Artificial Intelligence : in Creation and Destruction of Human Creativity pertaining to the Schumpeter's Gale

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ABSTRACT
Technological innovation stands as a crucial element in the advancement of humanity. Artificial Intelligence (AI) is a cutting-edge innovation that is highly sought after in the present times. This powerful and novel technology profoundly influences numerous aspects of our lives. The extensive and swift integration of AI tools in various domains has prompted conversations regarding the significance of AI and its potential influence on creativity. The main objective of this research paper is to conduct a thorough investigation into the impact of AI on different facets of human creativity. It will explore the potential applications of AI as a supportive instrument to augment and facilitate human creative endeavours. Additionally, the paper will delve into the potential risks and drawbacks associated with AI's involvement in artistic pursuits, highlighting its potentially detrimental effects and proposing possible solutions to safeguard our creative expression. This research integrates Joseph Schumpeter's 'Creative Destruction' theory (Schumpeter's Gale), to analyse why AI is viewed as a Creative Destruction in Human Creativity.
Keywords—Artificial Intelligence (AI), Human Creativity, Creative Destruction.

1. INTRODUCTION
In this quickly evolving technological world, Artificial Intelligence (AI) has grown to a powerful force, affecting many angles of our lives. AI systems like ChatGPT, DALL-E 2, Stable Diffusion 2, and others can create new content, such as images, music, text, and videos, that mimic or resemble human creativity, enabling humans to do tasks more quickly and effectively, thus increasing productivity. The growth and involvement of AI tools in various aspects of our lives spurred a talk about the impact it will have on human creativity. It is important to understand the role of AI within all aspects of human creativity to get familiarised with AI's potentiality in bringing benefits and challenges to human creativity.

2. COMPARISON ON HUMAN CREATIVITY AND AI CREATIVITY
A simple definition for Creativity given by the Oxford Dictionary is : "The use of imagination or original ideas to create something". Creativity is often perceived as a unique human attribute, stemming from our ability to think, imagine, and generate novel ideas. Human creativity is boundless and manifests in various forms across different domains. Every human creation has some sort of purpose, importance, worth, originality and we humans attach our emotions within our works. Humans become creative in a very human way by communicating our emotions through our works.
Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and learn like humans. AI's Creativity is as an imitation or deception of human creativity, a digital extension of our capacity for idea generation. AI works through a combination of Natural Language Processing (NLP) and Machine Learning (ML) algorithms, these

algorithms are capable of learning a set of rules by referring through a large amount of data known as "Training Data" and using these set of rules, AI would be able to create something new based on a user input known as "Prompt". For example, Fig 1, is a sample image generated by DALL-E for the input "A Claude Monet-inspired picture of a fox lounging in a field at morning".

Fig. 1. DALL-E generated image

AI has the capability on working on its trained data and generating new impressive and creative content on its own. But AI struggles in communicating human-specific emotions, thoughts, interpersonal connections and experiences through its works. For example, DALL-E has all the information it need to generate such image (fig1) , but it lacks the same level of subjective feelings, ideas, and experiences that a person would have about the image. Regardless of how impressive a piece of computer created artwork might be, it is always constructed using building blocks extracted from the training data. These models are limited by the data they have been trained on and wouldn't be able to "create" anything without humans providing the training data. This implies that AI isn't actually capable of what we would refer to as "originally creative" — coming up with new and innovative ideas. So its evident that AI cannot independently generate novel, innovative ideas; it can only assist humans in doing so.

3. CREATION AND DESTRUCTION OF HUMAN CREATIVITY
The arrival of AI has set the start of a new era, redefining the boundaries of human creativity. Within the zestful landscape of human creativity, AI exhibits in twofold, serving as a catalyst for improved creativity and also having the ability to disrupt traditional creative processes.

3.1 AI Enhancing Human Creativity
a) *Creative Assistance and a collaborative partnership :* AI can assist human in completing creative activities, can produce ideas and suggestions that the human artist can use to improve their production, get through creative roadblocks.

b) *Exploring new horizons:* Through pattern recognition and data analysis, AI systems can introduce people to fresh ideas, viewpoints, or styles, this can broaden their creative horizons and encourage them to think beyond the box.

c) *Mundane Tasks :* Artificial intelligence (AI) frees human producers to focus on more imaginative and nuanced areas of their work by automating repetitive or tedious jobs.

d) *Lower technical prerequisites :* By lowering all the technical prerequisites, a broader spectrum of people may now access the creative industry. Novices can participate and create content without requiring extensive knowledge in the fields.

3.2 AI Diminishing Human Creativity
a) *Overreliance on AI-generated content :* The root cause for the negative effects of AI on human creativity would be the overreliance on AI generated contents. The development and widespread use of AI technologies indeed have the potential to attract humans and create dependency on AI platforms, leading to increased adoption in various fields.

b) *Degradation of human works :* AI system may discourage individuals from developing their own unique ideas and expressions, human are capable of. It could be increasingly difficult for humans to match the productivity and speed of AI-generated creative works. This may reduce the need for human creatives and displace human artists, increasing the likelihood of unemployment.

c) *Homogenization and Bias in creative output :* AI creates output by analysing large data sets, the output may reflect biases and cultural norms present in the data itself, a risk of losing diverse and unconventional artistic expressions.

d) *Loss of craftsmanship and skill development :* AI technologies make it far too easy to achieve certain artistic objectives. This could result in a decline in the development of traditional skills and craftsmanship, which are often nurtured through years of practice and dedication.

e) *Ethical and legal implications :* AI can make it easier to plagiarize and infringe upon the work of others, making it more challenging for artists to safeguard their work and receive proper credit.

f) *Unintended misuse of AI in Creative Contexts :* Deep fake AI-generated content can be used to propagate false information or for malicious purposes. AI could be used to mimic voices or appearances with the intent to spread misinformation, manipulation of public opinion, engage in harmful activities.

3.3 WHY AI IS A CREATIVE DESTRUCTION IN HUMAN CREATIVITY ?
The theory of Creative Destruction or Schumpeter's Gale was identified by the economist named Joseph Schumpeter, derived from the works of Karl Marx. The theory assumes that the deployment of innovative process could inevitably result in the destruction of long-standing arrangements and assumptions, leading to losers and winners.

AI empowers people in the creative elements and emerges as a new source of creative creation by providing cutting-edge tools and technology. However, it also have the potential in destroying the existing sources of human creativity. The ease and convenience of depending on AI-generated material may cause a loss of conventional creative abilities and a rising dependence on automated tools, which may lead to the replacement of old industries and technologies and, ultimately, the loss of jobs and misery for individuals impacted. Due to this dual impact of Artificial Intelligence on various aspects of creative processes, AI can be considered a form of creative destruction in human creativity. For instance, GitHub's Co-pilot, assist human in writing code, without having much tech knowledge. But this also make it too easy to achieve certain creative outcomes, individuals might bypass the learning and mastery process, leading to loss of craftsmanship and skill development, leading to a decrease in demand for coding professionals, as any novice could generate code using these AI applications. The scenario would be similar on other fields too. Table.1 shows some examples of how the introduction of AI expanded the creative landscape, offering new capabilities, insights, and opportunities in creative fields, also its potentials of destructing those industries.

Table.1. Transformations within fields

FIELDS	BEFORE AI	AFTER AI	
		POSITIVE	NEGATIVE
Film Production	Filmmakers depended on their original ideas, skills and traditional animation methods to generate special effects.	AI can assist in scene creation, video editing, visual effects, can predict the potential success of a film by analyzing factors.	AI-driven animation software can generate realistic visual effects without the need for manual animation work, potentially leading to a decrease in demand for

|			skilled animators.
Music Composition	Musicians composed music manually by using their musical knowledge, traditional instruments and recording methods.	AI helps musicians in composing a variety of genres, moods, or styles as well as original sounds and instruments by analyzing enormous music datasets.	AI can simulate various instruments and vocal styles, potentially replacing the need for hiring individual musicians.
Writing and Content Creation	To create written works, novels, poetry, or articles, authors and writers relied on their imagination, life experiences, and research abilities.	Natural Language Processing (NLP) algorithms can produce content quickly and effectively, can help with language translation, and offer grammatical and stylistic suggestions.	Companies might opt for cost-effective AI-generated content rather than hiring skilled human writers, leading to a loss of livelihood for many professionals.
Information Technology	Developers had to write code line by line, and debugging and error detection were primarily done through manual testing.	AI-driven code generators and automated testing tools have significantly accelerated software development processes, improving code quality and reducing human errors.	In the IT industry, AI-powered automation can take over tasks such as data entry, basic software testing, and even some level of programming. May result in job displacement.
Science and Research	Researchers and scientists used their knowledge, expertise and data analysis skill to make new discoveries and find solutions to complex issues.	By processing huge amounts of data, AI algorithms can help researchers in the discovery of new ideas and relationships.	AI models are trained on biased historical data, they may perpetuate and amplify societal biases, leading to unfair or unjust conclusions in research.
Medical Expertise	Medical professionals relied on their knowledge, clinical experience, and results of diagnostic testing for diagnosing a patient. Centered on treatment of diseases after they have occurred.	AI analyze patient data, including medical records, lab findings, and imaging scans and help medical personnel identify early warning signals, predict disease progression.	Misdiagnoses can have severe consequences for patients, delaying appropriate treatment, causing harm if the wrong treatment is administered based on the inaccurate diagnosis.
Journalism	To gather information for newspapers, magazines or online publications, journalists used to conduct interviews, analysis of vast	Today, journalists employ AI-powered technologies to quickly analyze enormous volumes of data and produce news pieces and reports.	Lack of human judgment in content curation can result in the dissemination of inaccurate or misleading information.

	amount of data and create news pieces or reports.		

4. RESEARCH METHODOLOGY

An online survey was conducted during the month of July, 2023, to analyse the public view on the subject. The survey was carried out by using the Google Form service. The survey has approached a variety of individuals from different fields. The questionnaire prepared the survey with formal and minimal questions which focused on how the respondents felt about the AI's impact on the creative aspects.

4.1 Results And Analysis

Has AI influenced your creative process or artistic expression?
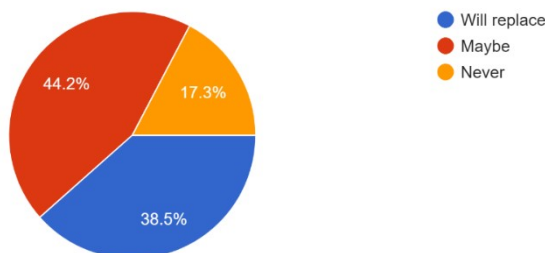52 responses

- Yes
- No

23.1%
76.9%
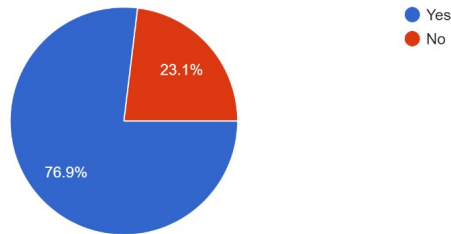
- *From the responses received, 76.9% respondents agree that AI has influenced their creative processes and 23.1% responded that AI still haven't able to assist in their creative processes.*

Do you think collaboration between humans and AI can lead to innovative outcomes in creative projects?
52 responses

- Yes
- No

9.6%
90.4%
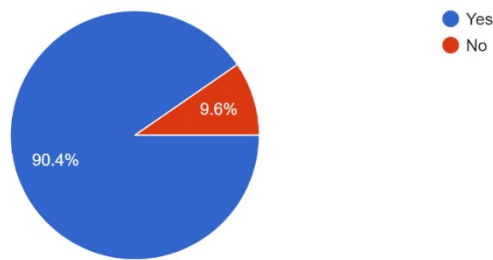
- *From the responses received, 90.4% respondents believe that collaboration between human and AI can lead to creative outcomes. But there is a 9.6% respondents disagree with this belief.*

Do you think AI will replace Human Creativity?
52 responses

- Will replace
- Maybe
- Never

44.2%
17.3%
38.5%

- *Based on the response, 38.5% of respondents think AI would replace human creativity, 17.3% believe that's not the scenario, AI will never replace human creativity. But a majority of 44.2% agrees that AI has the potential to replace Human Creativity but not sure will it ever replace.*

5. SOLUTIONS TO THE CREATIVE DESTRUCTION OF AI

It is crucial to understand that AI has a complicated and varied influence on human creativity. While it has the potential to disrupt certain aspects of creativity, it can also be a powerful tool that complements and enhances human creative endeavours. The key is to find a balance between using AI for creative endeavours and protecting the special characteristics of human creativity. At this moment, preventing our hands from AI would be quite difficult, but we can prepare an environment where both human – machine creativity thieves. Some of the preparations include:

a) Education and Skill Development : Encourage interdisciplinary research and promote original viewpoints, emotional intelligence, problem-solving skills, and creative thinking through schooling. To maximise the benefits of both, encourage cooperation between humans and AI systems.

b) Support for Professionals : Develop AI tools with the intention of aiding and enhancing human professionals rather than to replace them.

c) Public Discourse and Policy Development : Engage public discussions and debates about the impact of AI on human creativity. Implement ethical guidelines and principles for AI systems to ensure they respect and support human creativity. Change human's ignorant mentality, accept the possible threats and resolve it.

6. CONCLUSION

Creative Destruction is a necessary aspect in our lives, it is the only way through which we'll able to grow and innovate our lives as per our needs. In a similar vein, we could assert that the creative destruction of artificial intelligence is also essential, as it presents a variety of growth and innovation. In a capitalised society, innovation and competition will force world to progress and develop, subsequently it will hurt those who remain stagnant and will reward those who are able to plan and adapt around these transformations. It is important to strike a balance between human expertise and AI assistance. If the correct strategy and ethical guidelines are put in place, use of AI in creativity might have a highly promising future. AI should be treated as a tool to complement human creativity, not to replace it.

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