humans is no longer a point of substance, but a matter of time. If screenwriters and actors with deep understanding of their craft and researchers with their ability to assess and analyze confirm that, how long will we possibly be able to sweep AI under the carpet, introducing partial restrictions?



There is another important consideration related to this issue. Today AI becomes not only a tool, but also one of the most popular protagonists in films and books. So, screenwriters master the craft of working with AI not only as a tool to assist them, but as a necessary part of character research, where AI *is* a character.

Since ancient times, AI has fascinated people, and those involved in creative sphere, in particular. Engineers and writers have always found attractive an idea of a non-human form of intelligence. In Ancient Greek mythology, there is a giant robot Talos “programmed” to throw stones at potential invaders to the island of Crete. This early vision of AI gives a clear understanding that its purpose was seen in protecting people, though not people in general, but a selected group (Crete’s inhabitants). The principles of peaceful coexistence of artificially intelligent creatures (robots) and humans are also found in Isaak Asimov’s collection of sci-fi short stories and novelettes *I, Robot* (1942), which read as follows, “1. A robot may not injure a human being or, through inaction, allow a human being to come to harm. 2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law. 3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws” (Asimov, 2004, p.37). Anticipating a threat on the part of robots, Asimov makes an attempt to establish some ethical code for artificial intelligence and human beings to coexist, with humans taking the privileged and indisputably dominant position in this hierarchy. But Asimov’s warning to mankind is nonetheless clear: robots either will outstep the marks or will not perform their functions properly. Asimov’s robot is eventually trapped in a repetitive cycle of behavior, unable



to follow the Laws as it was supposed to do, as if predicting legal and ethical conundrum in all aspects regarding this issue.

Further examples of AI as protagonists followed. Technological advances and machine learning enabled AI to enter almost all spheres of people's life, and over the last 20 years, a large portion of the world's most successful blockbusters and TV shows explored AI's role, place and repercussions in human life. The discourse, though, was revamped, and the growing number of films and series allows talking about AI as an element not only of sci-fi, but also such genres as romance, thriller, drama, and even the musical.

Thus, AI shows great potential to assist and to inspire screenwriting, and thanks to that, gives enough reason to study the matter comprehensively.

2. Materials and methods

Our study is focused on screenwriting in particular because an increasing demand for video content requires an adequate supply of stories. According to Zion Market Research's assessment (Zion, 2023), the global Movies & Entertainment market size was around 94.45 billion in 2022. Projections indicate that by 2030, the Movies & Entertainment market is set to reach staggering \$169.62 billion. This growth, first and foremost, reflects the continued expansion of streaming services in response to enduring popularity of cinema and entertainment across the globe. Another thing, which this forecast indicates, is that there will be higher quality standards and wider range of genres and topic for video content, hence, for their narratives as well. We should not discount the fact that despite the current concerns about the issues of authorship and



filmmakers' incomes, the growing demand will make it necessary to employ and further improve AI screenwriting instruments.

AI is bound to play a crucial role in this process, both as an element of the plots and as an instrument to create them. Research objectives include assessing the current practices of machine-assisted screenwriting in the film industry, i.e. to review the main AI instruments used in scriptwriting; to examine the researchers and screenwriters' perception of AI technology and identify some ethical considerations, which will be done in the review of related works; to highlight the prominence of AI-related plots on contemporary screens.

Research methodology includes literature review to identify the scope of the current knowledge and concerns, where particular attention is given to such issues as authorship, ethical issues and the potential exclusion of humans' involvement; analysis of the AI scriptwriting tools used in film industry; review of films and TV series with AI protagonists with the purpose to prove that the nature of AI, the range and variety of it, allowed diversifying plot schemes.

This research is meant to contribute the fair place of AI technology is filmmaking process as both, a tool and a source of inspiration.

3. Literature review

In his dissertation *The Artist's Code: Technology and the Optimization of Creativity in Hollywood*, B.R. Green traces how the software has changed since it first appeared in 1980s. Initially, its functions were limited to formatting, restructuring, and making corrections to manmade texts. After studying the tremendous



change in the scope of AI's functionality, user-friendliness, and availability, the author urges viewing work in contemporary media as a balancing act between creativity and engineering ingenuity. After proving that AI embedded in every aspect of filmmaking logic that justifies contemporary ways of performing creative labor, Green speaks favorably about varied approaches to machine-assisted processes in terms of adaptations to the cultural and economic conditions of the industry. However, he makes a reservation that a totalizing rationality of computing technologies poses unusual for Hollywood types of questions like, who knows what about creativity, how they came to know it, and whether this knowledge can be profitable in the future (Green, 2023).

U. Patcar (Patcar, 2024) from the School of Digital Media and Cinematic Arts at Bangkok University also highlights a positive role AI play in film industry. He claims that AI provides indispensable assistance at all stages of filmmaking, especially at post-production. In his opinion, filmmaking these days largely depends on AI. In preproduction AI helps in decision-making on the cast of performers by analyzing data on past performances, demographic information, and physical characteristics of actors, hence reduces the time and cost of traditional casting methods. But when it comes to screenwriting, the author becomes more apprehensive and cautiously presumes that despite the fact that AI can create innovative content with less time and cost, it can further promote stereotypes and discount valid ideas.

Many authors conclude that the main impact of AI in film production is that of increasing efficiency and cost-effectiveness (Chow, 2020; Peiming, 2024). In terms of aesthetic aspects, AI has proven to be a great tool to enhance the overall quality of visual



and sound effects, providing filmmakers with new methods and techniques to explore and experiment with. At the same time, almost all cited researchers agree that AI technology shows a lack of human touch and uniform quality of the works produced. But it is early days yet to approach this sensitive issue. In fact, to talk about human touch in scripts and films generated by AI, we have a very limited number of examples to see even the beginning of a trend. AI is used extensively in film industry. As the latest figures show, in Hollywood it was used in 20% of all productions (Samradni, 2023), but the genres and particular scenes where it was applied had particular character (the simulation of a natural disaster, non-existent beings, etc.) and were largely predicated by a human decision rather than created entirely and all together by AI.

T. Bucher remarks that, “while algorithms and software are starting to catch the interest of social scientists and humanities scholars, having become somewhat of a buzzword in media and communication studies during the past years, we are only at the beginning of understanding how algorithms and computation more broadly are affecting social life and the production and dissemination of knowledge as we know it” (Bucher, 2018, p.15). Since 2018, not much has changed. Despite all the expertise that we can see on parade today about AI impact on social and creative processes, it is clear that humankind has not yet come to terms with AI’s growing potential and its claim to play equal with humans.

K.C. Anandraj and S.Aravind (Anandraj; Aravind, 2023) in their research look optimistically at the future of filmmaking encompassing AI tools. The magnitude of AI impact they boldly call “revolutionary”, and in the sense of the scope and ideology of the entire industry, their argument sounds relevant. Their approach



to research into this issue rests upon wholesome character of filmmaking. They analyze the role of AI at all stages of filmmaking, yet set different criteria to distinguish the AI impact. For example, Anandraj and Aravind do single out the use of AI in script analysis and generation, casting decisions and cinematography, but for overall assessment, they apply different criteria such as efficiency, ethics, creativity, quality, audio enhancement and audience engagement, namely those aspects that matter when a completed work of art is evaluated. Anandraj and Aravind’s conclusions are based on the analysis of some specific examples of well-known commercial hits, which gives reasons to believe that certain patterns of applying AI in film industry are implemented successfully. At the same time, they attach great importance to human involvement in filmmaking process concluding that AI “has the ability to completely transform the business by providing novel tools and techniques that can boost creativity, streamline production processes, and captivate audiences through inventive means. By adopting AI in *a responsible and ethical manner, filmmakers may access new opportunities* (emphasis added) and produce innovative cinematic experiences that deeply connect with global audiences” (Anandraj; Aravind, 2023, p.91).

The legal aspect concerning AI instruments has been studied extensively with references to some recent cases. For the scope of this study, it is essential to understand how the current issues of authorship are viewed by lawyers in their legal practice. The laws regulating issues of authorship on AI-generated works differ from country to country. For example, in the US an original work of authorship can be registered “provided that the work was created by a human being” (Compendium, 2014, §306). The same rules are



valid in Australia. In Ireland and Hong Kong lawmakers are favorable to the programmer as “an author”. In the UK and the EU, copyright laws seems to hedge its bets offering vague wordings like “human arrangement” or “authors’ intellectual creation”, leaving a big leeway for lawyers and allowing courts to rule on individual basis (Horvitz, 2024). Such wordings leave content creators and programmers unsatisfied: “human arrangement” can apply to both categories and the contribution of each party is hard to determine, raising thereby the disputes as regards authorship and fair income distribution.

Though, the problem is not recent. In her comprehensive study *Coding Creativity: Copyright and the Artificially Intelligent Author*, A. Bridy is preoccupied by the question who may hold an authorship if the real author is AI. She maintains that “AI authorship is readily assimilable to the current copyright framework through the work made for hire doctrine, which is a mechanism for vesting copyright directly in a legal person who is acknowledged not to be the author-in-fact of the work in question” (Bridy, 2011). As we can see, the framing changed, but the problem has not become less complicated since 2011, because hire doctrine, for the good or bad of it, is applicable to employees of such IT giants as Google or Yandex, but does not protect or “disinherit” those who work freelance, as many in filmmaking do.

S. Sonnenfeld claims that momentous decision came forward in 2013, when the Authors Guild lost the case against Google that had digitalized published books and then used them to teach computers to write. The court affirmed that the Google Books project met all legal requirements for fair use thereby giving legal grounds for humans and machines to compete in creativity. Once



again, AI showed extraordinary capacity to learn and has proved to be very distinct in variety and range. Having the best teachers of all times and from all over the planet, AI accelerated its learning and today we have fewer reasons to doubt that it can AI mirror the expression of human emotions so closely and eloquently that it is getting more increasingly difficult to spot differentiate between scripts written by a person and those by AI [Sonnenfeld, 2024].

Overall conclusion derived from the cited publications and comments on the web, AI in screenwriting is viewed as an essential instrument yet causes apprehension in terms of legal aspects of authorship and future prospect of human involvement.

4. Results and discussion

The variety of scriptwriting tools available on the market (free and for pay) shows the development of AI scriptwriting tools is still work in progress. The universality and open character of the most promoted ones like ChatGPT can cover for almost requirements in terms of character research, references, and search for ideas. There is, in fact, no specific AI tool that scriptwriters all over the world vote in favor of, as the use of AI in the film industry is still relatively new and the requirements for scripts vary. In terms of purpose, scriptwriting tools fall into two big categories: purely technical ones and those that allow generating scripts from scratch. Most popular in the first category are Botnik, Scriptbook, Final Draft, Arc Studio, WriterDuet, Trelby, and many more besides. The features that these tools offer include formatting tools, suggesting ideas, cloud storage, collaboration tools and full revision tracking, script templates, customizable keyboard shortcuts and auto-completion. The listed functions for today's scriptwriter are as essential as a pen or typewriter for the authors of



previous generations. The choice of such instruments depends on personal preferences of the user and pricing policy of the provider. Speaking about AI writers, the variety of available instruments such as OpenAI's ChatGPT, Jasper, Kuki Chatbot, AI Writer, and many others allow us to conclude that their usefulness largely depends and limited by the data base they refer to. Despite the big number of options, all AI script-generating tools are unmistakably powered by machine learning algorithms that absorbed and processed tons of information from the internet, including story structure, story logic, story twists, and story writing. Their weaknesses therefore, such as lack of creativity, biased and stereotypical nature, inaccuracy in portrayals of characters and their emotions, logical inconsistency or unrealistic plot developments, etc., will be mended with further technological advancements and more precise guidance; in other words, with larger databases, feedback, and better coding.

To an extent, the role of AI in creative industries is similar to that played by energy production in the industrial revolution. A single barrel of oil contains the energy equivalent of the manual work of up to 10 people. Steam engines and internal combustion engines, on the one hand, put many people out of work, but on the other hand, they opened up new opportunities. So, the amazing diversity of AI and its flexibility stretched imagination of human writers who created AI-centered plots. This is how the human writers “teach” and “inform” AI of people's expectations and fears provoked by AI. The TV series *Black Mirror* (premiered in 2011, created by Charlie Brooker, produced by Zeppotron) in the genre of speculative fiction provides a dystopian picture of technologized future. The 2016 TV series *Westworld* (created by Jonathan Nolan and Lisa Joy and produced by HBO) is made for humans, but it is



not about humans. It is about ethical claims of AI to play on equal terms with humans. The serial was based on the 1973 film of the same name with the 1976 sequel and a short-lived TV series of 1980. In all productions, the omnipotence of AI is made clear, same as a threat it might represent. However, the difference in viewers' background knowledge and awareness of then and now makes the initial idea of robots' rebellion against unfair treatment look completely different. If earlier films were more about intimidating phenomenon looming on humanity's horizon, more recent ones deal with our ethical stance toward it and the validity of AI claims to become part of "us" rather than to be ever satisfied with the role of "them".

Similar issues are dealt with in the 1982 film *Blade Runner* directed by Ridley Scott, produced by Warner Bros and *Blade Runner 2049* (2017). Increasingly, AI is involved in romantic plots started by the 2013 film *Her*, an independent production directed by Spike Jonze and produced by Annapurna Pictures.

There are many more examples of AI inspiring authors to create all sorts of content starting from commercially successful *The Matrix* franchise Marvel's hits (*Avengers* or *Ironman* franchises) to profoundly thought-provoking (*2001: A Space Odyssey* (1968)), or touching and charming content, like Pixar's *Wall-E* (2008) or *The Mitchells vs the Machines* (2021). They all serve to illustrate the point that the deeper AI is allowed to assist people, the more it inspires them to create new stories with AI as protagonist or rethink old ones. Hence, as AI becomes more deeply integrated in screenwriting process, it holds endless possibilities for innovation and creativity in film industry.



5. Conclusion

Despite the apprehension and occasional strikes like the one we started this article with, AI has come to stay. Artificial restrictions and even partial political will cannot restrain or stop the progress but in a very short run. If the mankind does not voluntarily choose to dive into Stone Age again, we have to put up with the omnipresence of AI in all aspects of life – as an assisting and a creative tool as well. The travelled path of advancements in AI technologies leads strictly from the past to the present, so is known and studied, but many more side roads fork off the main one for the future. Our study initially started with apps and tools for machine-assisted screenwriting, but soon we realized that assistance and inspiration in creative fields are inseparable, same as a smart apprentice becomes as good as his/her master, AI with its ability to learn can in many ways surpass humans. The good news is that the mankind has seen this before – the agricultural revolution and the industrial revolution transformed human existence, presumably, even more dramatically than the works of AI. A renowned educator Ken Robinson in 2006 made a statement that creativity in today's reality is as important as literacy (Robinson, 2006). His contention created resonance among the teachers all over the world, with some members of teaching community taking offence and objecting that true creativity is based on knowledge which in turn is based on literacy. Both arguments are not mutually exclusive. In fact, what Sir Robinson was about to get across is that literacy is not enough. Extrapolating his statement on AI instruments we could claim that the implementation of machine-assisting tools was the stage of acquiring literacy and knowledge, which logically preceded the stage of the ability to create. In essence, the role of AI has changed dramatically in authors' perception – from protectors of Crete's



population (Greek mythology) to romantic partners (*Her*, *Wall-E*).

AI was allowed to very intimate spheres of human life, which in itself is a huge turn in contemplating the role of AI. Moreover, a great number of AI plots were, in fact, elaborated well before AI capacities were put into practice. Some of the stories had to wait for computer technologies to become sufficiently advanced as it was with 2001 film *AI: Artificial Intelligence*, directed by Steven Spielberg and produced by Warner Bros. The screenplay is based on Brian Aldiss' short story *Supertoys Last All Summer Long* written in 1969. Originally, it was the Hollywood intellectual, producer and director Stanley Kubrick who acquired the rights to the story with the intention to make it into a film. Yet, till his death in 1999, Kubrick felt that the story has a great viewing potential, but computer-generated imagery was not advanced enough to deliver convincing character portrayal. So, AI had to work on self-perfection and self-improvement to be adequately portrayed on screen.

To conclude, machine-assisted screenwriting and machine-inspired screenwriting go hand-in-hand, contributing and perfecting each other. There is not enough evidence to suggest that AI can hinder human creativity as a whole, given that the knowledge AI instruments acquire are not only accumulated but also handpicked by people. What it does though, it puts forward new challenges and calls for further improvements so that more stories will find their way to the audience. The growing demand for high quality content will only make people use AI more extensively both as an assistant and an inspiration.



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