

THE IMPACT OF AI ON THE ILLUSTRATION AND DESIGN INDUSTRIES:

(IS AI A THREAT OR AN
OPPORTUNITY?)



SUPERVISOR
Andrew Howard

STUDENT
Victoria Chekalina

YEAR
2024

{ABSTRACT}

Exploring whether AI is a threat or an opportunity for the illustration industry, this study examines the complex interplay between Artificial Intelligence (AI) and the illustration industry. In order to provide a multifaceted perspective on the role of AI in design and illustration, the study is based on a mixed research methodology that combines qualitative and quantitative analysis. The study assessed the multi-dimensional impact of AI on the industry through extensive literature reviews, case studies, expert interviews, social surveys and personal experiments.

Both the opportunities and challenges presented by AI are highlighted as key findings. On the positive side, AI is enhancing creativity through new directions and innovative ideas, and greatly improving the efficiency of concept visualisation and automation of routine tasks. These advances are seen as potential catalysts for productivity growth and cost reduction. However, the potential for job losses and changes in skill requirements must be considered. The survey also reveals concerns: 44% of respondents fear possible negative consequences of AI adoption, such as job losses and changing skill requirements.

At the same time, the study highlights the serious legal and ethical challenges associated with integrating AI. Issues related to intellectual property, the authorship of works created by AI, and the opaque nature of the learning processes of AI come to the fore. These findings are supported by interviews with industry professionals, such as illustrator Ula, who expresses concerns about workplace safety and the erosion of creative authenticity thanks to AI, and points to the need for strong policies focused on ethics, intellectual property and transparency in the development and use of AI.

With automation already affecting the structure of the labour market, creating new jobs while others become obsolete, the socio-economic implications of integrating AI into the design and illustration industry are enormous. Highlighting the complex and unpredictable trajectory of these changes, the research identifies the current trend of job substitution in favour of AI in certain sectors.

The conclusion underlines the need for well-designed, dynamic policies that strike a balance between the benefits of AI and the interests of the professions and industry standards. Legislators are encouraged to have an inclusive approach through the involvement of a wide range of stakeholders, including artists, designers, technology developers, lawyers and policy makers. The aim is to enable innovation and progress in the creative industries without compromising ethical standards and the value of human creativity, and to establish fair, effective and adaptable policies that evolve with AI technology.

{GLOSSARY}

ARTIFICIAL INTELLIGENCE: The study of giving machines intelligence so they can spot patterns and become extremely adept at assisting people in solving particular problems or groups of problems.

GENERATIVE ADVERSARIAL NETWORKS (GANS): A class of machine learning systems developed by Ian Goodfellow and colleagues in which two neural networks compete in a game.

MIDJOURNEY: An AI model that converts textual descriptions into visual representations.

CHATGPT: A conversational AI model developed by OpenAI. It can generate text based on given cues.

ADOBE FIREFLY: An AI-enabled tool in the Adobe suite for enhancing and manipulating digital images and designs.

AI ETHICS: The moral principles guiding the use and development of artificial intelligence, particularly regarding privacy, consent and transparency.

INTELLECTUAL PROPERTY IN AI: Legal rights associated with mental creations, such as inventions, literary and artistic works, designs, and commercial symbols, names and images.

QUANTITATIVE RESEARCH: Research involving the collection and analysis of data in numerical form, often for statistical analysis for the understanding of patterns, relationships or trends.

QUALITATIVE RESEARCH: Research that uses non-numerical data to understand concepts, opinions or experiences.

MIXED METHODOLOGY: An approach that combines quantitative and qualitative research methods to gain a broader understanding of a research topic.

SURVEY ANALYSIS: A method of collecting data from a pre-determined number of respondents to obtain information on a particular topic.

EXPLORATORY INTERVIEW: A qualitative research method in which the researcher asks questions to obtain detailed information and personal views from participants.

DATA INTERPRETATION: The process of making sense of the data collected, often involving analysis to draw conclusions from the data.

NEURAL STYLE TRANSFER: A technique in AI that applies the style of one image to the content of another.

STABLE AI: Refers to AI systems that are stable and reliable in their performance over time.

GENERATIVE FILL: An artificial intelligence feature in Adobe Photoshop that uses text commands to manipulate and enhance images.

AI PROBABILITY TOOL: A tool that estimates the probability that a given image was created by artificial intelligence.

{KEYWORDS}

AI in Design and Illustration
Ethical Implications of AI in Creative Industries
Impact of AI on Designers' Workflow
AI, Creativity, and Copyright in Design
Policy and Regulation of AI in Creative Industries

{TABLE OF CONTENTS}

CHAPTER 1 METHODOLOGY (Pages 20–25)

P22

1.1

1.1.1
1.1.2
1.2.3

METHODOLOGY OVERVIEW

Mixed Methodology Overview
Literature Review
Data Collection Techniques: Interviews
and Surveys

P25

1.2

LIMITATIONS

CHAPTER 2
 LITERATURE REVIEW: AI
 IN THE ILLUSTRATION &
 DESIGN INDUSTRY
(Pages 26–57)

P28	2.1	INTRODUCTION TO THE STUDY
P32	2.2	THE EVOLUTION OF AI IN ART AND DESIGN: A HISTORICAL PERSPECTIVE
	2.2.1	AI-Generated Art: A New Era
P36	2.3	IMPACT OF AI ON WORKFLOW EFFICIENCY AND PRODUCTIVITY
	2.3.1	Understanding Current Workflow Challenges
	2.3.2	Understanding What AI Can Provide for Changing Design Processes
P42	2.4	REAL-WORLD APPLICATIONS OF AI GENERATORS IN DESIGN:
	2.4.1	A Case Study of Sara Drummond
	2.4.2	A Case Study of Lost Lore: Mobile Game Development with AI
P44	2.5	ETHICAL AND LEGAL CHALLENGES OF AI IN ART & DESIGN
	2.5.1	Ethical Considerations
	2.5.2	Legal Considerations
	2.5.3	Andersen, McKernan, and Ortiz vs. Stability AI, Midjourney, and DeviantArt: A Case Study
	2.5.4	Legal Solutions

P50

2.6

THE ECONOMICS AND
EVOLUTION OF AI IN THE ART
AND DESIGN INDUSTRY

2.6.1

AI in the Art and Design Classroom

2.6.2

New Market Dynamics

2.6.3

Case Study & the Interview: Editor-in-
Chief Calls Herself a “MidJourney
Engineer”

2.6.4

What are the possible changes
in the market?

P56

2.7

CONCLUSION

CHAPTER 3
 IN-DEPTH EXPLORATION
 (Pages 58–217)

P60	3.1	TECHNICAL SIDE OF AI TOOLS
	3.1.1	Generative Adversarial Networks
	3.1.2	Style Transfer
	3.1.3	Automatic Colorization
P63	3.2	COMMON AI TOOLS FOR DESIGNERS AND ILLUSTRATORS
	3.2.1	DALL-E
	3.2.2	Stability AI
	3.2.3	MidJourney
	3.2.4	Adobe Firefly
P65	3.3	PRACTICAL EXPLORATION
	3.3.1	Work Selection Criteria and Analysis
	3.3.2	Experiment 1: “U.S. Counties and Zip Codes”, Paula Scher
	3.3.3	Experiment 2: “You Me”, Paula Scher
	3.3.4	Experiment 3: “I Love NY” logo, Milton Glaser as an Example
	3.3.5	Experiment 4: Logo Design. The flag of Amsterdam as an Example
	3.3.6	Experiment 5: “Hope” poster by Shepard Fairey
	3.3.7	Experiment 6: La Goulue by Henri de Toulouse-Lautrec, 1891
	3.3.8	Experiment 7: Beeple’s 3D piece “Magic Kingdome”
	3.3.9	Experiment 8: Fran Rossi’s 3D illustration
	3.3.10	Experiment 9: Paul Robertson’s Art
	3.3.11	Experiment 10: Hyun Lee’s Environment Concept Art for League of Legends
P194	3.4	ANALYSIS OF EXPERIMENTS

CHAPTER 4
 INSIGHTS
 FROM INTERVIEWS
 AND SURVEYS
 (Pages 196–209)

<i>P199</i>	4.1		QUANTITATIVE RESEARCH
		4.1.1 4.1.2	Presentation of Findings Analysis of Findings
<i>P201</i>	4.2		QUALITATIVE RESEARCH
		4.2.1	Presentation of People
		4.2.1.1	Ula
		4.2.1.2	Daniil
		4.2.1.3	Arina
		4.2.1.4	Yana
		4.2.1.5	Vlad
		4.2.1.6	Anthony
		4.2.1.7	Marika
		4.2.1.8	Polina
	4.2.2		Analysis of Interviews

CHAPTER 5
CONCLUSION
(Pages 210–253)

BIBLIOGRAPHY
(216–223)

LIST OF IMAGES
(224–227)

ANNEX
(228–253)

{1.1} METHODOLOGY OVERVIEW

1.1.1 MIXED METHODOLOGY OVERVIEW

According to Stoimenova and Price (2020) in their research 'Exploring the Nuances of Designing (with/for) Artificial Intelligence', there is a relative lack of discussion in the design discipline about the development and dangers of AI outside of dystopian or utopian views: moreover, the discussions that do exist often lack either a technical or a practical side, which means that exploring the impact of AI on the illustration and design industries requires a diverse and nuanced approach, while focusing on narrowing the focus to be able to conduct research that would bring significant new evidence to the industry.

Patton (1990) distinguishes between qualitative and quantitative measurement in the context of research methodology. Qualitative measures allow for a more open and flexible approach to data collection. They allow researchers to capture subjects' experiences in their natural context, rather than limiting them to predetermined categories. When studying complex and subtle issues, where standardised measures may not fully capture the depth of impact, this approach is particularly valuable.

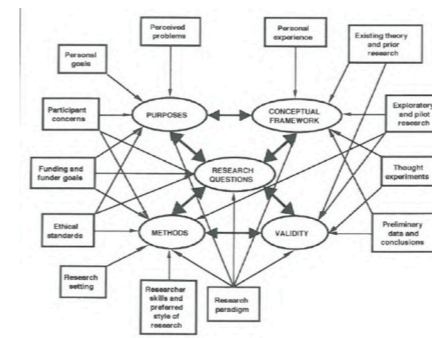
Conversely, quantitative measures use structured instruments. These prescribe the collection of data within specific, predefined categories. This approach is advantageous for studies where there is a need for precise numerical data and can be important for the generalisation of findings to large populations. However, its effectiveness in capturing subtleties and individual differences may be limited by the standardised nature of this approach.

Maxwell and Loomis (2003) argue in their work "Mixed method design: An alternative approach" that it is beneficial to revisit an approach popular in earlier research (before research methods became fully developed). They suggest that each of the existing methodologies has its limitations, so when dealing with complex questions in natural sciences, it's

better to use a combination of methodologies to gain a more comprehensive understanding. According to the study, this model differs from others in that the research question is at the centre and each action within the research has a hub, a return to the question.

According to the study conducted by Weiss (1995) methodology emphasises the importance of looking at qualitative data in the context of an overall theme and comparing it with data already available. This means that we should analyse the data in more detail across different thematic and categorical dimensions. In contrast, quantitative research allows us to systematise the data by looking at patterns and thematic groupings within the field of study.

The adaptability of mixed methods research will be helpful in our exploration of the multifaceted impact of artificial intelligence on the illustration industry. According to the author, this approach interweaves quantitative data identifying and analysing trends and statistical patterns with qualitative data exploring the nuanced perspectives and attitudes of those working in the industry. Combining these allows for a richer understanding.



{FIGURE 1} The hub and linkages in Maxwell and Loomis's (2003) study

1.1.2 LITERATURE REVIEW

According to Baumeister and Leary's (1997) study "Writing Narrative Literature Reviews", the literature review plays a key role in the identification and analysis of patterns and connections between broader theoretical issues. This is particularly important in research where the subject matter covers a wide range of aspects and requires an interdisciplinary approach. The literature review is an essential tool for making sense of the diverse research and theories related to our research on the impact of artificial intelligence on the design and illustration industry.

Baumeister and Leary (1997) emphasise the importance of including a wide range of evidence in a literature review, including both supporting and contradictory data. This inclusion allows for a balanced view and ensures that the review captures the full range of research in the field. A critical component of my review will be a focused search for evidence to suggest that artificial intelligence is either a threat to, or an opportunity for, the illustration industry. This process will involve

identifying not only studies that support each viewpoint, but also those that refute it. In addition, in order to structure this large number of different sources, a thematic analysis approach is used in this research. This method involves organising the literature around specific themes, such as the historical development of AI in art and design, the ethical challenges posed by AI, and the economic and labour market implications of AI. Thematic analysis not only facilitates a systematic exploration of each facet of the topic, but also highlights the connections between different areas of research.

1.1.3 DATA COLLECTION TECHNIQUES: INTERVIEWS AND SURVEYS

The use of online surveys, created using Google Forms, reflects the quantitative aspect of this research into the patterns of use (or not usage) of AI in the creative sector. These data quantify aspects such as the extent of AI adoption, the prevalence of certain beliefs or concerns about AI, and the perceived opportunities or threats associated with AI in the creative industries, and serve as the basis for systematic measurement and analysis.

Moreover, the qualitative aspect of our research took the form of semi-structured interviews. These interviews allowed for dynamic interaction, following the flexible approach recommended by Maxwell and Loomis (2003) and in line with our mixed methods strategy. Interviews were carried out in both English and Russian to ensure diversity and inclusion of viewpoints. The Russian interviews were later translated using the Deel platform. This ensured accuracy and consistency in data analysis. We used the popular communication apps Telegram and WhatsApp to facilitate interaction. We used both text and voice messaging to accommodate the preferences and convenience of our participants. Combining these methods-structured online surveys and language-adapted interviews-allowed us to gain a comprehensive understanding of the role and perceptions of AI in the creative sector.

{1.2} LIMITATIONS

Due to the nature of voluntary participation, the study sample may not fully reflect the full range of views on AI in the creative sector. Those who choose to participate may share certain characteristics or hold views that are potentially different from those who choose not to participate. There is a possibility that the results will be skewed towards certain views.

LITERATURE REVIEW:
AI IN THE ILLUSTRATION &
DESIGN INDUSTRY

{2.1} INTRODUCTION TO THE STUDY

Technology and design or illustration have intersected many times throughout the history of the industry: the idea of using digital media in design is not new, according to Dietrich (1986), the first works created at the intersection of these superlatives appeared as far back as 1965. Dietrich's article tells the early history of computer art, emphasizing the pioneering use of computers in creative expression. It explores the academic and technological depth of the fusion of art and technology that has attracted the interest of numerous researchers and doctoral students. In addition, the article examines the early attempts of computer art to gain recognition in the traditional art world. These findings are critical to understanding the development of computer art and its impact on the fields of illustration and design, especially in the context of artificial intelligence.

At a time of rapid growth in the popularity of AI, scholarly works today, including "Content creation or interpolation: AI generative digital art in the classroom" by Hutson and Lang (2023), raise questions about the nature of the interaction between creatives and technology. This study highlights the evolving emotional responses of students towards AI tools, from initial skepticism to rapid experimentation, frustration, and boredom. It emphasizes the potential of AI tools to transform the art and design fields while underscoring the importance of recognizing their limitations. The findings also suggest that AI tools offer students novel sources of inspiration and innovative solutions to fine art and design challenges, prompting a reevaluation of traditional art and design curricula. As such, the work invites reflection on whether we are witnessing a technology-human partnership or a distinct, computer-human co-creation in the realm of art and design.

Echoing these concerns, Lambert et al. (2013b) in their seminal work "The Emergence and Growth of Evolutionary Art—1980-1993," ponder a similar theme. They ask, "Do artists find a way to give technologies an aesthetic outlet, or do some

technologies possess—or facilitate—a characteristic aesthetic that finds its expression through specific artists?"

The study explores the evolution of computer art, highlighting how artists established fundamental rules for developing computer graphics. They used a mutation system for selection based purely on aesthetics, facilitating rapid exploration of multidimensional parameter spaces. This method resulted in intuitive, artist-friendly interfaces and the innovative use of cross-breeding to refine aesthetically pleasing outcomes. The research also underscores the inherent unpredictability in digital art creation, drawing parallels with the unexpected results found in traditional mediums like pigment chemistry or stone densities. These findings illuminate the complex interplay between artists, technology, and emerging digital aesthetics.

The nonprofit Future of Life Institute published the letter, which claims that machine learning systems are currently being developed and implemented in AI labs in a "out-of-control race" that no one, not even their creators, can comprehend, predict, or reliably control (Vincent, 2023b). People are anxious not only for fear of losing their jobs or seeing their intelligence overused, but also for fear that AI development will at some point turn in a dangerous direction.

A more provocative question might be: will humans eventually become redundant in this process? Are the lines between created and computer-generated images becoming, or already becoming, completely blurred? Or is the fear of technology not only unjustified, but also necessary to help design and illustration to develop further?

As Adrienne LaFrance discusses in the article "When People Feared Computers," the early 1980s ushered in an era of "computerphobia," individuals were gripped by an intense fear of physically touching computers or damaging their inner workings (LaFrance, 2015). The fear that the machine will subjugate man has not come about in recent years either. As Strassmann writes in his book "Information Payoff", people did not realise that learning to use a computer was more like learning a musical instrument than operating electrical appliances (Strassmann, 1985). This analogy underscores the depth and complexity involved in becoming proficient with computers, suggesting that it requires continuous practice, a

deep understanding of underlying principles, and a certain level of creative engagement, much like mastering a musical instrument.

Does the fear of AI actually arise from the fear of not learning how to use it and ceasing to be in demand in the labour market? Such a theory is supported by the already mentioned work “Content creation or interpolation: AI generative digital art in the classroom”, in the course of the experiments, the author observed that students’ willingness to engage with AI in creative processes increased over time, noticing the irreplaceable role of human creativity in the synergy between computers and designers (Hutson & Lang, 2023). This fear was so widespread that people subject to it became known as “computerophobes”, as defined in “Computerphobia. Behavior Research Methods Instruments & Computers” (Rosen et al., 1987). The study highlighted that individuals with less computer experience exhibited higher levels of computer anxiety. It also found a negative correlation between computer anxiety and positive computer-related cognitions and attitudes, suggesting that apprehensions towards computers were more significant among those with negative perceptions of technology. As AI continues to advance, might we see the emergence of a new term, ‘Alphobe’, to denote those who fear it? The parallels between past attitudes towards computers and current perceptions of AI could be indicative of similar demographic influences and apprehension patterns towards new technologies.

This question can only be answered by a close examination of the curse aspect of “The impact of artificial intelligence on the illustration and design industry: is AI a threat or an opportunity?”, considering not only the psychological aspects of the impact, but also the social, economic and ethical implications. In fact, AI work is now opaque, and sometimes AI patterns learn from other illustrators’ work, turning the designer’s name into a tag that reproduces the artist’s complex work in minutes, as Melissa Heikkilä describes in an article by Greg Rutkowski in MIT Technology Review (Heikkilä, 2022).

The problem is compounded by the fact that AI has a direct impact on the market (Berke, 2023)—the

cost of producing work for companies is reduced, and potentially companies may start to prefer AI to a designer or like designers who can work with AI, and an illustrator or designer may be forced to learn AI, even if they are against it because of the ethical implications and want to wait for a guidance system to emerge for interaction with it. Berke’s study reveals a stark divide in perspectives: while illustrators grapple with ethical concerns and pressures to adapt to AI, company managers view AI as a pragmatic, cost-effective innovation. This juxtaposition underscores a broader industry dilemma: the balance between rapid technological advancement and the preservation of traditional, human-centric craftsmanship. This raises a question: are efficiency and speed the primary keys to success in today’s creative landscape? Should we—and the marketplace—reconsider the value of slowness and embrace the virtues of thoughtful craftsmanship?

According to Diaconescu (2019), the concept of efficiency should change with the advent of AI and other tools that speed up processes and simplify revenue generation. Efficiency has become a fundamental value of society, affecting many areas including government, education, science, art and health. The exclusion of the humanities from university programmes and the measurement of success by profit margins are examples of this trend. Diaconescu warns that such a singular focus might lead to overlooking long-term impacts and values vital for a holistic societal development. As a result, policies that prioritise efficiency are becoming more and more accepted and unquestioned. On the other hand, this emphasis on efficiency can lead to a paradoxical situation in which people and organisations become aware of their long-term inefficiencies (Diaconescu, 2019).

This study aims to examine how artificial intelligence is impacting the design and illustration industry and to highlight its potential future trajectory. The following sections provide a brief history of AI in art and design, followed by an in-depth look at the current landscape of AI tools in the illustration industry. It also delves into the technical aspects of AI technologies and explores their transformative impact on AI art. Through the examination of these key aspects, the research will seek to answer the main question—is AI a threat or an opportunity?

{2.2} THE EVOLUTION OF AI IN ART AND DESIGN: A HISTORICAL PERSPECTIVE

The 1980s saw the development of computational design, which made modular design feasible and scalable.

Early computer-aided design (CAD) programs such as PRONTO and SketchPad offered architects greater control over geometry, allowing for better collaboration and faster design iterations. As described by Sutherland (1964) in “SketchPad a Man-Machine graphical communication system”, SketchPad was a revolutionary development in CAD, marking a significant shift in design methodology. It enabled more precise geometrical control, thus transforming design processes in various fields. Sketchpad was an integral part of Sutherland’s doctoral thesis at MIT and is indirectly related to the computer-aided design project of the time. Its influence extends beyond its immediate application, laying the groundwork for modern computer-aided design and interactive graphical interfaces.

The advent of the personal computer in the early 1990s led to the recognition by architects and designers of these machines as an excellent tool for drawing. As Bird and Labelle (2010) emphasize, this was an important turning point: computers made the process of drawing easier and opened the way for new types of drawings that would have been difficult to create by hand. Furthermore, their paper delves into the complexities of preserving digital architectural designs. Highlighting the importance of maintaining the integrity and context of digital works, this study brings to light the challenges of archiving and preserving digital creations, an aspect increasingly relevant in the age of AI-generated art.

2.2.1 AI-GENERATED ART: A NEW ERA

The most significant leap in developing AI in designing and illustrating happened in the 21st



{FIGURE 2} Engineer using a light pen on the TX-2 computer for CAD, 1962-1963, MIT Museum



{FIGURE 3} First magazine cover generated by an AI, Cosmopolitan

century. According to Oksanen et al. (2023), we are living in a time of profound social and cultural change, and artificial intelligence technologies are becoming more advanced (Oksanen et al., 2023). Their research systematically reviews the use of AI across various forms of fine arts, highlighting its impact on artistic creation and perception. In 2022, Cosmopolitan released its first magazine cover generated by an AI program named DALL-E 2 (Liu, 2023). While this is the essential milestone that marks AI’s entry into mainstream culture, and as Clarke (2022) describes in the Guardian, technology investors jumped at the chance to usher in the new era of “generative AI”, Oksanen et al. provide a broader context, illustrating how AI’s integration is reshaping the arts sector, including design and illustration, and altering societal perceptions of art. Many illustrators and designers aren’t happy.

As Liu (2023) reports, the cover reads, “Meet the World’s First Artificially Intelligent Magazine Cover... And it only took 20 seconds to make”. Chang mentions that’s only partly true. “Every time you search, it takes 20 seconds,” Cheng says. “If you do hundreds of searches, then, of course, it’s going to take quite a bit longer. For me, I was trying to get, like, a very specific image with a very specific vibe.”

Launching DALL-E 2 is a major event in AI arts, and in more ways than one. In the “The future of advertising campaigns: The role of AI-generated images in advertising creative” by Matthews et al. (2023) study with advertising agencies in New Zealand, focus groups assessed the impact of DALL-E 2 through analysis of its use in a simulated Volkswagen advertising campaign. These discussions, which focused on the quality and collaborative aspects of the AI-generated imagery, revealed a wide range of responses. Participants identified both potential and concerns about the role of the DALL-E 2 in the creative production process and its impact on the role of the human being in the creative process.

Such technologies are likely to significantly change the creative professions, the study concluded (Matthews et al., 2023).

Indeed, AI-created art raises important questions about the nature of creativity and the role of AI in the creative process. According to Everypixel, “since the release of DALL-E, people are creating an average of 34 million images daily. According

to the report, it took us humans 150 years to accumulate 10% (15 billion) of that total, illustrating the surprising—and equally concerning—potential of machine learning” (Designboom, 2023). It’s important to note that DALL-E wasn’t the only AI tool to trigger the recent AI boom: MidJourney is also an important part of it. According to the company’s website, Midjourney is a “self-funded team focused on design, human infrastructure, and AI” was founded July 12, 2022. In their work, Borji (2022) states that Midjourney is an open beta programme that can create images from text descriptions; artists find it especially useful for generating surrealistic images, showcasing the tool’s ability to expand creative horizons in art and design. Borji’s research underlines the significance of AI in revolutionizing artistic creation, particularly in producing imaginative and novel visual content (Borji, 2022).

Whereas DALL-E immediately became a paid service and only gradually became more native to its users, as of December, DALL-E 2 is part of the GPT chat, which made it easier to use, but still only available to those using the paid version, according to Rogers (2023), Midjourney was initially easy for Discord (instant messaging service, Ashworth (2022)) users and offered a free version where any user could create an image without any prior technical knowledge. Positively, it opens the art world to more people and simplifies some aspects we explore later in this study (Chen, 2023). Nevertheless, we have important questions to answer about authorship, uniqueness, emotion and how to value art created by humans versus art created by machines (Horton et al., 2023). In Horton et al.’s 2023 study, a notable finding is the prevalent bias against AI-generated art. When art is labeled as AI-created, it tends to be devalued by audiences, despite difficulties in distinguishing it from human-made art. This bias affects perceptions of skill, monetary value, and artistic merit. Intriguingly, the study also reveals that when juxtaposed with AI-made art, human-made art is perceived as more creatively valuable. This phenomenon highlights the complexities in valuing art in the AI era, raising questions about the appreciation of human creativity in a



{FIGURE 4} AI-Generated Fake Image of the Formal President of the United States being arrested. This image went viral, receiving millions of views in a few days

landscape increasingly influenced by AI technologies. Making the tool available to anyone seems like an interesting and useful thing to do, allowing anyone to touch AI and get involved in developing the technology, but firstly, can the tool get into the hands of those who would, for example, create political propaganda, making fake images? This scenario is not impossible after the news of spring 2023, if we have in mind the fake pictures of Trump’s arrest. They did look real (Stanley-Becker & Harwell, 2023).

Is the development of artificial intelligence a step forward in our technological and societal progress, or is it actually a step back?

{2.3} IMPACT OF AI ON WORKFLOW EFFICIENCY AND PRODUCTIVITY

As has already been highlighted, the creative workflows of communication designers and illustrators are currently undergoing a transformation. As we learned from Matthews et al. (2023) study, it's expected that by integrating AI-driven tools and frameworks, these professionals will be able to increase their efficiency and produce higher-quality designs faster. But what does this process look like at present?

2.3.1 UNDERSTANDING CURRENT WORKFLOW CHALLENGES

Across industries and professions, productivity is a universal challenge — not only in creative ones (Baines et al., 2018). The paper provides a comprehensive framework for analyzing productivity in the context of pharmacy practice, highlighting the importance of technology in enhancing efficiency. This framework can be extrapolated to other fields, including creative sectors like graphic design, illustration, and art. It suggests that technological advancements, similar to those in pharmacy, can play a pivotal role in optimizing productivity, potentially reshaping how creative work is approached and evaluated. Bob Pozen, a senior lecturer at the Sloan School of Management at the Massachusetts Institute of Technology, conducted a study to understand why some people are more productive than others (How Does Your Productivity Stack Up?, 2019). The study provides valuable insights into how to improve productivity in the workplace, revealing the common habits and skills of highly productive managers.

The survey instrument, called the Posen Productivity Rating, consisted of 21 questions grouped into seven key areas: plan your schedule, develop your routine, manage your news, get things done effectively, develop your communication skills,

run effective meetings and delegate. The study identified a set of habits and skills that correlate with higher levels of productivity: {1} Priority-based planning: Productive professionals prioritise their work based on their key tasks and act with a specific goal in mind. {2} Managing information overload: Effective techniques for managing large amounts of information and tasks are critical to maintaining productivity. {3} Understanding the needs of colleagues: Highly productive people have a deep understanding of the needs of their colleagues.

In design and illustration, where the nature of the work requires extensive interaction with digital platforms, this issue is particularly relevant. Professionals in these fields are often in need to spend hours through digital sites for inspiration, to participate in online communities (which are often seen as essential for career progression), and to stay in regular contact with colleagues and clients. According to Gloria Mark's (2008) research, distracted individuals work more quickly (as a result of trying to compensate for time spent being distracted), and after 20 minutes of project work, their stress level is significantly higher. Mark's study highlights the hidden cost of this increased efficiency: a substantial rise in stress, frustration, and effort. This aspect is crucial for professionals in creative fields, underscoring the need for balance between productivity and well-being in digitally driven work environments.

According to an article on Design Spotify, each designer may be suited to a different framework, so it is important to recognise this and map it (Measuring, Defining and Improving Productivity: The Design Productivity Blueprint, n.d.).

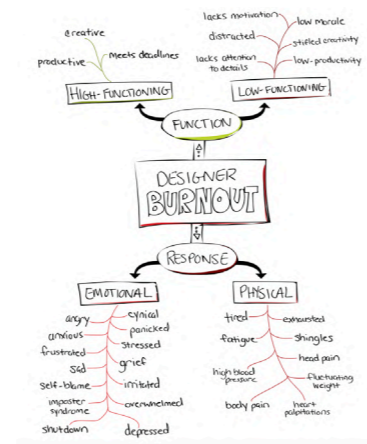
Unlike more linear tasks, creative work better be not rushed. It is virtually impossible to be creative without having an adequate amount of time to process complex cognitive information (Amabile et al., 2002). Sometimes speed and pressure can lead to creativity, the author points out, citing the Apollo 13 crisis and quick response as an example, but these are rare cases that, combined with the Gloria Mark study noted above, can still lead to long-term stress. Amabile et al. emphasize that while urgency can spur short-term creativity, it's generally counterproductive for sustained creative work. Over time, the quality and novelty of creative solutions degrade under constant pressure.

Therefore, it's crucial to find a balance between urgency and the necessary time for creative thinking.

As it has been learned, stress, anxiety can severely hamper creative output. What does it leave designers and illustrators with? According to the American Institute of Stress, job stress is estimated to cost American industry more than \$200 billion a year (Rice, 1998). 22 years later, in 2020, Nakia Shelton conducted an experiment using the design-thinking framework to understand the causes of burnout. Burnout is “a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed” (World Health Organization: WHO, 2019). Shelton’s participants indicated that the roots of burnout in the creative field are often linked to the hustle culture, potentially traced back to design education practices.

But there are other reasons for designer burnout. According to Wilson (2022), performing monotonous tasks is also leading designers to burnout. This is also corroborated by research in other fields, where the so-called boredom that arises from, for example, repeating the same tasks, leads to a loss of interest in work, which gradually leads to burnout (Schaufeli & Salanova, 2014). As stated in the work done by Loukidou et al. (2009), “in spite of boredom being a basic human emotion”, this aspect is often overlooked in attempts to make a person’s workflow more interesting and engaging, shifting focus to positive aspects such as salary and so forth.

Moreover, one study (Bunjak et al., 2021) found that the cognitive absorption of workers during periods of high technological overload is a cause of burnout. The study further indicates that while engagement with technology can spur creativity, it’s a delicate balance. Excessive immersion leads to emotional exhaustion, undermining creative productivity. The findings of the research confirm the hypothesis that fostering cognitive engagement with technology can enhance creativity. However, according to author, it is crucial to regulate the extent of technological immersion to avoid emotional exhaustion and sustain a robust level of creative productivity.



{FIGURE 5/ Designer Burnout Mind Map by Nakia Shelton, 2020

The hypotheses proposed in the early 2000s suggested that deep immersion in technology could lead to a fundamentally new experience in software interaction (Agarwal & Karahanna, 2000). These theories emphasized two critical factors for a successful user experience: the simplicity of the software and the benefits derived from its use. Agarwal and Karahanna’s study further elaborates on this by introducing the concept of cognitive absorption, a state of deep involvement with software. They argue that cognitive absorption significantly influences user perceptions of technology, particularly its perceived usefulness and ease of use. This concept is essential in understanding how users’ immersive experiences with technology affect their attitudes and beliefs about its functionality and effectiveness.

Does this resemble the interaction currently happening with AI, and can it address the existing issues in Design Workflow?

2.3.2 UNDERSTANDING WHAT AI CAN PROVIDE FOR CHANGING DESIGN PROCESSES

Among the problems that could be solved by AI—not just the graphical tools, but also other startups that exist in the field by autumn 2023—include features such as potentially reducing repetitive “boring” tasks. For example, AI can help to send emails quickly, schedule tasks, and act as a personal assistant to workers, according to the “Generative AI: Use case scenarios | CSAIL Alliances” article. The ability to automate tasks where creativity is not critical, but repetition is, can be solved by AI. These tasks can often be “boring” and time consuming to perform. By delegating these tasks to AI algorithms, designers can free up valuable time for more creative tasks. Let’s take a look at some specific examples:

An example of AI automation in communication design is the removal of backgrounds from images. Traditionally, designers spend a lot of time manually selecting and removing backgrounds from images, which can be a tedious and time-consuming process. However, AI-powered tools—for example, remove.bg—have made this task much more efficient. Using artificial intelligence algorithms that have been trained on vast amounts of data, these tools can intelligently identify the foreground and background elements in an image and accurately

remove the background with just a few clicks of the mouse. Designers can simply select an image, apply the background removal tool, and let the AI do all the work. Not only does this save time, but it also ensures that the cuts are accurate and clean, allowing designers to easily incorporate the main object into their designs.

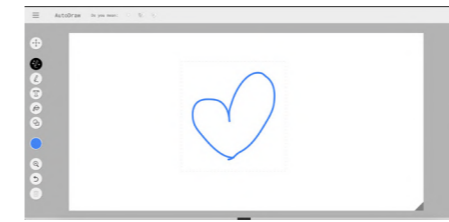
Mansor's 2023 article discusses how AI tools can be used to improve image quality. Essentially, when dealing with old photos, they often have problems like broken or missing pixels that cause poor quality. These are the little dots that make up the image, and if they're damaged, the image looks incomplete or distorted.

This is where AI comes in, by 'learning' how to fill in these broken spaces. It does this by analysing the pixels around it and using the patterns or similarities that it finds to predict what the missing or damaged pixels should look like. In other words, the AI makes educated guesses to restore the image. Put simply, AI is used to intelligently repair and improve the quality of old photos by predicting and replacing the damaged parts of the image. It can be used for designers, for example, while working with the old collages (Mansor, 2023).

There's also an unexpected direction for using AI in design: according to an article in *It's Nice That* magazine (Can AI Help You Win Your Next Brief?, 2023), shows a new way AI can help designers. It emerges as a facilitative tool, particularly useful during the ideation phase, especially when clients are uncertain about their preferences or requirements.

What's more, the author explains, using examples from various studios, such as the text-based Chat GPT, AI can be used to come up with different ideas, such as suggesting an idea to a client that hasn't been considered before. It can also be used for e-mail writing, while this is not a directly creative activity, it is a necessary component of the design workflow for communication with a client. In other words, the material suggest rather than viewing AI as an independent idea generator, it is more a tool to see it as a supportive tool that aids in the development of a designer's concepts. It can also cut out or speed up uninteresting parts of the task.

Exploring AI products that can potentially simplify a designer's workflow, one can look at AutoDraw.



{FIGURE 6} Screenshot of Experimentation with Google's Auto Draw for This Thesis

AutoDraw is notable for its AI system that suggests professional icons based on a user's initial sketch—this feature appears to rapidly transform simple drawings into polished icons. As a user begins to sketch their idea with the mouse—creating a rudimentary representation of the intended design—AutoDraw's AI begins to suggest professionally drawn images that match the user's sketch. This feature enables the instant transformation of a raw concept into a polished icon. In this way, AutoDraw serves not only as a design tool, but also as a co-creator in the design process, bridging the gap between a concept and its realized form.

In 2023, artificial intelligence technologies are providing tools to improve the tracking and organisation of design projects. Taskade is one example of this trend. This tool is particularly useful for remote coordination with distributed teams and for asynchronous task tracking, making it easier to create and manage workloads. Taskade simplifies the overall management of design workflows by helping to organise projects, write pitches or project descriptions, and schedule tasks.

{2.4} REAL-WORLD APPLICATIONS OF AI GENERATORS IN DESIGN

2.4.1. A CASE STUDY OF SARA DRUMMOND

Sara Drummond, a service designer from London, is an example of the effective use of AI generators in design. She moved from manually creating sketches to using AI-generated images as a way to visually conceptualize various processes in need of optimization, such as a line of customers waiting at a store checkout (Drummond, 2022).

Drummond used to spend a lot of time creating these elementary sketches. Now, thanks to artificial intelligence generators such as DALL-E 2 or Midjourney, she can quickly enter her requirements—for example, “Woman at checkout, black and white illustration”—and quickly get a polished, professional image, as she says. However, Drummond acknowledges that AI image generators have their limitations. They tend to fail at creating complex sketches or sequences of images with a recurring character. Importantly, she doesn’t think AI will completely replace human illustrators.

When it comes to the final product, Drummond prefers to hire an experienced artist to fully realize the intended design. But for early-stage she sees value in AI generators.

In essence, AI generators can be thought of as a new “sketching tool” — a means to quickly create preliminary designs or ideas that can then be improved, expanded, and refined by human designers. This view emphasizes the concept of synergy between AI and human creativity, rather than replacing them entirely.

2.4.2 A CASE STUDY OF LOST LORE: MOBILE GAME DEVELOPMENT WITH AI

This case study evaluates the impact on efficiency, cost and quality of Lost Lore Studios’ innovative

use of AI in mobile game development, specifically in the creation of visual art (AI USE CASE: How a Mobile Game Development Studio Saved \$70K in Expenses | Game World Observer, 2023).

Lost Lore Studios wanted to overcome the traditional challenges of developing games—high costs and long lead times—by implementing AI into the workflow. The initiative, which was led by Art Director Vlad Martyniuk over a period of three weeks, involved the use of AI to accurately create art and to iteratively refine the results.

The integration of AI significantly reduced the cost of visual art production by a factor of 10-15 and cut production time from 34 working days to less than a week, without compromising quality. By accelerating prototype testing, studio could speed up development and effectively manage risk, also, there was a reduction in the size of the team due to the focus on skilled individuals that know AI.

Both examples show that professionals such as designers or illustrators remain indispensable in the symbiotic relationship between humans and artificial intelligence. Working alongside technological tools, these people play a role similar to that of an art director. From these examples, we can expect that in industries where operational efficiency is key, there will be growing demand for professionals who not only embrace AI, but also harness its capabilities. However, it is worth noting that there is a lack of established guidelines and frameworks for integrating AI into existing workflows, given the early stage of AI development. It is still largely impossible to predict the impact and long-term consequences of this technological development.

In addition, a number of ethical issues that have yet to be explored have been highlighted in these cases. These include serious questions about intellectual property rights and consent, with the unauthorised use of illustrators’ and designers’ work in AI training datasets. This situation raises the question: In their quest to improve efficiency through AI, will companies ignore these ethical dilemmas? And, importantly, should efficiency be the sole measure of designer/illustrator effectiveness in an AI-enhanced workplace? These questions highlight the need for a more holistic approach. One that considers the ethical, legal and practical aspects of AI integration.

{2.5} ETHICAL AND LEGAL CHALLENGES OF AI IN ART & DESIGN

2.5.1 ETHICAL CONSIDERATIONS

What exactly is the ethical issue with AI? As mentioned above, there are more than enough ethical issues to deal with in both the implementation and the creation of artificial intelligence. Bridy (2011) discusses the complexities surrounding copyright and property rights when AI is the producer of art, challenging traditional notions of authorship and creation. This highlights the need for legal frameworks that can adapt to the evolving landscape of AI-generated content.

An interview discussing an article highlighting the work of a group of 14 researchers, including MIT postdoc Ziv Epstein, attempting to address the direct implications of generative AI on creativity and society (If Art Is How We Express Our Humanity, Where Does AI Fit In?, 2023) raises several ethical issues. The discussion points out the anthropomorphism in AI systems like ChatGPT and its implications for accountability and ethical responsibility. One point worth noting is the way in which AI systems, such as Chat GPT, use personal pronouns such as “I” and display behaviours that are similar to human interactions, such as offering support. This creates a blurred line between technology and human attributes, raising concerns about user perception and developer responsibility.

For designers using AI, there’s also a dilemma.

The paper underscores the ethical and creative conundrums faced by artists incorporating AI into their work, questioning the true ownership of AI-assisted creations. Especially if they incorporate elements or tags from other people’s work, can they rightfully claim it as their own? Who really creates such works is a complex question. Is it the AI, its creator, the artist whose work trained the AI, or the illustrator/designer/artist using the AI as tool? The author emphasises how important it is to address these questions of authorship. At present, the

immediate ethical issues that need to be addressed may be overshadowed by the focus on the future potential of AI.

What is more, the training processes for AI systems such as Midjourney are not entirely transparent. We don’t have a full understanding of how these systems use work already in existence to create new work. Plagiarism by one designer of another’s work is addressed by legal systems in traditional settings. However, in the context of AI training data, plagiarism’s definition and implications are unclear. It’s important to address the ethical, technical and legal dimensions of this issue. Currently, rights and responsibilities in this new AI-influenced landscape seem poorly defined and need to be more fully understood and clarified.

2.5.2 LEGAL CONSIDIRATIONS

In order to address not only the ethical dimensions, but also the legal aspects of the creation of images with the help of artificial intelligence, let’s consider the insights from Spindler’s (2019) paper that presents several interesting points regarding AI and copyright law. He explores the complexities of attributing authorship to AI-generated works, emphasizing the unpredictability of AI behavior in the creative process. The paper argues that while AI can learn from data and improve its patterns, it still lacks the legal definition of intelligence and cannot set its own goals, maintaining the importance of human input in the creative process. Spindler also discusses the legal protection of AI, focusing on AI as code under the EU Software Directive, and the status of data used and produced by AI systems.

He notes that while data generated by AI might qualify as a trade secret, it currently lacks the stronger protection offered by copyright law. This nuanced analysis underscores the evolving legal challenges in the realm of AI and creativity.

Xue and Zhou’s (2021) also highlight the inadequacies of current copyright laws when applied to AI-generated art, challenging existing notions of originality and authorship. Furthermore, they emphasize the need for reevaluating the legal definition of an ‘author’ in the wake of AI advancements, pointing to the complex interplay between human creators and AI systems in the creative process. This underscores the need for legal frameworks to evolve, recognizing the unique characteristics

of AI in creative fields and prompting potential legislative updates to properly address copyright and ownership issues in AI-generated content.

Holtermann et al. (2021) paper provides more detailed insights into how AI challenges traditional legal frameworks in patent law. The paper specifically examines how AI impacts the concept of the 'skilled person' used in assessing patent claims and infringement. They discuss the limitations of human knowledge and skills compared to AI's capabilities, suggesting that AI could either replace the 'skilled person' or be viewed as a tool available to them. This raises questions about the adequacy of current legal definitions and practices in patent law, especially considering AI's capacity to process information with unprecedented breadth and speed. The authors argue for a reevaluation of the 'skilled person' concept in light of AI's capabilities, which could lead to significant changes in how inventive steps and patent infringement are evaluated.

Androshchuk (2022) provides a comprehensive perspective on the varying approaches to AI and intellectual property across different jurisdictions. The paper highlights key international resolutions, such as the European Parliament's 2020 resolution on AI and intellectual property rights, and the AIPPI's resolution on AI in inventions, showcasing the diverse legislative landscapes. It also delves into the practices of major patent offices like the EPO, USPTO, and UKIPO, illustrating the differing legal interpretations and applications in these regions. This comparative analysis underscores the lack of a unified global approach to AI's authorship and rights issues, emphasizing the need for harmonized legal standards in the increasingly AI-integrated fields of art and design.

Byungun Yoon's (2022) paper offers a comparative analysis of UK and Korean copyright laws concerning AI-generated works. It highlights the UK's categorization of AI creations as computer-generated works, providing them some copyright protection. In contrast, Korea lacks specific legislation for AI in this context. This disparity further underscores the need for international legal harmonization, as varying national laws can lead to different treatment of AI-generated art, affecting creators and users globally.

2.5.3 ANDERSEN, MCKERNAN, AND ORTIZ VS. STABILITY AI, MIDJOURNEY, AND DEVIANTART: A CASE STUDY

In a recent legal development, artists Sarah Andersen, Kelly McKernan and Carla Ortiz have filed a lawsuit against Stability AI and Midjourney, the companies behind the Stable Diffusion and Midjourney AI generators, as well as DeviantArt, the developer of the DreamUp AI generator (Vincent, 2023). The use of some five billion images from the internet to train these AI tools, without the permission of the original artists, is at the heart of the lawsuit. This constitutes a serious infringement of their copyright, the plaintiffs argue. To argue their case, they have enlisted the legal expertise of Matthew Butterick and Joseph Savery. Their main concern is that both individual artists and the wider art market could be irreparably harmed by AI tools such as Stable Diffusion flooding the market with a plethora of copyright-infringing images.

AI companies have responded by offering a defence based on fair use. They argue that their software does not actually store the images; rather, it uses mathematical representations of pictorial patterns to create new, original works. This aspect of the lawsuit delves into a complex area of the law. A key question, currently shrouded in legal grey areas and awaiting resolution in court, is whether the use of copyrighted images to train AI models can be legally defended under the umbrella of fair use. Adding to the complexity is the fact that these AI tools have different origins and purposes. For example, Stable Diffusion was trained on the LAION dataset, a creation of a German non-profit research organisation. The way in which fair use arguments are perceived and adjudicated may be influenced by the non-profit status of the entity behind the dataset.

Certain technical inaccuracies in the lawsuit have also been criticised. For example, it claims that AI art models store "compressed copies of training images" to then recombine them. In reality, these models work on the basis of mathematical patterns derived from the images and do not store the images themselves. As of May 2023, the lawsuit is still pending, and neither of the parties has made any extensive public comments on the matter. The final outcome is expected to have significant implications for how AI and art intersect.

This case also brings to light broader issues that go beyond the legal realm, such as the questions of authenticity and privacy in the merging of AI with the art and illustration industries. There is an ongoing and evolving discourse on the authenticity and aesthetic value of AI-generated artworks. The concept of ‘authenticity’ in art is central to this discussion. Is it possible to equate the value of a work of art created by an AI that is devoid of consciousness or subjective experience with that created by a human artist, whose creative output is often a reflection of their personal experience and emotional depth?

2.5.4 LEGAL SOLUTIONS

As Rinkerman (2023) advocates in his recent publication, contemporary legal frameworks necessitate adaptation to accommodate the emergence of Artificial Intelligence (AI), particularly in scenarios where conventional copyright and patent laws may be insufficient. Firstly, the author proposes a case-by-case examination of instances involving AI-generated works, emphasizing the identification of human contributions within these creations. This approach involves a detailed consideration of the diverse stages and individuals participating in AI processes. Rinkerman also delves into the complexities of AI in relation to authorship under U.S. copyright law, addressing the nuanced technological and conceptual aspects. He explores various cases and legal decisions to underline the evolving interpretation of AI’s role in creative processes. His analysis underscores the intricate balance between human and AI contributions in determining copyright eligibility, highlighting the ongoing legal debates and shifts necessitated by AI’s growing influence in creative domains. Furthermore, Rinkerman suggests exploring alternative forms of intellectual property protection, as well as unfair competition laws, as potential supplements or replacements for traditional copyright and patent principles in the AI context.

{2.6} THE ECONOMICS AND EVOLUTION OF AI IN THE ART AND DESIGN INDUSTRY

Building on the framework established in the first chapter, which examined the origins, evolution, impact and ethics of AI in the art and design industry, we will now examine the economic implications of this shift. The aim of this chapter is to highlight changes in market dynamics and labour issues in the sector in order to examine the economic implications of AI integration.

2.6.1 AI IN THE ART AND DESIGN CLASSROOM

In the context of AI’s growing influence in the art and design industry, let’s first explore how AI is changing the way art and design are taught and learned. This change is important for understanding what skills future professionals will bring into the workforce and how this might shape the industry’s economic and creative future. This discussion aims to provide insights into how education in this field is adapting to include AI, preparing students for a job market that is increasingly intertwined with these technologies.

Timms (2016) envisions the integration of AI in education beyond traditional computer interfaces, proposing the use of educational collaborative robots (cobots) and smart classrooms. This approach not only enhances teaching effectiveness but also fosters interactive learning environments. The paper underscores the potential of AI to facilitate dynamic social interactions and new interfaces between learners, teachers, and technology. Timms’ vision for AIED emphasizes its role in transforming educational settings, highlighting the need for innovative approaches in integrating AI into creative disciplines. This perspective is particularly relevant in understanding how AI can change learning and teaching methodologies in fields like graphic design and art. Cotroneo & Hutson (2023) study on generative AI in art education reveals mixed student reactions. While most valued AI for its role in the creative process, opinions were split on its impact on final artworks

and future usage. This suggests a need for further research on AI's long-term influence in art. The study highlights that students developed a better understanding of AI's role and the significance of their input in creating AI-generated images. It underscores the importance of integrating prompt engineering and direct AI tool interaction in education. The varied student approaches to reinterpreting AI-generated images demonstrate AI's potential as a creative catalyst. The study recommends incorporating AI at different stages of the creative process to fully realize its potential in art and design.

The paper "Exploring the Impact of Artificial Intelligence and Robots on Higher Education through Literature-Based Design Fictions" by Cox (2021) delves into the potential long-term effects of AI and robotics on higher education. It employs design fictions, narrative scenarios that imagine future applications of these technologies, to stimulate discussion and explore their implications. The paper discusses eight design fictions, each focusing on different aspects of AI and robotics in learning, administration, and research. These scenarios prompt consideration of issues like teaching high-order skills, changing staff roles, human agency, and datafication in the educational context.

Each narrative explores different facets of AI and robotics in a university setting:

Fiction 1: "AI Dan the Teaching Assistant" — Explores the use of AI as a teaching assistant, delving into its role in enhancing the learning process.

Fiction 2: "Footbotball" — Focuses on social robots in learning, examining how they can be integrated into educational environments.

Fiction 3: "Criticalbot in Conversation" — Looks at the role of conversational AI in stimulating critical thinking and engagement.

Fiction 4: "The Intelligent Campus App" — Imagines a campus integrated with an intelligent app, enhancing various aspects of campus life and administration.

Fiction 5: "The Research Management Suite TM" — Considers the impact of AI and robotics on research management and facilitation.

Fiction 6: "Verbatim Minutes of University AI Project Steering Committee: AI Implementation Phase 3" — Discusses the challenges and strategies in implementing AI technologies at a university.

Fiction 7: "Dashboards" — Explores learning analytics and datafication, particularly the use of data dashboards in managing and understanding educational processes.

Fiction 8: "Minnie — The AI Admin Assistant" — Imagines an AI-powered administrative assistant and its role in university administration.

Each fiction presents a unique perspective on the potential integration of AI and robotics in higher education, aiming to stimulate discussion and reflection on the future of these technologies in academic settings.

In Fathoni's (2023) paper "Leveraging Generative AI Solutions in Art and Design Education," the focus is on the dual-edged impact of AI in creative education. While highlighting the opportunities AI presents in enhancing innovation and sustainable design, Fathoni also flags concerns about academic integrity. He warns against the potential misuse of AI tools as shortcuts, which could lead to a decline in genuine creativity and learning. The paper emphasizes the need for a balanced approach, advocating for the controlled integration of AI in educational settings to cultivate both creativity and ethical practices. The conclusion underscores the necessity of embracing AI responsibly to prepare students for a digitalized future, emphasizing the critical role of educators in guiding this integration.

2.6.2 NEW MARKET DYNAMICS

In a study by the World Economic Forum (The Future of Jobs Report 2023, 2023), forecasts that certain occupations will see significant growth as a result of artificial intelligence and machine learning. The study highlights the rise of artificial intelligence and machine learning experts, data scientists, digital transformation and many other important new occupations. The research predicts a 40% increase in the number of AI and machine learning specialists by 2027, alongside a 30-35% rise in demand for data analysts, scientists and big data experts. Information Security professionals are also expected to see demand rise by 31%. Additionally, the report reveals that the art and design sector will face significant changes due to AI's influence. This includes the growing importance of AI literacy and skills in these creative fields, indicating a shift in job roles and requirements. Businesses are adapting by prioritizing AI and big data training in their programs, particularly in larger firms. The report suggests that the success and economic impact in art and design will hinge on how effectively these industries embrace AI technology and upskill their workforce. These adjustments could create a total of 2.6 million more jobs.

As the research notes, the influence of AI is also likely to see certain occupations lose ground quickly, particularly those that are administrative and secretarial in nature, such as bank tellers and data entry clerks. As a result of these dynamics, firms are revising their training plans and placing more emphasis on the acquisition of big data and AI-related skills. According to The Future of Jobs in 2023 report, training in AI and big data skills is the third highest priority in companies' training programmes through 2027, and is the top priority for companies with more than 50,000 employees. The Forum's research highlights that while workplace automation continues to expand, jobs that require human skills such as coordination, decision-making, reasoning and communication are increasingly being mechanised as AI continues to transform the workplace of the future. This is largely due to the rapid adoption of generative AI by industry, with the Future of Workplaces research

finding that around 75% of businesses surveyed expect the use of AI to lead to significant job losses. A quarter of companies expect job losses, while half of them believe that AI adoption will lead to job creation. Overall, the economic impact of AI on the art and design sector will be determined by how well businesses can adapt to the changing environment and train their staff in the use of AI technology.

2.6.3 CASE STUDY & THE INTERVIEW: EDITOR-IN-CHIEF CALLS HERSELF A "MIDJOURNEY ENGINEER"

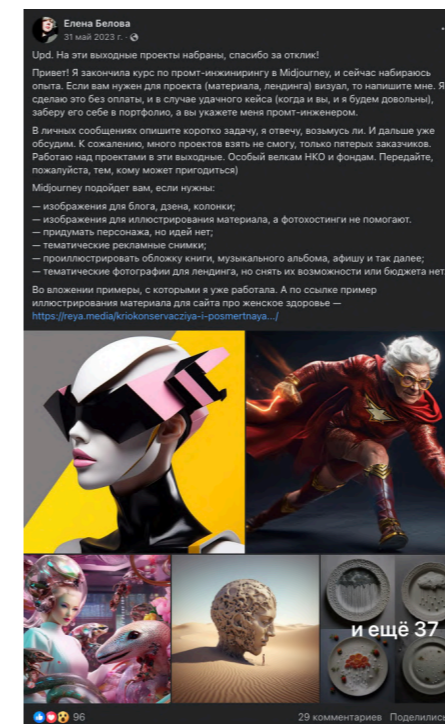
Elena posted on Facebook that she is ready to work with Midjourney as an artist and would help anyone who needs graphic design for their projects, such as materials or landing pages. We talked to Elena about her expertise.

An example of the transformative impact of AI technologies on art and design is Elena Belova, editor-in-chief and former photographer who completed Midjourney's engineering training. Elena was first drawn into AI by need.

Due to work constraints, including financial and authoring limitations, she found it difficult to implement specific initiatives. But through the use of AI tools such as Midjourney's prompting course, she has been able to overcome these limitations and maximise her creativity. Working with AI, especially when creating images from words, brought a sense of wonder to Elena's work. Creating something that did not yet exist was exciting and motivating for her. This interaction with artificial intelligence technology is, in her words, "above all a source of magic".

Elena believes that artificial intelligence (AI) empowers innovators and artists by giving them the tools to turn their fantasies into reality. AI also speeds up the creation of images, which is a huge advantage when design challenges require quick images but traditional artists are unavailable or take too long. Three main reasons led to her decision to enrol in an AI apprenticeship: the opportunity to unleash her creativity, the chance to work independently, and the chance to help non-profit organisations that lack visual resources.

Elena stressed that with the growing popularity of AI, it was important for her to learn these skills quickly to keep up with the market and meet the growing demand.



{FIGURE 7} The image depicts a social media post written in Russian from a digital artist Elena Belov who has completed a course on prompt-engineering with MidJourney.

The artist is offering their services for project-based work.

This case has some intriguing positive aspects — people who were previously unable to create visual work now feel more creative and fulfilled. On the other hand, does this mean that experienced designers and illustrators with training in the field and the ability to use traditional materials will now be in competition with people who can produce images much faster, cheaper and in larger quantities?

2.6.4 WHAT ARE THE POSSIBLE CHANGES IN THE MARKET?

Even now, the field is already undergoing major changes: according to Zhou and Liu (2023), the first and most negatively affected field is that of illustrators and game designers: already now, many of them are losing their jobs because many parts are being done with AI. Illustrators, the authors point out, are very frightened because they have drastically lost both a source of income and the opportunity to do what they love. But perhaps this is the market's first reaction to change, and things will get better from here?

Can we learn from and have confidence in the experience of the past? Let's turn to earlier work such as Cortés et al. (2017) "Disappearing routine jobs: Who, how, and why?", where the authors examine the decline of routine jobs in the US over the past 35 years, focusing on middle-wage occupations. Analytically, the paper shows that the development of automation technology causes workers to shift from routine occupations to non-routine manual work. The study also highlights the influence of demographic shifts, like the aging workforce, on this trend. However, the impact of automation technology alone is found to be relatively insignificant in explaining the observed changes in the labour market, with broader demographic and economic factors playing a key role. This includes changes in labor force participation across different demographic groups. The joint decline in routine employment and the associated increase in non-routine manual employment and unemployment is attributed to a complex interplay of these factors.

A similar conclusion was drawn by Fonseca et al. (2018) in their study of the Portuguese labour

market: there has been a growing need for professionals able to perform non-routine tasks, as well as a growing demand for workers who understand rapidly developing technology. Their findings indicate a significant decline in routine manual employment, paralleled by an increase in jobs requiring abstract, non-routine skills. This shift is attributed largely to technological advancements, particularly in areas that influence the graphic design, illustration, and art sectors. Fonseca et al. emphasize the necessity for workers in these fields to adapt to the evolving technological landscape, highlighting a future where AI and automation play a central role in shaping job dynamics.

Looking at a more specific area and more recent work such as Wang and Wang (2021), there has been a positive trend in the number of digital art jobs over the period studied. Contrary to the common belief that jobs for artists are concentrated in major cities or technology hubs, the study shows that they are spread across the country. Moreover, the research identifies a correlation between the proliferation of advanced digital tools and software in the digital arts and the rise in job opportunities. This expansion is not limited to typical creative centers but is distributed nationwide, reflecting a more inclusive job market for digital artists. This geographic spread indicates a broad demand for digital arts skills in different regions of the United States. In addition, the data collected in the study shows a significant number of high-paying jobs for artists, particularly in the digital arts. On LinkedIn, for example, around 32% of jobs are in the higher bracket of over 100k. This finding suggests that digital arts skills are not only in demand, but also highly valued in the labour market. The study also delves into the evolving nature of digital art professions, suggesting a paradigm shift in how these roles are perceived and compensated in the modern economy. The author concludes that, contrary to previous studies suggesting that jobs for graphic designers and illustrators were declining as a result of technological advances, they have actually started to increase and are spread across the country, not just in the big states.

{2.7} CONCLUSION

We have begun a nuanced exploration of the complex relationship between artificial intelligence and the fields of design and illustration by summarising the first chapter of this study. This chapter has provided a basic understanding of the current challenges and opportunities that AI presents to these creative industries.

We have also explored the history of AI and what preceded it. We have found that just as people were once afraid of computers, many are now afraid of AI. It is important to stress that, despite this analogy, it is not known whether AI will lead to unambiguous progress, rather than just creating so many problems that humanity will not be able to solve. We will seek an answer to this question in our exploration of the emerging dominance of AI in design and illustration, but the first chapter presents such a thesis:

1. Based on our research, we can hypothesise: In the future, communication professionals will have to learn AI in order to compete in the market. Companies will be looking for people who are familiar with AI;
2. With the emergence of AI, the law will have to change and adapt. In the context of AI-generated content, it's suggested that traditional notions of authorship may need to be re-evaluated. To address the unique challenges posed by AI in the creative industries, this evolution in legal thinking is essential.
3. The chapter suggests that a greater focus needs to be placed on the immediate issues and challenges posed by AI, rather than just on what is likely to happen in the future. This includes addressing concerns about the ethical use of data, the training of AI models and the impact of AI on the creative process. Calling for transparency is an important step in ensuring that AI is used ethically and responsibly when designing and illustrating.

AI offers potential solutions to current workflow challenges and represents a significant technological advance. However, it also brings new challenges and uncertainties.

{3.1} TECHNICAL SIDE OF AI TOOLS

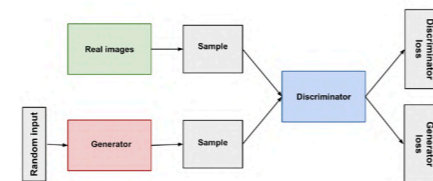
3.1.1 GENERATIVE ADVERSARIAL NETWORKS

Generative Adversarial Networks (GANs) are a type of algorithm used in machine learning, specifically in the field of artificial intelligence, introduced by Ian Goodfellow and his team in 2014 (Goodfellow et al., 2014)

GANs consist of two neural networks, a generator and a discriminator, that work together to produce realistic and high-quality images. The generator network learns to generate plausible data instances, and the discriminator network learns to distinguish fake generator data from real data. Through an adversarial learning process, GANs continuously improve their ability to generate images that are indistinguishable from the real thing (Overview of GAN Structure, 2022). This technology has significant implications for graphic design, illustration, and art, as it offers new tools for creating complex and nuanced visual content. As GANs become more sophisticated, they can potentially transform traditional approaches to visual art production, offering artists innovative ways to blend AI-generated and human-crafted elements. According to author, during the training process, the generator initially produces obviously fake data, and the discriminator quickly learns to identify it as such. However, as the training progresses, the generator becomes more adept at producing output that can deceive the discriminator, resulting in more realistic and believable images.

3.1.2 STYLE TRANSFER

Style transfer techniques, developed from advances in convolutional neural networks (CNNs). According to Gupta et al. (2019) in the work “Image style transfer using convolutional neural networks based on transfer learning”, these techniques allow the



{FIGURE 8/ Feedback Loop in Overview of GAN Structure in Machine Learning Course, Google

stylistic features of one image to be combined with the content of another, enabling the creation of expressive and visually appealing illustrations. The algorithm extracts feature representations from content and style images, and optimizes the output image to match content features while matching style image features. This neural style transfer (NST) process has been extensively studied and has shown impressive results in the creation of artistic images (Huang et al., 2017). According to the paper, further steps have been taken to improve the efficiency and flexibility of style transfer algorithms. Huang et al. demonstrate a significant advancement by enabling real-time neural style transfer for videos, a breakthrough that addresses the challenge of maintaining temporal consistency in stylized video sequences. A fast neural style transfer method has been proposed that achieves real-time performance by training a direct transfer network to approximate the styling process. This allows for the live transformation of videos with artistic styles, opening new frontiers for dynamic and interactive digital art. In applications where real-time responsiveness is critical, this approach significantly reduces the computational cost and enables faster style transfer.

Thus, methods of conveying style are not limited to static images. Recent advances have made it possible to apply style to video content, allowing entire sequences of images to be transformed with consistent process. This allows for the live transformation of videos with artistic styles, opening new frontiers for dynamic and interactive digital art. In applications where real-time responsiveness is critical, this approach significantly reduces the computational cost and enables faster style transfer.

Thus, methods of conveying style are not limited to static images. Recent advances have made it possible to apply style to video content, allowing entire sequences of images to be transformed with consistent stylistic characteristics. However, Perlich et al. (2013) focus on the use of machine learning in targeted display advertising, demonstrating its capability in adapting to complex, dynamic environments. This includes the application of transfer learning for effective ad targeting, highlighting the relevance of AI in time-based media beyond just creative expression. Their work illustrates the expanding scope of AI in various domains, including animation, cinema, and digital marketing.

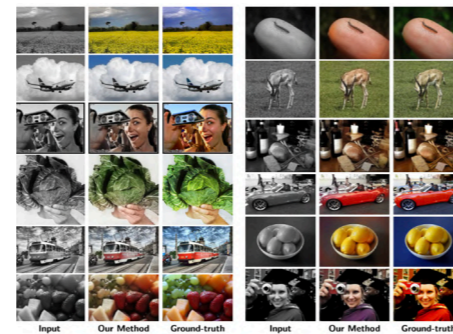
3.1.3 AUTOMATIC COLORIZATION

According to the work done by Sood et al. (2021), automatic colorization is a technique that converts grayscale images into full-color images using artificial intelligence algorithms trained on large sets of color image data. This technique simplifies the illustration process by accurately mapping grayscale values to corresponding color schemes and extrapolating color data to raster images.

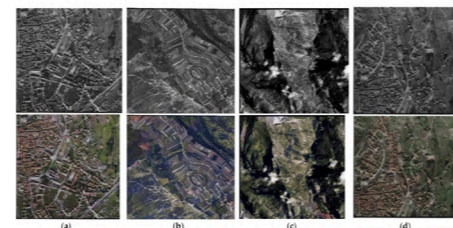
One noteworthy study within the field is “Learning representations for automated coloring” (Larsson et al., 2016). In this study, a convolutional neural network (CNN) is used to investigate the reconstruction of grey-scale images into colour images at different stages of processing. The results show that while the upper layers retain the high-level content of the image while losing detailed pixel information, the lower layers of the network can fully reconstruct the input image. Larsson et al. further demonstrate that the CNN’s ability to understand and manipulate color and semantic information leads to more accurate and visually appealing colorizations. This advancement indicates significant potential for automated colorization in enhancing old photographs, aiding in historical research, and offering novel applications in art and design.

Another important research paper is “Colorising the Past: Deep learning for automatic colourisation of historical aerial imagery. Journal of Imaging” by Farella et al. (2022) — the automatic colourisation of historical black-and-white aerial images is the focus of this research. A new neural network architecture is presented: Hyper-U-NET, which combines a U-NET-like architecture with HyperConnections. To facilitate further research in this area, the authors provide a training dataset and an implementation of the neural network.

Automatic colour prediction, like proper evaluation of colorisation results, is a very complex image processing task. According to the paper, the new method produced excellent results, in most cases correctly predicting the colours of key image features such as roofs, rivers, sea and vegetation, when the actual images were converted to grayscale and re-coloured.



{FIGURE 9} Fully automatic colorization result on CNN. It reproduces known object color characteristics, such as faces, sky, grass, fruit, and woods, and coherently selects colors for objects that do not have these characteristics, such as clothes



{FIGURE 10} Some examples of historical greyscale images (first row) colourised with the proposed Hyper-U-NET (second row)

{3.2} COMMON AI TOOLS FOR DESIGNERS AND ILLUSTRATORS

Based on paper “A Word is Worth a Thousand Pictures: Prompts as AI Design Material.” written by Kulkarni et al. (2023), it’s the recent advances in text-to-image models (TTI models) that allow users to generate high-quality images based on a text description or “hint”. For the accuracy of the study, I suggest limiting the research to AI tools that fit this description. I have used the list compiled in MIT Sloan Teaching & Learning Technologies (2023) for the following descriptions and the other internet sources mentioned further.

3.2.1 DALL-E

As it states in the article “An Introduction to Using DALL-E 3: Tips, Examples, and Features” written by Pykes (2023), DALL-E, a generative AI model for image creation, is a product of OpenAI and debuted in January 2021. As author notes, it has been through a significant amount of development, with its third version being the most recent (by the end of 2023). The model’s speciality is the transformation of textual instructions into visual representations. Essentially, it interprets short phrases and creates images visually embodying them.

3.2.2 STABILITY AI

This is an open-source model that has gained attention for its ability to create detailed and coherent images from textual descriptions, competing to the other tools, it is highly customizable. According to the article “Midjourney vs. Stable Diffusion: Which AI image generator should you use?” by Guinness (2024) It may generate lower-resolution and less realistic images compared to some other models like Midjourney, but it compensates with its extensive range of available models and the ability to tailor the generative process. With Stable Diffusion, users have control over factors such as the number of steps, prompt strength, and even the option to

create negative prompts. Its open-source nature allows for customization and the potential to train models on specific data, making it a valuable tool for users looking for more power and control in their AI image generation process.

3.2.3 MIDJOURNEY

Midjourney is a text-to-image generator of a different kind (Gwira, 2023). In contrast to its competitors, it is not a stand-alone platform, but rather a bot for Discord. There is a community of users on Midjourney as well. Midjourney initially offered free use for a limited number of images. However, to continue using the service, users now have to choose between subscription plans. These vary in cost and the number of image generations allowed. The plans offer different levels of speed of generation and number of generations. All images created by Midjourney are public property.

3.2.4 ADOBE FIREFLY

It's an important part of Adobe's modern package, which has also tried to keep up with the rise of AI by releasing a version of its applications that uses it. The convenience of using Adobe is that it is built into the application, so working with AI is native. According to the Adobe website, Firefly—as part of their efforts to develop commercially safe AI—is trained on licensed content, such as Adobe Stock, and public domain content where copyrights have expired (Adobe Firefly — Free Generative AI for Creatives, n.d.).

{3.3} PRACTICAL EXPLORATION

It is necessary to move beyond theoretical discussions and into practical experiments in order to understand the true impact of artificial intelligence on design and illustration.

Our process starts with an original image. This is then enhanced using Adobe Photoshop's latest AI-powered feature, Generative Fill. Part of the Adobe Firefly suite, Generative Fill uses simple text commands to manipulate and enhance images, enabling innovative concepts to be quickly transformed into a vivid visual reality. After Generative Fill has created three unique renditions of the original image, we set those versions aside and return to our pristine original, using an AI model called Midjourney in an iterative process. The image is transformed into a textual description, and this text is then transformed back into an image by the AI. This cyclical process of image-to-text-to-image generates new interpretations of the original artwork, reflecting the AI's perception and understanding. The final stage of our exploration involves the AI Probability tool, accessible at <https://app.illuminary.ai/>. This tool assesses the likelihood that a given image was created by an AI. By submitting the newly created images from Midjourney, we get a quantitative measure of the AI's confidence in its own creation. Through this intricate methodology, we explore the dynamic interaction between AI and human creativity, and discover the uncharted territories of digital artistry in the era of generative AI.

3.3.1 WORK SELECTION CRITERIA AND ANALYSIS

A key part of this research is the selection of the right artwork to study. We are looking for a variety of styles, techniques and applications in commercial illustration and graphic design to ensure a comprehensive study.

Our aim is to include a mix of iconic and contemporary works that span a variety of genres:

{1} INFORMATION DESIGN:

“U.S. Counties and Zip Codes” by Paula Scher: This work uses cartography and typography to present a unique vision of the United States, transforming what could be mundane information into a visually engaging experience”.

You Me, 2015-2016 by Paula Scher: In this work, Scher constructs a visual narrative by layering, intertwining, and juxtaposing elements of typography and graphic design to create a vibrant, populated ‘information landscape.’

{2} LOGO DESIGN:

“I Love NY” logo by Milton Glaser, 1976: This iconic logo embodies simplicity and instant recognition, two key aspects of successful logo design.

Amsterdam Flag: Known for its bold design and powerful symbolism, the Amsterdam flag is a classic example of city branding, incorporating elements of the city’s history and identity.

{3} POSTER DESIGN:

Shepard Fairey’s “Hope” poster: Fairey’s poster of Barack Obama, known worldwide, became an iconic image during the 2008 US presidential election.

La Goulue by Henri de Toulouse-Lautrec, 1891: His posters have been reprinted millions of times and have become iconic images of Paris and Montmartre in particular.

{4} 3D ILLUSTRATION:

Magic Kingdome by Mike Winklemanns (Beeple): Known for his daily 3D digital artworks. Most notably, he sold an NFT of his work for \$69 million, catapulting him to fame in the digital art world.

Based in Buenos Aires, Argentina, Fran Rossi is a renowned art director and 3D/CGI designer. His mastery of texture and form results in visually stunning and strikingly realistic 3D artworks that showcase his precision and innovation, making him a key figure in contemporary 3D art.

{5} GAME ILLUSTRATION:

Paul Robertson: Known for his unique pixel art style, Robertson’s work blends classic aesthetics with contemporary gaming, contributing to the overall visual experience and narrative depth of games. Hyun Lee’s environmental concept art for League of Legends: Lee’s captivating designs help create immersive game environments for players.

We apply our exploration methodology to the original artwork. We enrich it with Adobe Photoshop’s Generative Fill, convert it to text with Midjourney, regenerate the image from the text, and check the final product’s AI probability. Also, we explore DALL-E 2 tool, asking it to create the work, giving it the original name of it. The end goal is to understand how advanced artificial intelligence tools can interpret, reproduce and enhance these different genres of commercial artwork.

3.3.2 EXPERIMENT 1: “U.S. COUNTIES AND ZIP CODES”, PAULA SCHER

The experiment commenced with a deep-dive into the complex realm of Paula Scher’s “U.S. Counties and Zip Codes.” The AI’s initial interpretation reflected an understanding of a detailed cartographic representation, albeit with an unexpected color palette and a mosaic of seemingly unrelated elements such as George Bush, Escher influences, and the intriguingly labeled ‘poolcore’.

A surprising divergence, yet it set the stage for a series of transformations.

As the iterations progressed, the narrative took an unexpected turn. While the AI retained a spatial concept, the focus shifted towards more whimsical and fantasy-oriented elements. The originally recognized map evolved into a “town map of a colorful painting” and then further transmuted into “colorful fairy villages with 3D houses.” The detail and complexity of the original work were maintained, but the context had significantly drifted.

Midway through the process, the descriptions were completely transformed, revealing an entirely different image — a realm populated with fantastical elements. It had moved from “the alien civilization in an illustration for a puzzle game” to a “colorful, imaginary scene of a mushroom castle”.

This phase was the beginning of a fixation on a singular, recurring theme: mushrooms.

Despite repeated iterations of image-to-text and text-to-image, the AI seemed to have developed a peculiar interest in this mushroom motif. This is reflected in its translations from “an animation of an old forest castle with mushroom decorations” to “fantasy forest monster, a fantasy landscape, fantasy castle, fantasy mushroom house, forest fantasy 3D fantasy art, fantasy houses, mushrooms trees.”

By the end of the experiment, the generated image had drifted far from the initial point of departure, Paula Scher’s detailed map. It had transformed into a completely different artistic narrative centered around fantastical mushroom-themed imagery.

{ORIGINAL}

{MIDJOURNEY
ADAPTATION}

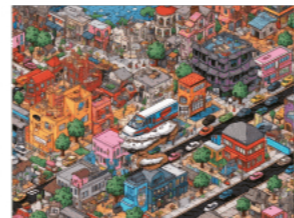
{ FIGURE 11/
The original of “U.S.
Counties and Zip
Codes”, Paula Scher

{ FIGURES 12–42/
Artificial intelligence’s
adaptation of the project
“U.S. Counties and Zip
Codes”

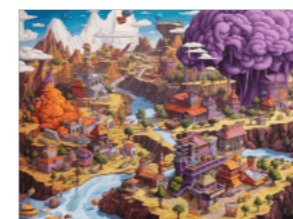
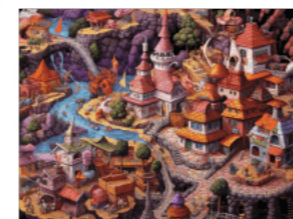
AI Probability: 4.5%



Imagine A large piece of art that shows the addresses of city locations, in the style of complementary colors, george bush, escher-in-spired, southern countryside, queercore, detail-oriented, poolcore --ar 75:56



AI Probability: 10.5%



Imagine the town map of a colorful painting, in the style of whimsical cartoonish characters, realistic hyper-detail, douglas smith, neogeo, soft landscapes, violet and orange, peter blume --ar 79:59

AI Probability: 31.9%



Imagine pictures of colorful
fairy villages 3d houses,
in the style of jim woodrin,
large-scale canvas,
grandiose cityscape views,
flat shading, andrew hem,
rustic renaissance realism,
dark violet and light orange
--ar 79:59



AI Probability: 17.3%



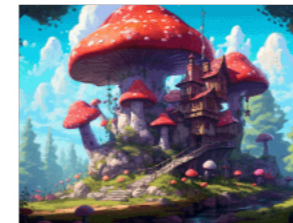
Imagine the alien civilization is
an illustration for the puzzle
game jigsaw, in the style
of whimsical dreamscapes,
haunting houses, richly
colored skies, detailed
painting, 32k uhd, whimsical
caricatures, spiky mounds
--ar 79:59

AI Probability: 13.5%

Imagine there is a colorful, imaginary scene of a mushroom castle, in the style of joe madureira, uhd image, richly detailed genre paintings, high quality photo, detailed character design, moyoco anno, high-angle --ar 79:59



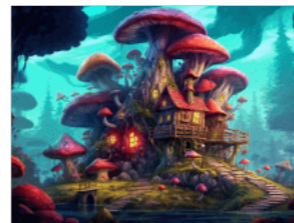
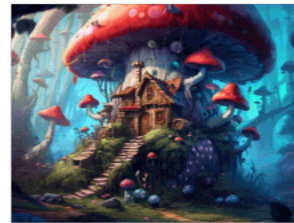
AI Probability: 72.7%



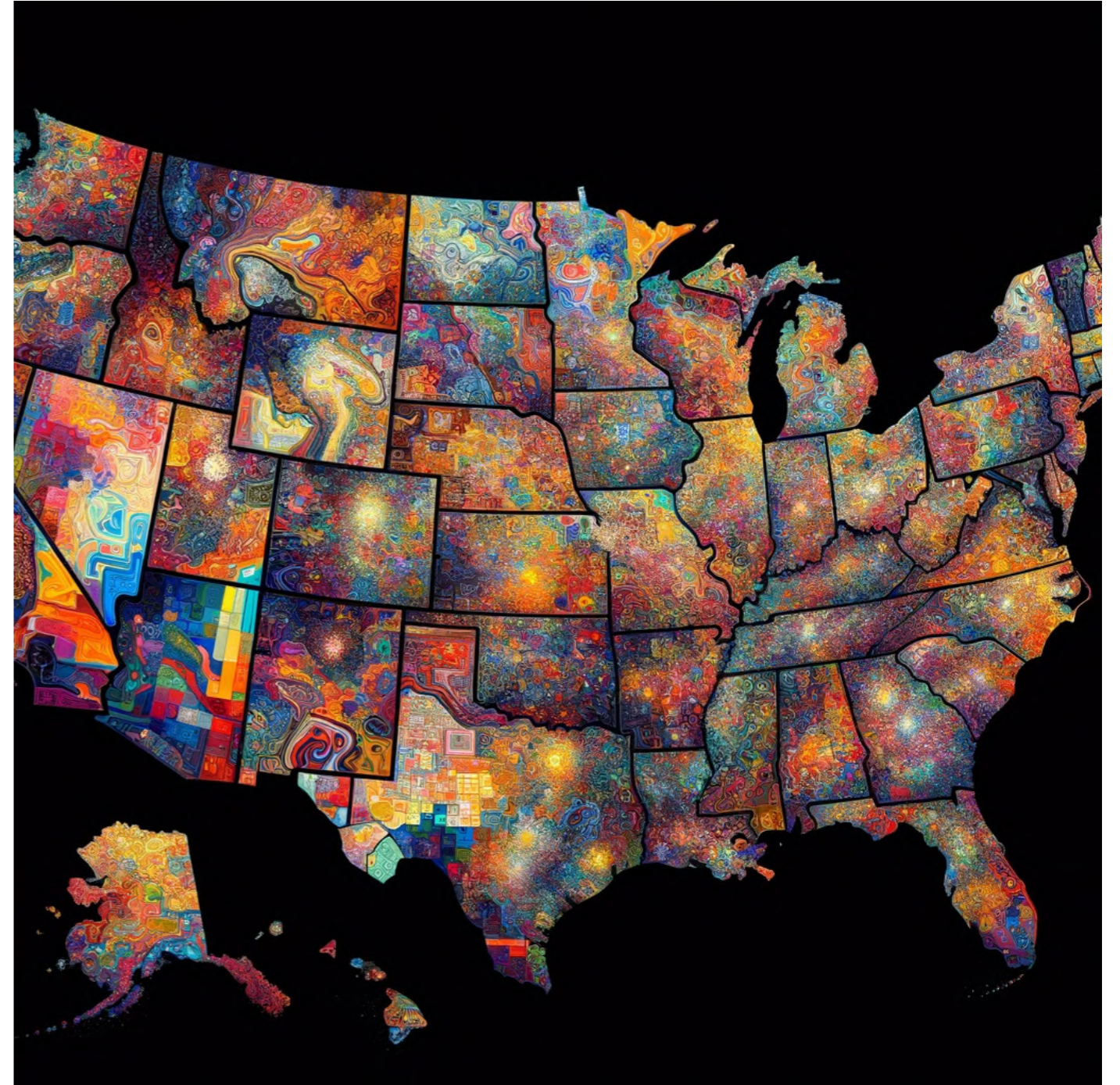
Imagine pictures of colorful fairy villages 3d houses, in the style of jim woodring, large-scale canvas, grandiose cityscape views, flat shading, andrew hem, rustic renaissance realism, dark violet and light orange --ar 79:59

AI Probability: 60%

Imagine the mushroom hd image has one of those crazy mushrooms surrounding it, in the style of precise, detailed architecture paintings, sky-blue and crimson, fantasy characters, realistic rendering, cottagepunk, vibrant worlds, speedpainting --ar 79:59



AI Probability: 54.4%



3.3.2 EXPERIMENT 2: “YOU ME”, PAULA SCHER

The experiment embarked with an exploration of Paula Scher’s original work, represented through the textual lens of artificial intelligence. The initial AI-rendered description touched on a conceptual simplicity—“you” and “me” in red and white on a red background—paired with an unexpected intersection of artistic styles from Mati Klarwein to Jim Woodring. The first iteration led to an interpretation that preserved the essence of the original text, pivoting from simple text to an “art piece featuring red letters”. Though a slight shift from the original artwork, the AI still maintained a semblance of the original theme.

With the second iteration, a profound transformation occurred. The description moved away from the abstract concept of words on a canvas and into the realm of the figurative, introducing “a beautiful girl in an art piece with red lips, curls, and bubbles”.

The third and fourth iterations saw a stabilizing theme. The girl with blonde hair, introduced in the second iteration, became a recurring character, with each AI rendition further enriching her story. She developed “red balls in her hair” and later held “red balloons”. The artistic style references continued to diversify, from the ethereal style of Miho Hirano to the street art influences of Tristan Eaton, underlining the AI’s capability to blend styles and inspirations.

As the fifth and sixth iterations unfurled, the narrative retained its central character and her red balloons, further accentuating and refining the details around her. However, there was a gradual shift in tonality. Words like “carnavalesque”, “monochromatic color schemes”, and “child-like innocenc” began to shape a distinct visual narrative.

The seventh and final iteration brought with it a poignant transformation. The blonde girl evolved into ‘a girl with red hair standing under a bunch of red balloons’, and the style was narrowed down to “gothic realism” with “detailed character illustrations”. The transformation from the initial concept to the final result was substantial, moving from abstract representation of words on a canvas to a detailed portrayal of a girl with red balloons.

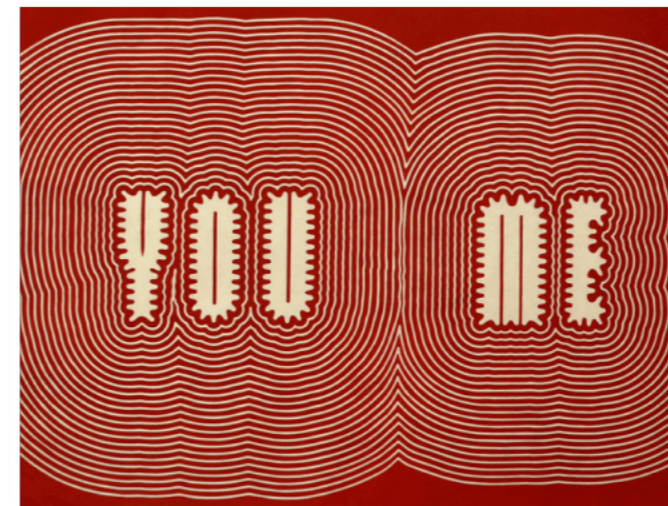
{ORIGINAL}

{MIDJOURNEY
ADAPTATION}

{ FIGURE 43/
The original of the “You
Me” by Paula Scher

{ FIGURES 44–74/
Artificial intelligence’s adaptation
of the project “You Me” by Paula Scher

AI Probability is 60%



Imagine the words 'you me' are red and white on a red background, in the style of mati klarwein, intricate lines, synthetism-inspired, pegi nicol macleod, jim woodring, playful forms, woodblock printing --ar 5:3



AI Probability: 14.2%



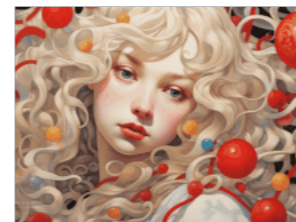
Imagine an art piece featuring red letters, in the style of hyper-detailed illustrations, optical illusionism, monia merlo, moche art, whirly, airbrush art, nathan spoor --ar 89:53

AI Probability: 52.8%

Imagine a beautiful girl in an art piece with red lips, curls and bubbles, in the style of etam cru, biomorphic forms, james jean, light crimson and silver, detailed miniatures, playfully intricate, spirals --ar 89:53



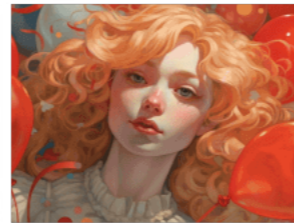
AI Probability: 82.9%



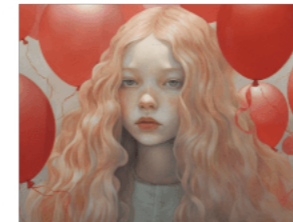
Imagine a woman with blonde hair with red balls in her hair, in the style of miho hirano, tristan eaton, close-up, curvilinear, mary jane ansell, playfully intricate, imaginative characters --ar 89:53

AI Probability: 6%

Imagine the image is of a girl with blonde hair and red balloons, in the style of miho hirano, tristan eaton, organic biomorphism, detailed character expressions, john pitre, botticelli-esque figures, close-up --ar 89:53



AI Probability: 9.4%

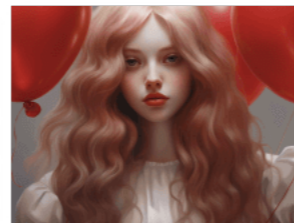


Imagine a painting of a beautiful person with long blonde hair and red balloons, in the style of miho hirano, josan gonzalez, alex andreev, close-up intensity, carnivalesque, monochromatic color schemes, childhood arcadias --ar 89:53

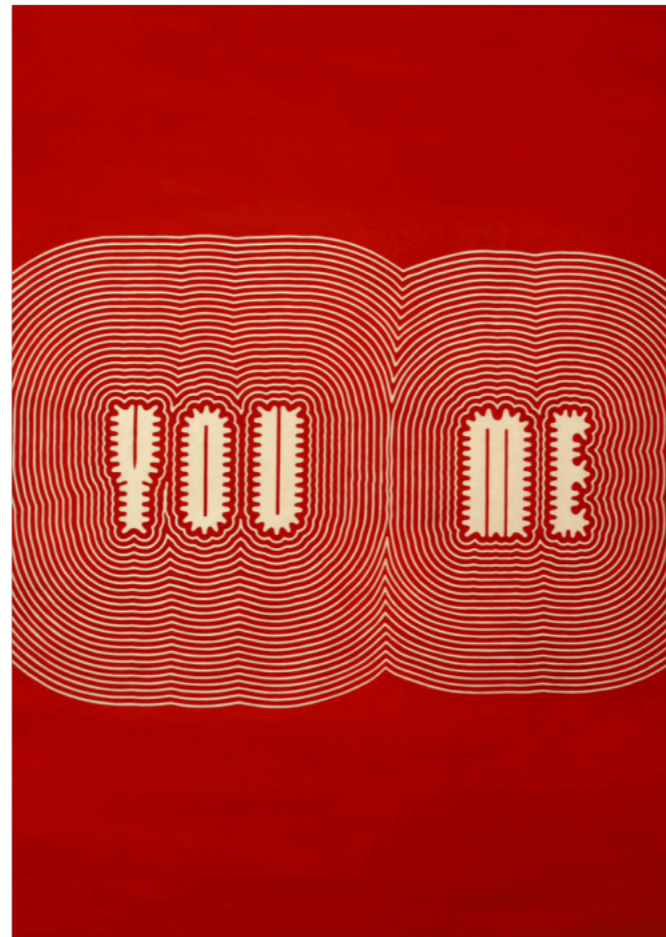
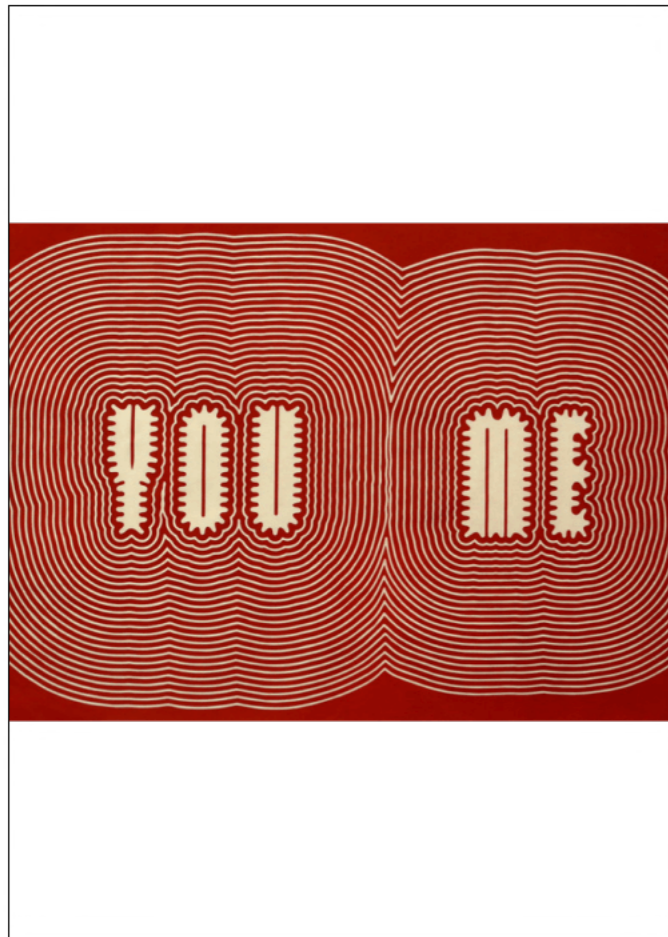
AI Probability: 6.6%





Imagine a white girl with long hair holding red balloons, in the style of artgerm, ultrafine detail, edogawa ranpo, child-like innocence, tonal palette, fairycore, gloomy --ar 89:53







AI Probability: 58.5%



 **ChatGPT**

 Error creating image

I'm sorry, but I am unable to create images that directly mimic the style of specific contemporary artists like Paula Scher, as it goes against our content policy. However, I can assist you in creating an abstract typographic artwork inspired by the general themes and styles found in modern graphic design. If you have specific elements, colors, or concepts you'd like to include, please let me know, and I'll create something unique for you!

3.3.3 EXPERIMENT 3: "I LOVE NY" LOGO, MILTON GLASER AS AN EXAMPLE

The experiment began with an exploration of Milton Glaser's iconic "I Love NY" logo. The AI's first interpretation of this renowned design identified elements such as the iconic heart in the middle, color palette, and various artistic styles including avocadopunk, humanistic empathy, Hudson River School, bold character designs, Harlem Renaissance, and pop art sensibilities.

The AI held fast to this initial interpretation throughout the first and second iterations. Despite the conversion between text and image, the narrative and design elements remained consistent, highlighting the AI's understanding and retention of the logo's signature elements.

By the third iteration, a transformation started to emerge. The original design evolved into an illustration featuring various objects framed within a heart-shaped object, carrying an echo of the original "I Love NY" theme. The AI interpreted the new image with an array of styles, including expressionist cityscapes, large-scale murals, playful visual puzzles, New York School, and a mix of realistic and fantastical elements.

The fourth and fifth iterations saw a progression of this transformation. The heart motif evolved into a heart-shaped puzzle surrounded by a cityscape and then into a city enclosed within a heart.

This series of interpretations shows how the AI had begun to introduce more complex elements and additional layers of interpretation while still preserving the thematic core of Glaser's original design.

However, by the sixth and seventh iterations, the AI's interpretations had shifted drastically from the original "I Love NY" logo. The narrative transformed into an illustration of a magical town, and finally, a colorful fairytale town. The artistic styles reflected in these interpretations ranged from Etam Cru to Dmitry Vishnevsky, filled with hidden details, realist details, curvilinear patterns, and a diverse color palette. The transition from a specific logo to these broad, fantastical landscapes illustrates the AI's capacity for creative evolution, albeit resulting in a deviation from the original source material.

{ORIGINAL}

{MIDJOURNEY ADAPTATION}

{ FIGURE 75 } The logo "I Love NY" logo by Milton Glaser

{ FIGURES 76–107 } AI's adaptation of the logo "I Love NY" logo by Milton Glaser

AI Probability: 37.9%



*Imagine i love ny with heart
in the middle of the wall
or in the air, in the style of
avocadopunk, light black and
crimson, humanistic empathy,
hudson river school, bold
character designs, harlem
renaissance, pop art sensibili-
ties --ar 10:7*



AI Probability: 1.3%



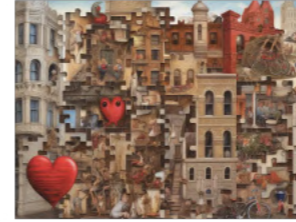
*Imagine i love ny with heart
in the middle of the wall
or in the air, in the style of
avocadopunk, light black and
crimson, humanistic empathy,
hudson river school, bold
character designs, harlem
renaissance, pop art sensibili-
ties --ar 10:7*

AI Probability: 9.1%

Imagine the illustration shows different objects in frame of a heart shaped object that says love, in the style of expressionist cityscapes, large scale murals, playful visual puzzles, new york school, dark beige and red, detailed character illustrations, mixes realistic and fantastical elements --ar 27:19



AI Probability: 9.1%



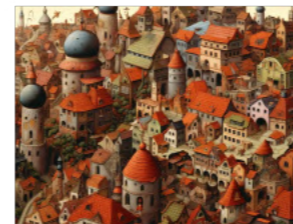
Imagine a heartshaped puzzle with a city of buildings surrounding it, in the style of john t. biggers, quirky characters and objects, hyperrealistic murals, light brown and red, layered street scenes, romantic illustration, mark seliger --ar 27:19

AI Probabilitay: 7.5%

Imagine hester sarver
reconstructed a city with
an enclosed heart, in the
style of surrealist realism,
19th century american art,
lively street scenes, highly
detailed, dark beige and red,
puzzle-like elements, 8k
resolution --ar 27:19



AI Probability: 4.5%



Imagine an illustration of a
magical town, in the style
of etam cru, pieter jansz
saenredam, red and bronze,
playful and whimsical scenes,
multilayered realism, george
underwood, aerial view --ar
27:19

AI Probability: 12.4%



Imagine an illustration of a colorful fairytale town, in the style of etam cru, packed with hidden details, dmitry vishnevsky, curvilinear, realist detail, jan van scorel, dark white and light orange --ar 27:19



AI Probability: 10.2%



3.3.4 EXPERIMENT 4: LOGO DESIGN. THE FLAG OF AMSTERDAM AS AN EXAMPLE

The experiment began with Amsterdam's flag, renowned for its bold design and potent symbolism, embodying the city's history and identity. In the first iteration, the AI's interpretation stayed close to the original, recognizing it as a "vector flag" but adding an array of stylistic influences, including punk rock aesthetic, interwar period, feminist iconography, and the symmetrical designs of the Chicago Imagists.

In the second iteration, the AI transformed the flag's design into a "red, white and black-striped flower pattern". Here, the AI introduced new styles into its interpretation such as minimalistic Japanese, Soviet propaganda, and British post-war art. The unique transformation from the initial city flag to a floral pattern indicated the AI's creative trajectory.

By the third iteration, the flag had morphed further into a "red, cream, and black floral pattern", with the AI adding new stylistic interpretations such as optical abstraction, fauvist color explosions, and the vibrant stage backdrops of the Gutai movement.

The fourth and fifth iterations saw the AI dive deeper into abstract design, interpreting the flag as an "abstract red black art illustration with a flower design", and a "black flower". These transformations showed the AI's ability to reinterpret elements of the flag in increasingly creative ways, introducing influences from the world of digital art and concept art.

By the sixth iteration, the flag was fully abstracted into "an artistic painting for the computer, with red flowers on the background". The AI retained the flag's original color scheme but had incorporated digital art techniques, concept art, and elements of storybook illustrations into its interpretation.

{ORIGINAL}

{MIDJOURNEY
ADAPTATION}

{ FIGURE 108 } The flag of Amsterdam

{ FIGURES 109–132 } AI's adaptation of the flag of Amsterdam

AI Probability: 53.6%



Imagine a red, cream and black floral pattern, in the style of optical abstraction, elegant compositions, fauvist color explosions, symmetric compositions, leaf patterns, vibrant stage backdrops, gutai --ar 85:56



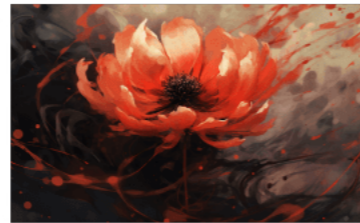
AI Probability: 81%



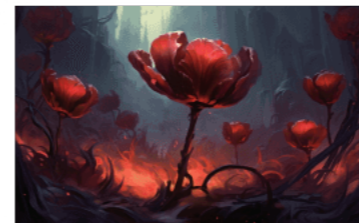
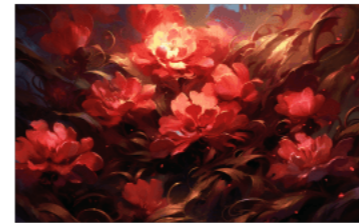
Imagine abstract red black art illustration with a flower design with black and white colors, in the style of calming symmetry, flowing draperies, light beige and red, vibrant color combinations, fine feather details --ar 85:56

AI Probability: 28.6%

Imagine a black flower, in the style of red and beige, fluid dynamic brushwork, detailed backgrounds, eric canete, uhd image, digital art techniques, serge marshennikov --ar 85:56



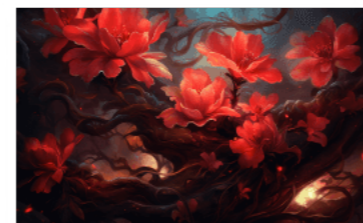
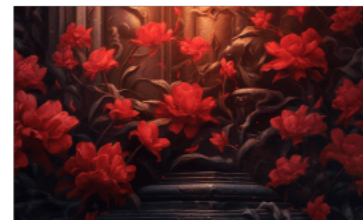
AI Probability: 51.6%



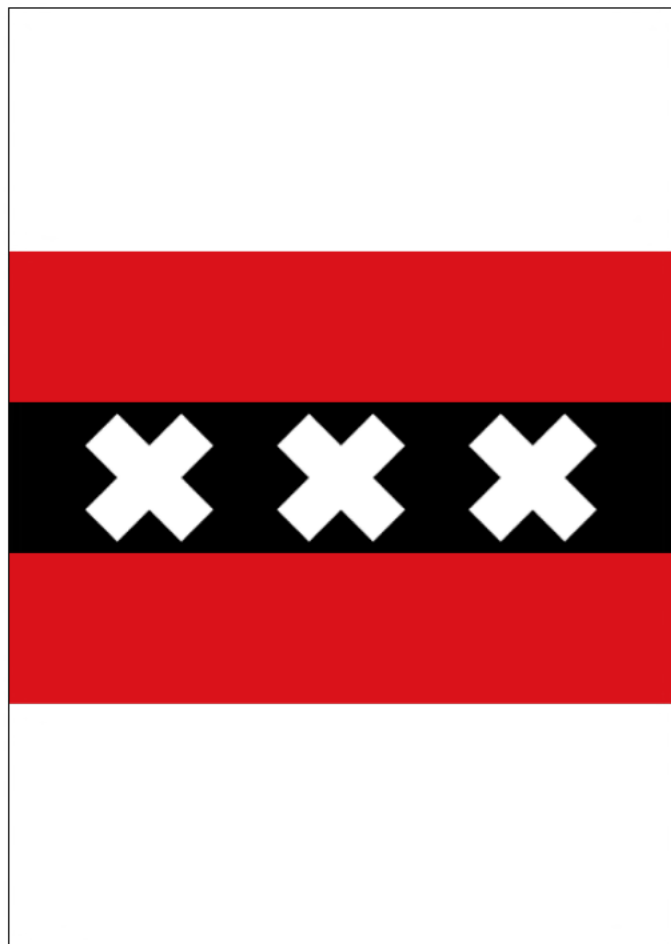
Imagine wallpapers for flower art fenomenad, in the style of aggressive digital illustration, dynamic brushwork, crimson and bronze, concept art, shadowy stillness, bugcore, oil painting --ar 85:56

AI Probability: 20.5%

Imagine an artistic painting for the computer, with red flowers on the background, in the style of zbrush, flowing textures, realistic chiaroscuro lighting, storybook illustrations, warm tonal range, concept art, arabesque --ar 85:56



AI Probability: 11.2%



3.3.5 EXPERIMENT 5: “HOPE” POSTER BY SHEPARD FAIREY

The journey commenced with the iconic “Hope” poster, originally designed by Shepard Fairey. Already in this preliminary phase the AI captured the key elements, color scheme, and style of the original artwork.

The text-to-image and image-to-text conversion process was then repeated multiple times. During the first and second iterations, the AI maintained the core narrative and design elements from Fairey’s original poster.

However, by the third iteration, a significant transformation was observed. The original artwork began to evolve into a cubist-inspired portrait with influences from cross-processed film and bold color patterns. The continuity of Barack Obama’s image and the theme of hope remained consistent throughout, illustrating how the AI introduced new stylistic influences while preserving the central narrative elements of the poster.

During the fourth and fifth iterations, this transformation continued to progress. The portrayal of Barack Obama shifted to a low polygon art technique, with influences from suprematism and grandiose color schemes. These changes demonstrate the AI’s ability to introduce increasingly complex elements while still maintaining the fundamental aspects of the original artwork.

The sixth iteration brought forth a geometric and colorful depiction of Barack Obama, highlighting the AI’s adaptability in both style and color palette. By the final iteration, the AI’s interpretation had evolved into a geometric design with cubist multifaceted angles and strong chiaroscuro. This indicated a shift from the original pop art style of Fairey’s poster to a more abstract, geometric style.

Through iterative text-to-image and image-to-text translations, the AI was able to maintain key elements of the original poster while also evolving its interpretation across iterations, ultimately moving from Fairey’s “Hope” poster to a geometric design that still echoed the original theme.

{ORIGINAL}

{ FIGURE 133 } The original: “Hope” poster by Shepard Fairey

AI Probability: 57.5%



{MIDJOURNEY ADAPTATION}

{ FIGURES 134–164 } AI’s adaptation of the “Hope” poster by Shepard Fairey



Imagine a poster of barack obama's face with the words hope applied, in the style of light red and dark cyan, stylized portraiture, sepia tone, sanriocore, 1st version, i can't believe how beautiful this is, controversial --ar 31:47



Imagine an advertisement for hope on a poster with barack obama's face, in the style of dark teal and light red, sepia tone, bold outline, flat yet expressive, flickr, nonrepresentational, chiaroscuro portraitures --ar 56:85

AI Probability: 56.3%



AI Probability: 62.6%



Imagine a portrait of barack's face on a poster, in the style of dark cyan and beige, retro pop art inspirations, flickr, flowing silhouettes, etam cru, dignified poses, wlad safronow --ar 56:85



AI Probability: 99.3%



Imagine an advertisement obama portrait by oblivion graphics | psdtu com, in the style of cubist-inspired portraits, dark teal, cross-processed film, bold colors and patterns, high resolution, historical illustration, flowing silhouettes --ar 56:85

AI Probability: 93.4%

Imagine a portrait of barack obama using the low polygon art technique, in the style of bold colors and patterns, dark cyan and light crimson, suprematism influence, grandiose color schemes, flickr, dramatic diagonals, 1970–present --ar 56:85



AI Probability: 97.5%



Imagine president barack obama is colorfully depicted in a triangular design reminiscent of geometric artwork, in the style of dark palette chiaroscuro, historical illustration, dappled, light leaks, modular patterns, illustration, graphic design-esque --ar 56:85

AI Probability: 80%

Imagine president barack obama is colorfully depicted in a triangular design reminiscent of geometric artwork, in the style of dark palette chiaroscuro, historical illustration, dappled, light leaks, modular patterns, illustration, graphic design-esque --ar 56:85




AI Probability: 80%



ChatGPT

Creating an image inspired by Shepard Fairey's "Hope" poster would involve capturing its iconic style. The original poster is famous for its stylized portrayal of a figure with a gaze looking upwards, conveying a sense of optimism and vision. The color scheme typically involves a limited palette with bold reds, blues, and beiges, creating a striking contrast. The design often includes text, like "Hope," which is a key element of the original artwork.

Let's create an image inspired by this concept, keeping in mind the stylistic elements that make Fairey's work distinctive.

 Error creating image

I'm unable to generate images based on Shepard Fairey's "Hope" poster due to our content policy. This policy ensures respect for original works and artists, especially those whose works are modern and well-recognized. If you have another request or a different concept in mind, feel free to share, and I'd be happy to assist with that!

3.3.6 EXPERIMENT 6: LA GOULUE BY HENRI DE TOULOUSE-LAUTREC, 1891

The journey began with “La Goulue” by Henri de Toulouse-Lautrec, a poster image that has come to symbolize the vibrancy of Paris, specifically Montmartre. In the first iteration, the AI retained the core imagery, transforming the artwork into “a newspaper advertisement with an image of Moulin Rouge and a dancing girl”, incorporating elements such as light yellow and black colors, shaped canvas style, and flowing silhouettes.

By the second iteration, the AI further abstracted the poster into “a woman dancing in a black dress”, introducing new artistic styles such as those associated with Ron Miller, Nul Group, and J.J. Grandville. This transition started moving the artwork from a specific historical poster to a broader representation of a dancing woman.

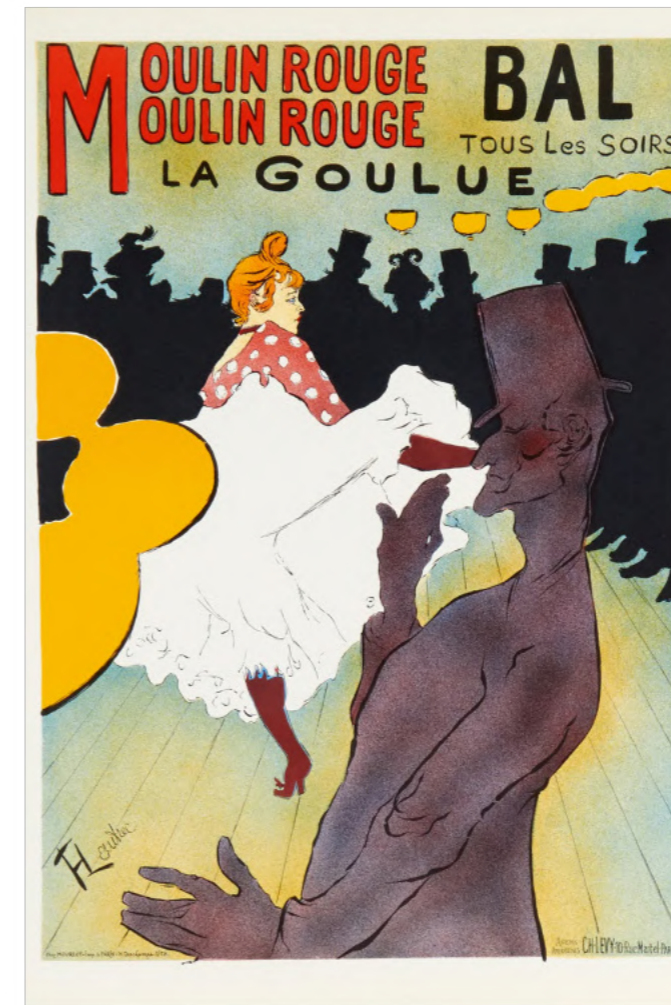
The third and fourth iterations marked a significant transformation in the artwork’s interpretation, with the dancer becoming “a silhouette of a girl dancing surrounded by flames”, and then ‘a fantasy girl with fire’. Here, the AI introduced more fantastical elements and additional styles, such as whimsical character design, transparent/translucent medium, and fairy tale aesthetics.

The fifth and sixth iterations saw a continuation of the ‘girl with fire’ motif, ultimately resulting in the depiction of “a woman holding a lighter in the city”. The AI’s interpretation had now fully transitioned into a realm of realistic fantasy artwork, incorporating glowing lights, a high-keyed palette, and romantic illustrations.

{ORIGINAL}

{ FIGURE 165/
The original: La
Goulue by Henri de
Toulouse-Lautrec, 1891

AI Probability: 12%



{MIDJOURNEY
ADAPTATION}

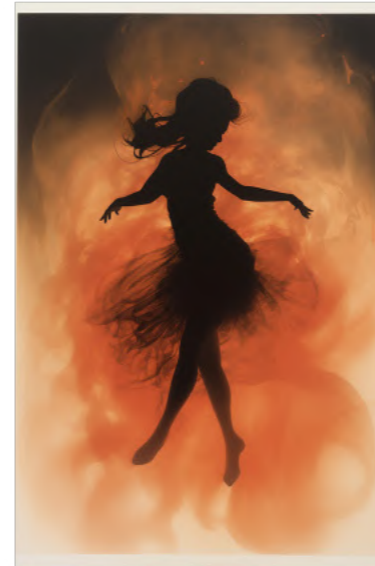
{ FIGURES 166–196/
Artificial intelligence’s
adaptation of the original



Imagine a newspaper advertisement with an image of mulin rouge and a dancing girl, in the style of light yellow and light black, shaped canvas, intense shadows, manticore, light brown and light black, flowing silhouettes, theatrical --ar 45:64



AI Probability: 91%



Imagine a poster with a woman dancing in a black dress, in the style of ron miller, nul group, j. j. grandville, light red and amber, poured, tony moore, made of mist --ar 19:27

AI Probability: 0.8%

Imagine a silhouette of a girl dancing surrounded by flames, in the style of stasia burrington, charlie bowater, krenz cushart, lithograph, transparent/translucent medium, fairy tale, dark --ar 19:27



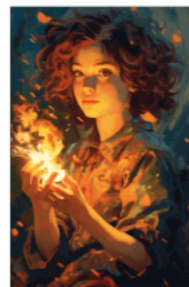
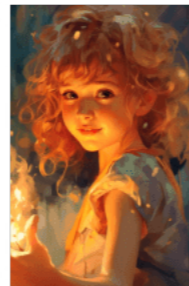
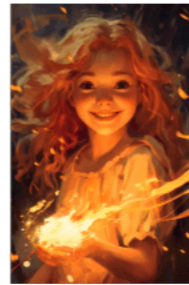
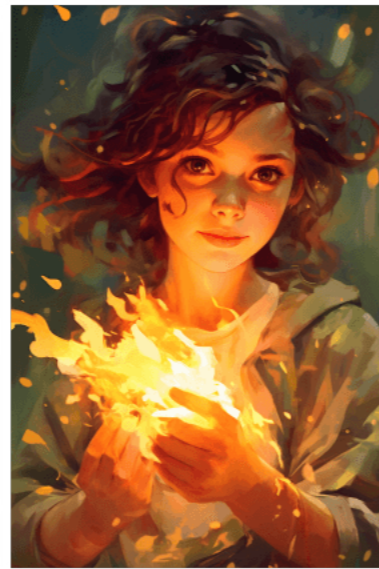
AI Probability: 40.4%



Imagine a young girl with her arms in fire and flame, in the style of darkly romantic illustrations, whimsical character design, michael malm, mandy disher, lively movement portrayal, whimsical cartoon, 8k resolution --ar 19:27

AI Probability: 75.8%

Imagine art of fantasy girl with fire, in the style of joyful and optimistic, charlie bowater, naive childlike, 4k, jessie willcox smith, lively movement portrayal, cute and dreamy --ar 19:27



AI Probability: 34.9%



Imagine a girl holding flames in her hands, in the style of digital painting, youthful protagonists, douglas smith, dmitri danish, neil gaiman, whimsical illustration, realistic depiction of light --ar 19:27

AI Probability: 12.4%

Imagine a woman holding a lighter in the city, in the style of realistic fantasy artwork, lit kid, radiant clusters, glowing lights, high-keyed palette, honeycore, romantic illustrations --ar 19:27



AI Probability: 7.9%



3.3.7 EXPERIMENT 7: BEEPLE'S 3D PIECE "MAGIC KINGDOM"

The AI's first interpretation kept the core imagery intact, representing it as "a castle in pink with fireworks behind".

Here, the AI infused the description with a blend of realistic and fantastical elements, emphasizing the gigantic scale and surrealistic distortions that Beeple often utilizes in his works.

The second iteration abstracted the piece further into a 'princess in a pink castle towering over pink trees and fireworks'. The imagery became more specific and narrative-oriented.

Moving forward, the third and fourth iterations further embellished the castle narrative with "Cinderella castle surrounded by pink trees" and "Dresden in spring cherry blossoms and a castle". Here, the AI started introducing even more specific cultural references, like Disney animation and cherry blossoms, while also accentuating the photorealistic and hyperrealistic elements of the scenes.

The final two iterations maintained the core castle and tree motifs, transitioning into "an animated castle in the middle of pink trees" and "3D animation of modern-day fantasy fairy castle of flowers and trees". These stages incorporated styles and references to artists such as Mike Campau and Caras Ionut, while also emphasizing monochromatic artworks and contemporary candy-coated aesthetics.

{ORIGINAL}

{ FIGURE 197 } The original: Beeple's 3D piece "Magic Kingdom"

AI Probability: 2.4%



{MIDJOURNEY
ADAPTATION}

{ FIGURES 198-229 } Artificial intelligence's adaptation of the original

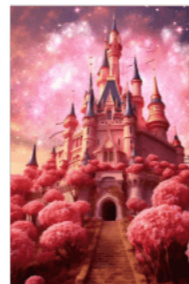
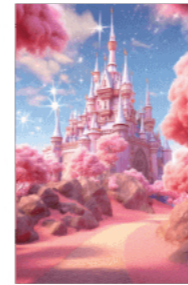
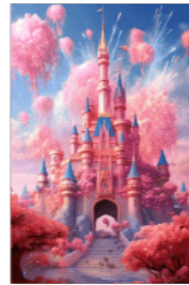


Imagine a castle in pink with fireworks behind, in the style of mixes realistic and fantastical elements, gigantic scale, elaborate fruit arrangements, disney animation, mind-bending sculptures, realistic scenes, surrealistic distortions --ar 140:173

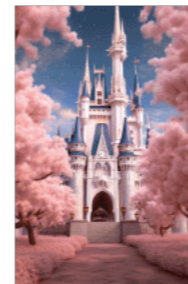
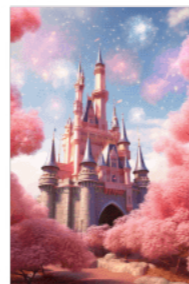


Imagine princess in pink castle towering over pink trees and fireworks, in the style of realistic and hyper-detailed renderings, unreal landscapes, i can't believe how beautiful this is, surrealistic elements, land artist, detailed texture, 32k uhd --ar 30:37

AI Probability: 29.1%



AI Probability: 11.4%

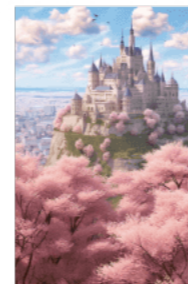
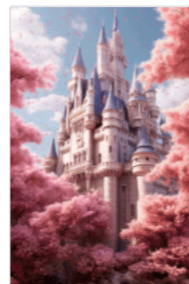
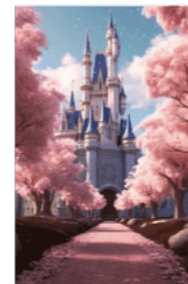
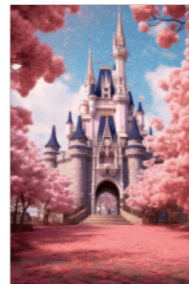


Imagine an image of cinderella castle surrounded by pink trees, in the style of photorealistic compositions, dreamlike illustration, kuromicore, disney animation, intense color saturation, cherry blossoms, caras ionut --ar 30:37



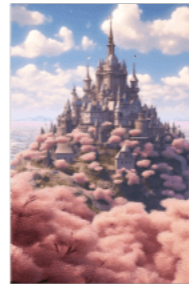
Imagine cinderella castle with pink blossom trees surrounded by trees, in the style of vray tracing, detailed, layered compositions, hyperrealistic environments, meticulously crafted scenes, immersive environments, monochromatic color scheme, dreamscape portraiture --ar 30:37

AI Probability: 4.6%

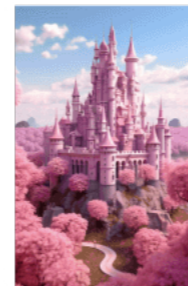


AI Probability: 3.7%

Imagine a picture of dresden in spring cherry blossoms and a castle, in the style of zbrush, mixes realistic and fantastical elements, disney animation, pink and azure, realistic landscapes with soft, tonal colors, mori kei, meticulous detail --ar 30:37



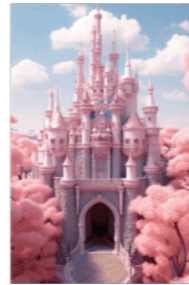
AI Probability: 3.9%



Imagine an animated castle is seen in the middle of the pink trees, in the style of mike campau, whimsical anime --ar 30:37

AI Probability: 5.7%

Imagine 3d animation of
modernday fantasy fairy
castle of flowers and trees,
in the style of caras ionut,
hiroshi nagai, light pink
and silver, monochromat-
ic artworks, kim keever,
contemporary candy-coated,
cross-processing/processed
--ar 30:37



AI Probability: 5.7%




ChatGPT

Creating an image inspired by Mike Winklemann's (Beeple) "Magic Kingdom" would involve capturing the essence of his distinctive 3D illustration style. Beeple is known for his futuristic and often surreal digital art, which frequently incorporates complex, highly detailed landscapes or scenes, often with a blend of organic and geometric forms.

For an image inspired by "Magic Kingdom," we would aim for a futuristic, surreal landscape or scene, featuring intricate details and a combination of both natural and synthetic elements. The overall composition would likely be visually striking, with a focus on depth, texture, and a rich color palette.

Let's create an image based on this concept.

 Error creating image

I'm unable to generate images based on Mike Winklemann's (Beeple) "Magic Kingdom" due to our content policy. This policy is in place to respect the rights and originality of contemporary artists and their works. If you have any other requests or different concepts in mind that align with this policy, I'd be happy to help create those for you!

3.3.8 EXPERIMENT 8: FRAN ROSSI'S 3D ILLUSTRATION

The AI, with a focus on digital art techniques and photorealistic renderings, immediately acknowledged Rossi's distinctive manipulation of textures and forms in its interpretation.

The second iteration of the AI's analysis visualized the artwork as a "3D render of a white glob in a field", indicating a shift towards more ethereal, Dutch realism-inspired themes. Notably, the AI's interpretation began to emphasize the lifelike nature of Rossi's work, alluding to National Geographic photos and hyper-realistic water renderings.

Further transitions led to the AI recasting Rossi's piece into a "3D scene with white cotton balls on a field and water," and then a "3D rendering of a river with several cottons in it."

Here, the focus veered towards dreamlike and surreal atmospheres, displaying an emphasis on naturalistic depictions of flora and fauna.

In the last two stages, the AI turned Rossi's piece into a "video game map in which the water is white with grass and trees," and finally, "a green field where a creek is flowing through the grass." It's here where the AI's interpretation truly embodied Rossi's meticulous attention to detail and realistic portrayal of natural landscapes.

{ORIGINAL}

{MIDJOURNEY ADAPTATION}

{ FIGURE 230 }
The original: Fran Rossi's
3D illustration

{ FIGURES 231–261 }
Artificial intelligence's
adaptation of the original

AI Probability: 0.7%



Imagine the white ball is floating on a grassy island, in the style of digital art techniques, soft, dreamy landscapes, spiky mounds, pastoral nostalgia, biomorphic, photorealistic renderings, dutch landscapes --ar 179:134



AI Probability: 50.9%



Imagine 3d render rendering of a white glob in a field, in the style of ethereal trees, made of feathers, dutch realism, national geographic photo, hyper-realistic water, bloomcore, voluminous forms --ar 77:58

AI Probability: 10.1%



Imagine 3d scene with white cotton balls on a field and a water, in the style of avian-themed, detailed feather rendering, filip hondas, lifelike renderings, ethereal trees, moshe safdie, national geographic photo --ar 77:58



AI Probability: 14.6%



Imagine 3d of river with several cottons in it, in the style of dreamlike and surreal atmospheres, vray, naturalistic depictions of flora and fauna, pigeoncore, 32k uhd, drips and splatters, light brown and sky-blue --ar 77:587

AI Probability: 1.5%

Imagine video game map in which the water is white with grass and trees, in the style of hyper-realistic bird studies, arkhyp kuindzhi, naturalistic depictions of flora and fauna, light sky-blue and dark amber, unreal engine 5, jan van goyen, realistic portrayal --ar 77:58



AI Probability: 6.1%



Imagine a large stream and grass with birds on it, in the style of ray tracing, medieval-inspired, detailed skies, crisp and clean, serene solitude, aetherpunk, lush and detailed --ar 77:58

AI Probability: 11%

Imagine a green field where a creek is flowing through the grass, in the style of cryengine, avian-themed, captures the essence of nature, radiant clusters, serene mood, english countryside, firecore --ar 77:58



AI Probability: 31.2%



3.3.9 EXPERIMENT 9: PAUL ROBERTSON'S ART

Beginning with the unique pixel art style of Paul Robertson, known for blending classic aesthetics with contemporary gaming, our AI began its interpretive journey. His initial piece was characterized as a “horror movie theater poster showcasing a group of monsters and a stage,” styled in the intricate pixel art reminiscent of artists like Josan Gonzalez. This blend of baroque extravagance and ultrafine detail underscores Robertson’s flair for the dramatic and meticulous in his work.

Upon the first transformation, the AI saw Robertson’s piece as the “artwork for Mystic Demon – a Phantom Slums video for beasts,” evolving the initial interpretation into a scene of “intricate underwater worlds,” still maintaining the overall monstrous and theatrical atmosphere.

As the AI dove deeper into interpretation, it visualized the artwork as “an image of an enormous pink monster set at the center of a purple world.” Now, artists like Dan Mumford and Ray Caesar informed the style, signaling a shift towards more detailed and otherworldly illustrations. The ominous vibe and symbolic overload in this iteration echo Robertson’s ability to craft intricate narratives within his gaming art.

Further transformations included scenes of “large pink monsters with long teeth,” a “painting of a small pink beast,” and a “group of pink monsters with big heads of teeth.” Here, the AI’s interpretations were focused on showcasing hyperrealistic and detailed renderings, moving towards more realistic fantasy artwork and caricature-like illustrations. The monstrous motif remained consistent, anchoring the narrative thread across all interpretations.

In the final stage, the AI interpreted Robertson’s artwork as a “painting featuring an odd crowd of pink monsters,” maintaining the playful and monstrous visual while infusing it with a sense of colorful caricature.

{ORIGINAL}

{MIDJOURNEY
ADAPTATION}

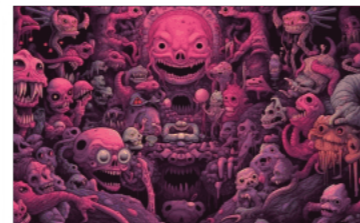
{FIGURE 262} Paul
Robertson's Art

{ FIGURES 263–297}
Artificial intelligence's
adaptation of the original

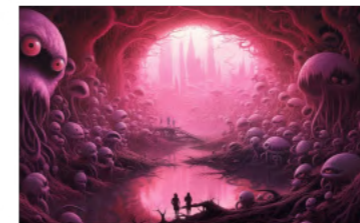
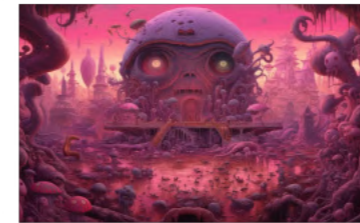
AI Probability: 79.6%



Imagine the poster for a horror movie theater showing a group of monsters and a stage, in the style of josan gonzalez, baroque extravagance, magenta and gray, jeff soto, ultrafine detail, mirrored realms, pixel art --ar 16:9



AI Probability: 21.7%



Imagine the artwork for mystic demon — a phantom slums video for 'beasts', in the style of colorful moebius, intricate underwater worlds, dark pink and dark beige, gigantic scale, victorian-inspired illustrations, large canvas format, mushroomcore --ar 91:51

AI Probability: 70.6%

Imagine an image of an enormous pink monster set at the center of a purple world, in the style of dan mumford, ray caesar, mushroomcore, otherworldly paintings, symbolic overload, wormcore, ominous vibe --ar 91:51



AI Probability: 28.8%



Imagine some large pink monsters have long teeth as if they're hungry, in the style of realistic fantasy artwork, apocalypse landscape, sung kim, uhd image, structured chaos, kuzma petrov-vodkin, skottie young --ar 91:51

AI Probability: 14.5%

Imagine mike ludd is exhibiting an awesome painting of a small pink beast, in the style of oliver wetter, dusty piles, gigantic scale, sam kieth, close up, brothers hildebrandt, joyful chaos --ar 91:51



AI Probability: 24.6%



Imagine large pink monsters are grouped around each with a few open mouths, in the style of realistic hyper-detail, caricature-like illustrations, hyperrealistic painting, spiky mounds, trompe-l'œil illusionistic detail, concept art, zigzags --ar 91:51

AI Probability: 75.1%



Imagine a group of pink monsters with big heads of teeth, in the style of richly detailed genre paintings, detailed science fiction illustrations, detailed crowd scenes, kombuchapunk, precisionist art, eerily realistic, playful cartoonish illustrations --ar 91:51

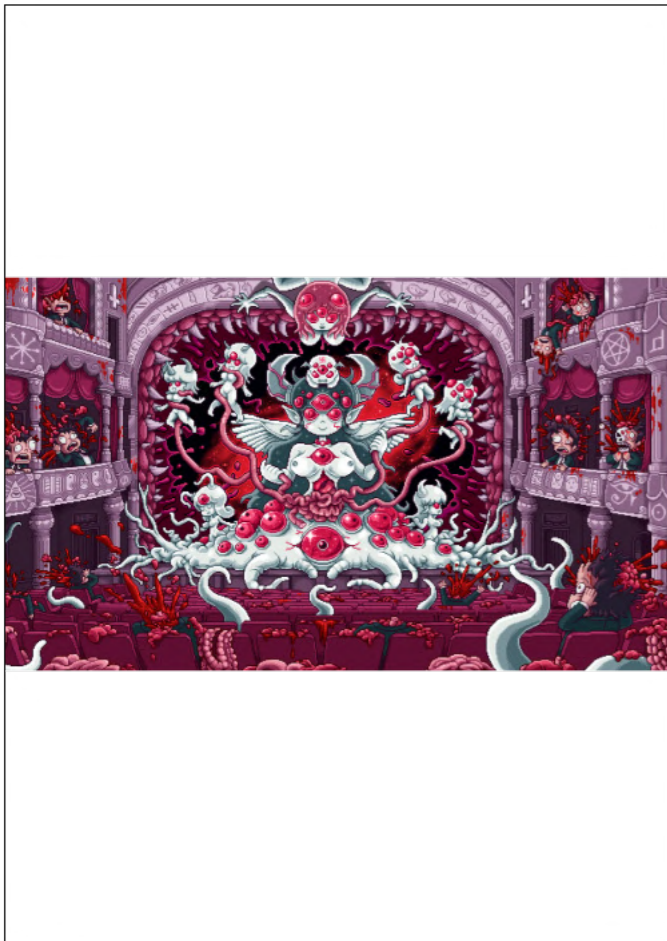


AI Probability: 18.9%



Imagine the painting features an odd crowd of pink monsters, in the style of jeff danziger, alex timmermans, gene luen yang, colorful caricature, monochromatic color schemes, gorpcore, close up --ar 91:51

AI Probability: 58.3%



3.3.10 EXPERIMENT 10: HYUN LEE'S ENVIRONMENT CONCEPT ART FOR LEAGUE OF LEGENDS

Starting with Hyun Lee's concept art for League of Legends, which sets the stage for immersive gaming environments, the AI begins its interpretation. Initially, the AI converts this piece into text and sees an "image of a hall in a fantasy setting," borrowing stylistic elements from artists like Etam Cru and Dmitry Kustanovich. The presence of sharp brushwork and the colors silver and red evoke the sense of a fantastical setting consistent with Lee's original vision.

In the first transformation, the AI generates an image from this text and re-interprets it as an "artistic representation of a fantasy scene." At this stage, the focus shifts to expansive spaces and detailed character design, reminiscent of the imposing monumentality found in Cryengine environments.

As the AI delves deeper into subsequent iterations, it continues to render and reinterpret the scene as an "inside of a medieval cathedral" and a "3D rendering of ancient ruins with bright sunshine and stone columns." These transformations highlight the use of ray tracing and realistic landscapes with soft, tonal colors, manifesting the grandeur of the ruins and the radiant ambiance of the environment. Artists like Jessica Rossier and Dmitry Danish, known for their evocative and detail-oriented works, influence the style of these iterations.

In the fourth and fifth stages, the AI perceives the scene as a "huge, medieval ruin with sunlight coming through some windows" and a "cathedral in some sort of game with ruins and debris." These interpretations emphasize light-filled scenes, grandiose ruins, and Gothic references, suggesting a move towards photorealistic techniques and vibrant, airy scenes that invoke a sense of ancient majesty and awe.

In its final interpretation, the AI envisions an "inside of a large medieval cathedral with orange lighting," maintaining the recurring themes of grand ruins and dramatic lighting. It now leans towards neo-Victorian elements and eerily realistic depictions, which pay homage to the highly detailed and immersive environments of Hyun Lee's original concept art.

{ORIGINAL}

{MIDJOURNEY ADAPTATION}

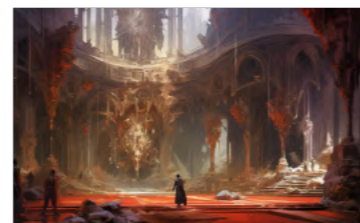
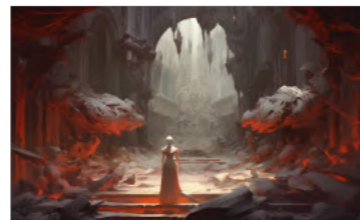
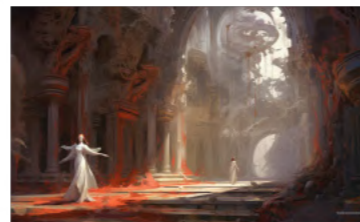
{ FIGURE 298/ Hyun Lee's Environment Concept Art for League of Legends

{ FIGURES 299-321/ Artificial intelligence's adaptation of the original

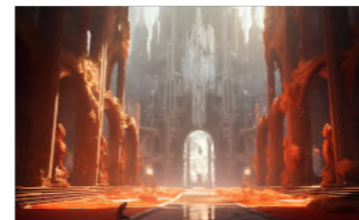
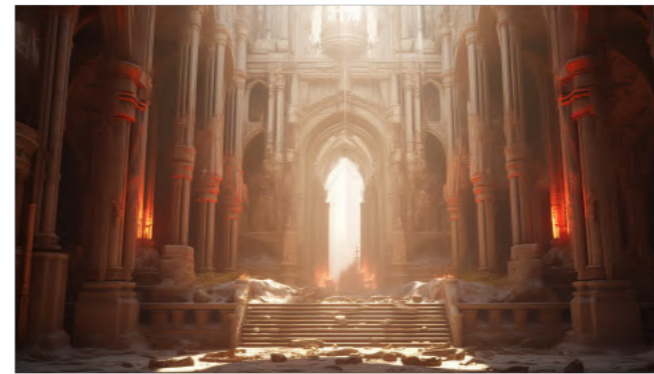
AI Probability: 5.9%



Imagine an image of a hall in a fantasy setting, in the style of etam cru, sharp brushwork, crystalcore, silver and red, dmitry kustanovich, bone, peter mohrbacher --ar 25:14



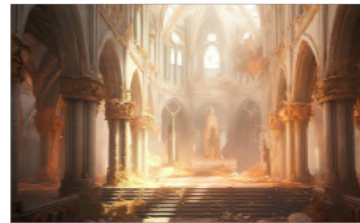
AI Probability: 37.6%



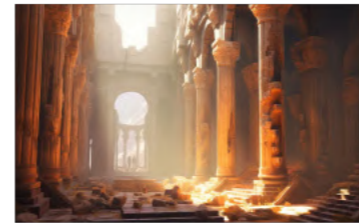
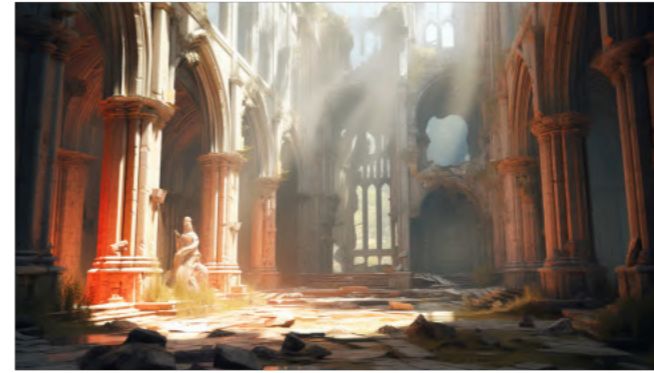
Imagine the image is an artistic representation of a fantasy scene, in the style of light red and brown, imposing monumentality, expansive spaces, cryengine, white and bronze, detailed character design, passage --ar 91:51

AI Probability: 15.5%

Imagine the inside of a medieval cathedral, in the style of realistic landscapes with soft, tonal colors, light red and light amber, grandiose ruins, ray tracing, exotic fantasy landscapes, eve ventrue, mythic symbolism --ar 91:51



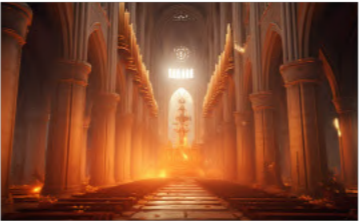
AI Probability: 16.5%



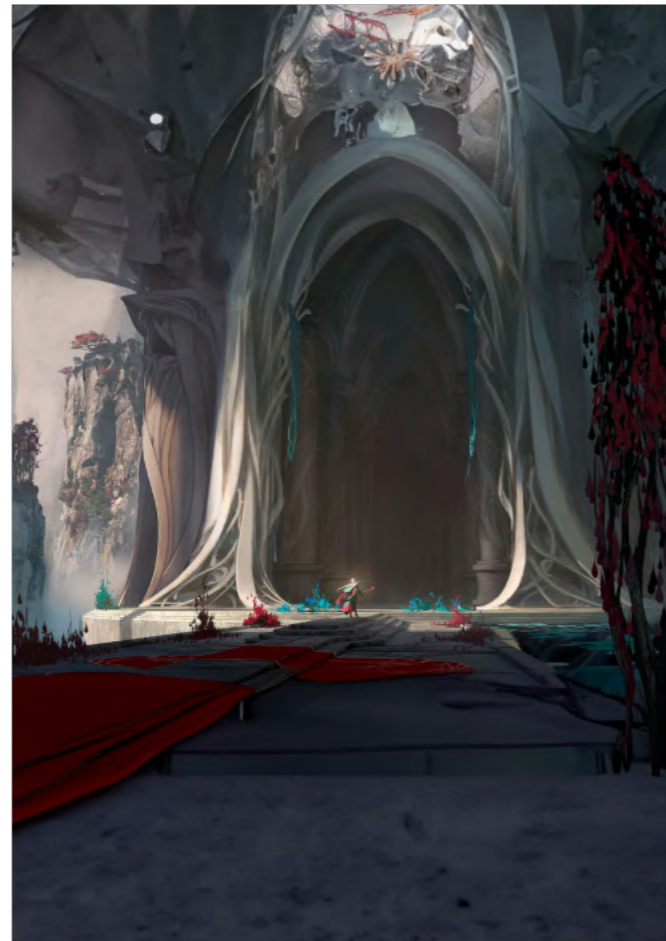
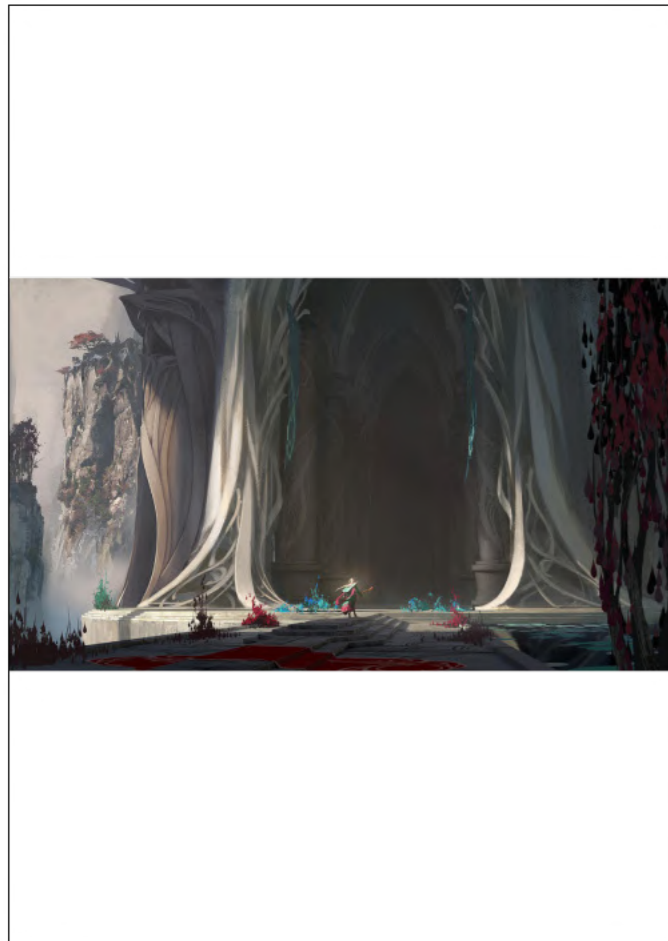
Imagine 3d rendering of ancient ruin with bright sunshine and stone columns, in the style of jessica rossier, gothic revival, dmitri danish, confessional, i can't believe how beautiful this is, light white and orange, mimicking ruined materials --ar 91:51

AI Probability: 33%

Imagine inside a large medieval cathedral is shown with orange lighting, in the style of jessica rossier, vray tracing, grandiose ruins, highly detailed foliage, neoclassical clarity, eerily realistic, neo-victorian --ar 91:51



AI Probability: 28.5%



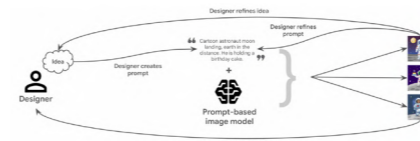
{3.4} ANALYSIS OF EXPERIMENTS

The study encompassed a broad exploration of AI's role in commercial illustration, utilizing tools like Adobe Photoshop's generative fill, Midjourney's AI model, and experiments with DALL-E. Notably, DALL-E was unique in occasionally stating it was against policy to recreate an exact image, a contrast to Midjourney and Adobe, which, despite their official stance, did not exhibit such restrictions in practice.

This process often resulted in a significant departure from the original idea, although it produced new and often interesting compositions. In many cases this was obvious. For example, Paula Scher's map of US counties and postal codes was transformed into a fantasy painting with a recurring motif of mushrooms. While this metamorphosis demonstrated AI's ability to create, it also drew attention to one of the major shortcomings of the technology: its inability to capture the soul of an original work of art. Instead, AI took a path unrelated to the original.

This can be a challenge in commercial illustration, where it is important to maintain brand personality and consistency. Therefore, despite the benefits AI can bring in terms of performance and novelty, its use needs to be monitored and refined so that it complements rather than replaces the original design objective.

Another component of the research in Chapter 3 was the use of an AI detector to distinguish between AI-generated and human-generated art. It is designed to evaluate artificial intelligence's capacity to create art capable of passing for human-created art, and AI detectors' capacity to accurately differentiate between both kinds of art. The results were inconclusive. The AI detector produced inconsistent and unpredictable results, often classifying AI art as human art and vice versa. The AI Detector's ability to successfully mimic human creativity is still questionable, based on the results of the AI Detector.



{FIGURE 321} The suggested by Kulkarni et al. (2023) workflow for AI and Designer

Concluding the chapter, the study reiterated that AI, while advanced, still relies heavily on human guidance and is far from operating autonomously. As highlighted in "A Word is Worth a Thousand Pictures" by Kulkarni et al. (2023), the concept of AI prompting does not function autonomously but acts as an interactive design element. This emphasizes the need for skilled management in using AI for commercial applications, dispelling the notion that AI can independently learn from past projects to navigate future creative endeavors. Human expertise remains essential in guiding AI to meet specific commercial objectives and creative visions.

In the previous chapters, we have both explored the history of digital illustration and design, examined the challenges in the contemporary workflow of designers, and experimented with AI tools to recreate commercial illustrations. This foundation brings us closer to the thesis' central question, "The impact of artificial intelligence on the illustration and design industry: is AI a threat or an opportunity?" Yet, it leaves several questions still open. We've seen that certain workflow hurdles for designers can be eased with modern technology. However, the ethical concerns and copyright issues surrounding AI create a significant barrier to its broad adoption.

According to It's Nice that Magazine, AI tools are already gaining their popularity — as their data suggests in the article (Shades of Intelligence: 83% of Creatives Are Already Using Machine Learning Tools – Is Now the Time to Get on Side With AI?, 2023) by It's Nice That Magazine, almost half (49%) of respondents said they had used AI tools in the past week, and 33% in the past six months. This trend suggests that AI technologies are becoming an integral part of our daily lives.

Moreover, an astounding 80% of survey participants stated that ideally, they would have AI assist them with routine tasks, making way for more creative pursuits. This trend highlights a growing desire to shift mundane, repetitive tasks to AI, freeing up time and mental capacity for more creative and fulfilling work.

Such preferences reinforce our hypothesis that AI is increasingly viewed as a catalyst for human creativity, rather than a mere substitute.

To corroborate these findings, I conducted interviews with designers. I hypothesise that there has been a significant shift in attitudes to work, favouring creativity and innovation over manual, repetitive tasks. This shift can be seen in the growing acceptance of AI for routine activities. Based on It's Nice That research, I believe this shift will lead to critical discussions about ethics, pushing companies towards transparent AI training methods and potentially prompting legal changes to ensure clarity and fairness in intellectual property and authorship. Let's explore whether this is true.

{4.1} QUANTITATIVE RESEARCH

4.1.1 PRESENTATION OF FINDINGS

{1} Familiarity with AI: The majority of respondents (94%) reported some level of familiarity with AI, with 40% reporting a high level of familiarity. Notably, 72% of respondents reported using AI-powered tools or applications in their creative work.

{2} Perception of AI's Impact on the Creative Field: When asked about the potential impact of AI on the creative field, 51% expressed excitement for the possibilities, while 44% reported concern about potential negative impacts. The remaining 5% were unsure of the impact.

{3} Beliefs about AI's Potential to Replace Creative Job Roles: While 15% believed AI could replace most job roles, a significant majority (56%) believed AI could replace some roles. A quarter of the respondents felt AI would not replace creative roles, with a small percentage unsure.

{4} Attitudes towards AI in the Design and Illustration Industry: Interestingly, respondents were split evenly when asked if they felt threatened by the use of AI in their field, with 50% answering 'yes' and 50% answering 'no'.

{5} Importance of AI Regulation in the Creative Field: The importance of AI regulation in the creative field was seen as important by 84% of the participants.

{6} Willingness to Use AI-Powered Tools in the Creative Process: When questioned about the potential for AI-powered tools to improve their creative process, a majority (62%) responded that they would definitely use them, with 34% open to the possibility depending on the tool.

{7} Confidence in Adapting to AI: Regarding confidence in adapting to AI, the majority (90%) expressed confidence in their ability to learn and adapt, while 9% were not confident.

4.1.2 ANALYSIS OF FINDINGS

In summary, AI is already an important part of the creative landscape, as evidenced by the high level of familiarity with AI among these professionals (94%) and the widespread use of AI tools in creative work (72%). More than half of respondents are optimistic about the possibilities of AI and are excited by its potential impact. This part of the survey results both confirms the theory expressed at the beginning of the chapter that people are already actively using AI in their work, and tilts the answer towards AI being more of an opportunity than a threat. However, in the immediate aftermath, this optimism is tempered by serious concerns, with almost half of the respondents worried about the negative impact that AI could have on the creative sector.

Opinions on the possibility of AI replacing creative jobs are also mixed. A significant proportion of respondents acknowledge that AI could replace some job roles, but at the same time they are confident that it will not completely replace the creative professions, suggesting that human creativity will continue to be important.

Reflecting the ongoing debate about the role of AI in the creative professions, the split in attitudes towards AI in the design and illustration industry is evenly split between those who feel threatened and those who don't. This points to the need for ongoing dialogue and exploration of how AI can be integrated in a way that supports and enhances human creativity, rather than replacing it.

The collective call for ethical standards and oversight of the use of AI technologies in the creative sector is underlined by the overwhelming consensus on the importance of AI regulation (84%). This highlights the need to balance innovation with ethical considerations, indicating a responsible approach to AI adoption.

Finally, the willingness to use AI-powered tools and the high level of confidence in adapting to AI among most respondents indicates a forward-looking approach: the creative community is largely open to exploring how AI can complement their creative processes.

Excited, Concerned and Unsure
Perception of AI's Impact on the Field



{FIGURE 322} Perception of AI's Impact on the Field based on the conducted survey

{4.2} QUALITATIVE RESEARCH

A carefully selected panel of experts was assembled for an in-depth discussion to understand the transformative impact of artificial intelligence on the design and illustration industry.

There were a number of key considerations in our selection of interviewees. Our choice of interviewees was a mix of people from different backgrounds: illustrators, graphic designers, brand experts and product designers. The inclusion of people from different backgrounds allowed us to understand the impact of AI in different areas in different ways. From old school drawing to the latest digital design, it helped us see how AI tools are used and changing in different parts of the industry.

We also talked to people with varying levels of experience, from those starting out to experts with more than a decade of experience. This combination gave us an understanding of the impact of AI on people at different stages of their careers. It showed us how the use of AI to make things has changed over time, and what people who have seen big changes in the industry think about it.

People's location was also part of the story. We had conversations with people from countries as diverse as Lithuania, Austria and Georgia. This mix of countries is an indication of how big the role of AI is in the design world. It also shows how culture and location can influence the use and perception of AI in creative work. This helps us understand the bigger picture of AI in the world and how it fits with local styles and ways of designing and illustrating.

It was also important that we had both men and women, as well as people who did not indicate their gender, as interviewees. Having different perspectives helps us to really get the full picture of how AI is changing the world for the better. We know that what people think and experience can vary greatly depending on gender. So the information we've gathered is not one-sided. It shows the importance of different perspectives in understanding the full impact of AI.

Finally, we had conversations with people who are just starting to use AI tools and those who have never used them in their work. This difference helped us

to understand how different people's perceptions of AI are in the industry, and why some may be hesitant about it. It also showed what challenges and opportunities people see at different stages of introducing AI into their work, and why they might be more or less enthusiastic about its use.

4.2.1 PRESENTATION OF PEOPLE

4.2.1.1 ULA

Ula is a designer and illustrator with an interesting international client base. Through her illustration agency Synergy Art, she works in Lithuania, Austria and other global locations. She works mainly in editorial illustration and has done projects ranging from book covers and website illustrations to several book projects in Lithuania and Austria. Originally trained in fine art, Ula still values the traditional approach of sketching in a sketchbook, but her career has gradually evolved towards applied art and digital techniques.

The most challenging aspect of her day-to-day work is the interaction with clients, especially those who have no experience in art direction. She feels that this can lead to undue interference in compositional decisions. This can undermine her professional expertise and trust in her ability to develop creative visual concepts and ideas.

Another obstacle in her creative process is finding appropriate references for her illustrations. When she needs specific poses or angles, this is particularly difficult. The use of stock photography can often make her work look less original, so she sometimes uses photos of herself or her friends to add authenticity. Google, Pinterest or her personal photo collection are her usual reference sources.

In terms of the use of AI, Ula has not yet incorporated AI tools such as ChatGPT or DALL-E into her workflow. She feels annoyed rather than excited or frightened by AI in the illustration industry. She sees AI as a domain dominated by large corporations. It could potentially threaten the job security of illustrators like herself. While Ula acknowledges the potential of AI to provide diverse references, she values the physical act of drawing and creating textures. She is reluctant to give up the pleasure she derives from this hands-on process.

Looking at the bigger picture, Ula worries that AI-driven efficiencies could add to the already demanding pace of editing. She is also worried that the increasing proliferation of AI-generated art could blur the distinction between AI and human creativity, which could lead to misunderstandings. However, she also ponders the possibility that this situation could lead to a new appreciation and revival of analogue media in the art world.

4.2.1.2 DANIL

Daniil has over 12 years of experience in branding and interface design. He is the founder of the Fabrika font foundry. Having previously worked with companies such as Yandex and Art. Lebedev Studio, he now focuses on consulting and creative leadership in brand and product design.

Daniil uses templates and scripts to automate some of his work, taking routine tasks and turning them into games or challenges. He wants to simplify certain tasks, such as maintaining colour quality and improving font kerning and image cropping.

He uses AI tools such as ChatGPT for writing and for combining photos with 3D figures, and appreciates the unique results they bring to his work. Rather than seeing AI as a threat to his profession, he sees it as a tool that depends on the skill of the user. For Daniil, good design must evoke emotion, regardless of its functionality or empathy.

Daniil looks for practical applications of AI in his work and keeps up with AI developments through social media and discussions with colleagues.

4.2.1.3 ARINA

Arina hasn't had much opportunity to use AI tools in her work as a graphic designer at Porto. She's curious about the possibilities, especially for illustration work. She's particularly interested in what Midjourney could do for an online magazine side project she's involved in.

Arina's view on AI in what she's doing is pretty balanced. She thinks AI might be more of a challenge for illustrators than designers. Design involves unique problem solving that AI hasn't fully mastered yet. However, for her, AI is a helpful tool for idea generation and concrete solutions, a kind of "smarter Pinterest".

There are a few tasks in her job that Arina would like to see AI take over, such as handling documents, creating specifications, streamlining processes and some parts of illustration. She's also very interested in AI solutions for accounting and for keeping track of tasks. Although she's not quite sure how this would work, Arina thinks there's room for AI to improve the way designers communicate with non-designers and clients.

Arina is optimistic about the impact of AI on her role as a designer. She's confident that AI will take care of the boring, time-consuming tasks, leaving designers free to focus on the more important parts of their job.

Arina is interested in the idea, although she's not currently part of any AI-focused community or resource for designers. Through friends and tech blogs, she keeps up with AI news. She thinks a community dedicated to designers working with AI would be great. They could share ideas, talk about new trends and tackle new challenges together. She'd also like to see more webinars and conferences on the topic of AI in design.

In summary, Arina sees AI as a useful tool in graphic design, mainly for automation of routine tasks and for inspiration. She is looking forward to learning more and using AI tools more in her work, even though she hasn't used them much yet.

4.2.1.4 YANA

AI tools such as Midjourney and Stable Diffusion have become part of the daily routine for Yana, an illustrator at Vizer Games. She uses these tools to create game art and icons. She has found that they make her workflow much more efficient than traditional methods, such as scouring Pinterest for references. She also sees these tools as a way to improve her skills, particularly in the area of image rendering.

Yana is aware of the significant impact that AI could have on her profession and on the job market in general. But she doesn't see these changes as a threat. She sees them as a natural part of progress. To stay relevant in her field, she's keen to adapt to new technologies, learn the latest software and develop her artistic skills.

At work, her colleagues have varying opinions about AI. Reactions range from enthusiasm to scepticism. However, Yana's initiative in using AI tools has been well received by management, especially as it has speeded up her work.

Looking to the future, especially as AI continues to develop, Yana believes that the ability to solve problems quickly will be key for professionals in her field. She believes that in order to meet the changing demands of the industry, it will be essential for all professionals to integrate AI into their work.

Yana takes a philosophical approach to issues such as privacy and the possibility of others using her style. She's not worried about her style being copied. She notes that borrowing styles and following trends has always been part of the art world.

To keep up with the latest advances in AI in illustration, Yana reads TG channels and appreciates the sense of community in her field. While she sometimes worries about not being able to learn all the AI features due to time constraints, she finds comfort in the fact that AI has taken away the pressure of comparing her work to that of other artists. For her, the stress of always trying to outdo her human counterparts is alleviated by the fact that even a machine can create impressive art.

4.2.1.5 VLAD

Vlad, an artist and designer specialising in Identity, Motion and Creative Coding, says the most tedious part of his job is preparing for pre-press. This task, he notes, shifts the creative aspects of his work to more routine, technical activities.

In his creative process, especially when pitching ideas and generating photorealistic images, Vlad is a big user of AI tools such as Chat GPT and Midjourney. A project in which he created a poster using AI-generated portraits and descriptions illustrates the power of these tools. He's particularly impressed with Midjourney's ability to create photorealistic images and how it can follow complex instructions and have an impact on the quality of the final product.

Vlad isn't worried about the increasing role of AI in design. He believes that as AI continues to develop, it will actually raise the bar in the design industry, making true creativity and artistry more important. He sees AI as a tool that will weed out mediocre design.

Vlad has a fairly relaxed attitude to privacy and intellectual property when it comes to design. He sees creative work as a collective achievement of civilisation, not just the product of an artist or designer, so he's not too worried about someone copying his style.

Vlad isn't always the first to jump on new tools when it comes to keeping up with AI developments. His preference is to wait until they are relevant to his work. However, he believes it's important to talk to other designers about AI. He's noticed a mix of concern and excitement in the design community as AI becomes more integrated into their world.

4.2.1.6 ANTHONY

Anthony is a visual and graphic designer. He hasn't started using AI tools in his professional work yet, but he's pretty excited about the possibilities. He's been keeping up with the latest AI trends in the art world and is interested in how these tools could help in the early stages of design. For example, in generating new ideas and visions for designers to take forward.

But while he's excited, Anthony also has some big concerns about how AI might fit into the world of designing. He's worried about what it means for design's legitimacy and the idea of AI replacing creatives. He's particularly focused on the ethical issues of how AI uses online resources, and thinks that if there's no proper control over how AI affects the industry, those starting out in design and design schools could be in trouble.

Anthony also highlights some potential downsides of AI, particularly in advertising and social media. In his view, the misuse of these technologies could have a negative impact on society. He's also concerned that AI could devalue art made by humans, and that AI-created work could infringe on copyright and property rights.

Although he doesn't use AI tools himself, Anthony has a well-rounded view of how they could affect the design industry, for better or worse. As the world of design continues to evolve, his thoughts highlight the importance of finding a balance between embracing new technologies and keeping ethical considerations in mind.

4.2.1.7 MARIKA

Marika is both a designer and a student. She has found AI tools very useful in her work, especially when it comes to creating assets for computer games. She's impressed with tools like Chat GPT, which she says gives her detailed instructions, similar to what a teacher would give. She is also a Mixamo user for the automation of the animation of 3D models for her games. She finds them invaluable for her creative work, although she admits that some AI tools still have their limitations. In the design and illustration industry, Marika sees AI as an opportunity rather than a threat. She likes to think of these tools as part of her "little design team". AI helps her with idea generation, reference finding, visualisation and animation, but she emphasises that human creativity is still key to the whole process. However, she's a little worried about how AI might speed up the process. Widespread use of AI could lead to tighter deadlines.

In a perfect situation, Marika would let the AI take care of all the technical parts of her work, including dealing with clients, so that she could concentrate fully on the creative side of things. She's particularly interested in the development of AI tools that can create 3D models from photo references, as she thinks this would be a big help in her field.

Although Marika is very interested in AI technology, she doesn't belong to any communities or resources that focus on helping designers integrate AI into their work. Given the competitive nature of her field, she's a bit sceptical about how useful such communities would be. Instead, where she can learn at her own pace and in her own way, she prefers to get her AI news and tips from platforms like TikTok.

4.2.1.8 POLINA

Polina is currently working on a project for Arrival, an electric car company, as a lead designer specialising in design systems and digital products. Her main focus is on the development of design systems and the co-ordination of various engineering projects.

Polina often uses AI tools such as MidJourney, Kaiber AI, Runway ML, Topaz Gigapixel AI and Chat GPT in both her professional and personal projects. These tools help her create character variations, enhance 3D characters, produce videos and

images, enhance and transform visuals, and assist with writing tasks. She appreciates the way that these AI tools allow her to do things that would be impossible to do by hand or using traditional computer methods.

Even as AI becomes more prevalent in the design industry, Polina is positive about these advances. She sees AI as a helpful tool for creating early versions of products or making creative suggestions. However, she doesn't think it can replace the unique role of human designers. She stresses the importance of the human touch, noting that AI can't quite capture emotional elements or the subtle nuances of human thought.

Polina finds the development of neural networks very exciting for the design world. She envisions a future where designers can focus more on conceptual work and human-centred issues, such as improving customer interaction.

She disagrees with the idea that AI will take jobs away from artists. For her, AI is just a new tool or medium that artists and designers can learn to use, just like any traditional artistic tool.

To keep up with AI developments, Polina mainly uses Instagram, Google and news updates. She also talks to friends who use AI tools, finding these conversations essential for learning about new tools and trying out their features.

When it comes to the idea of influencing the development of AI tools in product design, Polina is interested in automating the creation of design iterations. However, she thinks it's important not to let AI go too far in areas that are fundamentally about human interaction, such as mental health support, which she sees as potentially unethical.

4.2.2 ANALYSIS OF INTERVIEWS

Each person had a different perspective on AI. This tells us that the impact of AI is not the same for everyone—it depends on what you do, the specifics of your work and personal choices. These designers' mixture of excitement, doubt and practical thinking reflects that people are still trying to figure out how to work with AI in the creative professions.

But the concerns they shared show that we need to be cautious and thoughtful about how we incorporate AI into our work. It's not just about making things

automatic, but what it means for our work and society. Their views remind us that things like emotion, intuition, and unique creative ideas are still within the control of humans alone.

Professionals such as Yana and Marika are examples of this viewpoint, using AI to streamline tasks and encourage creative exploration. This trend is indicative of a shift in the perception of AI from that of a mere technological advance to that of a practical asset in the creative process.

While AI is capable of automation and suggestion, there's consensus that it cannot replace the nuanced human touch essential to design and illustration. This idea is echoed by Daniil, who sees AI as an assistant rather than a replacement. The interviews suggest that it is the balance between technological assistance and human creativity that will determine the successful integration of AI in design.

Anthony's concerns about industry legitimacy and the potential replacement of human creators by AI echo significant concerns. Concerns were frequently raised about ethical considerations, particularly in relation to copyright, originality and the potential devaluation of human-created art. These interviews suggest that the industry needs to address these ethical challenges as AI becomes more integrated into the workflow.

A number of designers, including Ula, expressed concerns about the potential for AI-driven efficiencies to increase the pace of work and tighten deadlines. Conversely, Vlad sees AI as a catalyst for raising design standards. He suggests that AI could filter out mediocre work. These contrasting views point to a dynamic and evolving landscape in the design industry as a result of AI integration.

Looking to the future, there's a shared expectation that AI will continue to transform the design industry. Polina's vision of designers focusing more on conceptualisation and human-centred issues, with AI handling routine tasks, is a common expectation. This forward-looking stance is tempered with caution, emphasising the need to balance AI integration with maintaining the core values of the design profession.

The importance of community and continuous learning emerged as a key theme. While Marika relies on platforms such as TikTok for AI insights, Polina emphasises discussions with peers. This highlights the role of community in adapting to AI advances, and the need for shared learning.

The answer to the research question of whether AI is a threat or an opportunity for the design and illustration industry lies in the middle. The methodological foundation for the whole study is laid in the first chapter. There is a significant gap in the debate on the development and dangers of AI in design, which is often limited to utopian or dystopian perceptions, according to Stoimenova and Price (2020). In order to provide a more comprehensive understanding of complex issues such as our study, the chosen methodology is a mixed methods research approach that combines qualitative and quantitative approaches. This chapter also assesses the potential limitations associated with voluntary participation in the study — the sample may not fully reflect the views of the weight of the industry, as participants may have views that differ from potential participants who choose not to participate. The chapter also discusses the choice of data collection technique and interview methodology — semi-structured interviews provide an in-depth understanding of participants' perspectives and attitudes within the industry.

Chapter 2 is a large, comprehensive analysis of the interaction between artificial intelligence and the creative industries. It discusses both its roots and its contemporary influence through literature reviews and case studies. This chapter, together with Chapter 3, where we saw that AI is becoming an integral part of our lives—the quantitative research shows a high level of familiarity with AI among professionals (94%) and a widespread use of AI tools in creative work (72%)—reveals a complex, dual dynamic:

Opportunities from a positive perspective: Chapters 2, 3 and 4 emphasise (in terms of possibilities): technology opens up new horizons for creativity. For example, it can be used as a tool to find unexpected, previously unseen directions. The idea is that unexpected turns can lead to innovative ideas that can move the field forward. These findings have been confirmed by experiments. The development of AI also contributes to efficiency and effectiveness. It provides tools to quickly visualise ideas and automate routine tasks. In addition, it improves the efficiency of production and routine tasks: it turns out that so-called boring tasks take up a lot of time and energy (and sometimes lead to burnout, as we found in the literature review),

leaving no energy for non-creative tasks. The fact that AI can potentially help in such permutations is a plus point in this study. This can be a catalyst for new ways of working, productivity improvements and cost reductions. But it can also lead to job losses and changes in the skill requirements of professionals. The research points this out.

On the other hand, the research also reveals that there are serious legal and ethical issues associated with AI, that also reflected in the concerns of 44% of the survey respondents about potential negative impacts. Uncertainty about authorship of AI-generated works is one of the key issues. There is ambiguity around intellectual property and copyright. Legislation has not yet adapted to the rapidly evolving nature of AI. Ethical and legal questions remain unanswered. Responsibility for the actions of AI is often shifted from its creators to the technology itself, which is ascribed human qualities despite the fact that AI does not possess consciousness. In addition, the learning processes of AI remain unclear. This raises questions about methods of using existing works as training data.

In terms of the social and economic implications of integrating AI into the design and illustration industry, the possibilities of automation can (and already do) lead to changes in the structure of the labour market. This can lead to both the creation of new jobs and the obsolescence of certain occupations. What's more, some companies have already started to lay off people in favour of artificial intelligence. Some creative people, such as illustrators in the games industry, will be made redundant and will have to retrain or become unemployed. It's happening now. The trajectory of these changes is neither straightforward nor uniformly positive. The challenge is that the history of technological innovation is often characterised by new technologies that disrupt existing labour markets, but also create new opportunities. In the case of AI, however, this pattern seems less predictable and more complex. The lack of clear frameworks and guidelines for integrating AI into the creative industries exacerbates this uncertainty. Without them, it is difficult to determine whether the current trend of job displacement will be offset by the creation of new roles, or whether it will result in a net loss of employment opportunities in the sector. The study found that while some respondents believe that AI can replace most jobs (15%), a large majority (56%) believe that AI can replace some

roles, but not fully replace creative occupations.

This is in line with the finding that the pattern of AI's impact on jobs is complex and unpredictable.

This research suggests, that for AI to develop safely in the future, well-developed policies must be put in place. These policies will need to balance the positive aspects of AI with protecting professional interests and industry standards. Central to such policies should be clear ethical guidelines, including the resolution of complex issues around intellectual property rights, nuances of authorship and the ethical use of existing works for learning. It is also important to find a framework that defines responsibility and ensures transparency in the development and use of AI — processes need to be spelled out and both creators and users of AI tools need to be held accountable for their outcomes.

The involvement of a wide range of stakeholders in the policy-making process will also be crucial.

To ensure that a wide range of concerns and perspectives are taken into account, this inclusive approach should bring together artists, designers, technology developers, lawyers and policy makers. For example, Ula, an illustrator, expressed concern that AI threatens workplace safety and dilutes creative authenticity, while Daniil, a brand and interface designer, sees AI as a tool that enhances his creative process. In order to create policies that are not only effective, but also fair, such collaboration is key.

Finally, in light of the dynamic nature of AI, it is important that these policies are not static. This is important because there are currently many immovable laws that cannot quickly adapt to AI, as we saw in the literature review in Chapter 2. Even if we have new laws in place now, the speed at which technology evolves means that we may have new problems on our hands again. Therefore, they need to be flexible and adaptable, with mechanisms to review and update on a regular basis.

Policymakers can help steer AI development in a direction that maximises its benefits and minimises risks and negative impacts by focusing on these issues. Such a strategic approach is fundamental to the creation of an environment in which AI can be a force for innovation and progress in the creative industries, without sacrificing ethical standards, and value of human creativity.

{BIBLIOGRAPHY}

Adobe Firefly - Free Generative AI for creatives. (n.d.). Retrieved May 9, 2023, from <https://www.adobe.com/products/firefly.html>

Agarwal, R., & Karahanna, E. (2000). Time Flies When You're Having Fun: Cognitive Absorption and Beliefs about Information Technology Usage. *Management Information Systems Quarterly*, 24(4), 665. <https://doi.org/10.2307/3250951>

AI USE CASE: How a mobile game development studio saved \$70K in expenses | Game World Observer. (2023, January 27). Game World Observer. Retrieved May 4, 2023, from <https://gameworldobserver.com/2023/01/27/ai-use-case-how-a-mobile-game-development-studio-saved-70k-in-expenses>

Amabile, T. M., Hadley, C. N., & Kramer, S. J. (2002). Creativity under the gun. *PubMed*, 80(8), 52–61, 147. <https://pubmed.ncbi.nlm.nih.gov/12195920>

Androschuk, H. (2022). Intellectual property and artificial intelligence: who is the author? *Štućnij Āntelekt*, 27(jai2022.27(1)), 166–182. <https://doi.org/10.15407/jai2022.01.166>

Ashworth, B. (2023, June 28). How to use Discord: A Beginner's guide. WIRED. Retrieved October 29, 2023, from <https://www.wired.com/story/how-to-use-discord/>

Baines, D., Bates, I., Bader, L., Hale, C., & Schneider, P. J. (2018). Conceptualising production, productivity and technology in pharmacy practice: a novel framework for policy, education and research. *Human Resources for Health*, 16(1). <https://doi.org/10.1186/s12960-018-0317-5>

Baumeister, R. F., & Leary, M. R. (1997). Writing narrative literature reviews. *Review of General Psychology*, 1(3), 311–320. <https://doi.org/10.1037/1089-2680.1.3.311>

Berke, S. (2023). Direct labor market effects of artificial intelligence assisted applications based on the opinions of illustrators and company managers: Hungarian case study. *The Eurasia Proceedings of Science Technology Engineering and Mathematics*, 23, 495–504. <https://doi.org/10.55549/epstem.1374905>

Bird, L., & Labelle, G. (2010). Re-Animating Greg Lynn's Embryological House: a case study in digital Design preservation. *Leonardo*, 43(3), 243–249. <https://doi.org/10.1162/leon.2010.43.3.243>

Borji, A. (2022). Generated Faces in the Wild: Quantitative comparison of stable diffusion, midjourney and DALL-E 2. *arXiv (Cornell University)*. <https://doi.org/10.48550/arxiv.2210.00586>

Bridy, A. (2023, June 18). Coding Creativity: Copyright and the Artificially Intelligent author. Retrieved September 28, 2023, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1888622

Bunjak, A., Černe, M., & Popovič, A. (2021). Absorbed in technology but digitally overloaded: Interplay effects on gig workers' burnout and creativity. *Information & Management*, 58(8), 103533. <https://doi.org/10.1016/j.im.2021.103533>

Can AI help you win your next brief? (2023, November 15). Retrieved December 2, 2023, from <https://www.itsnicethat.com/features/shades-of-intelligence-insights-the-brief-creative-industry-ai-151123>

Chen, Y. (2023). Pandoras Pixel Box: The rise of AI art and the ethical dilemma of creativity. *Lecture Notes in Education Psychology and Public Media*, 28(1), 135–143. <https://doi.org/10.54254/2753-7048/28/20231315>

Clarke, L. (2022, November 18). When AI can make art – what does it mean for creativity? *The Guardian*. Retrieved February 3, 2023, from <https://www.theguardian.com/technology/2022/nov/12/when-ai-can-make-art-what-does-it-mean-for-creativity-dall-e-midjourney>

Cortés, G. M., Jaimovich, N., & Siu, H. (2017). Disappearing routine jobs: Who, how, and why? *Journal of Monetary Economics*, 91, 69–87. <https://doi.org/10.1016/j.jmoneco.2017.09.006>

Cotroneo, P., & Hutson, J. H. (2023). Generative AI tools in art education: Exploring prompt engineering and iterative processes for enhanced creativity. *Metaverse*, 4(1), 14. <https://doi.org/10.54517/m.v4i1.2164>

Cox, A. (2021). Exploring the impact of Artificial Intelligence and robots on higher education through literature-based design fictions. *International Journal of Educational Technology in Higher Education*, 18(1). <https://doi.org/10.1186/s41239-020-00237-8>

Designboom. (2023, August 23). AI has generated 150 years worth of images in less than 12 months, study shows. *Designboom | Architecture & Design Magazine*. Retrieved September 12, 2023, from <https://www.designboom.com/technology/ai-has-generated-150-years-worth-of-photographs-in-less-than-12-months-study-shows-08-21-2023/>

- Diaconescu, A. (2019). Efficiency versus creativity as organizing Principles of Socio-Technical Systems: Why do we build (Intelligent) systems? [Commentary]. *IEEE Technology and Society Magazine*, 38(1), 13–22. <https://doi.org/10.1109/mts.2019.2894455>
- Dietrich, F. (1986). Visual intelligence: The first decade of computer art (1965-1975). *Leonardo*, 19(2), 159. <https://doi.org/10.2307/1578284>
- Drummond, S. (2022, September 27). The future is what you think it is - Sarah Drummond - Medium. Medium. Retrieved December 7, 2022, from <https://sarahdrummond.medium.com/the-future-is-what-you-think-it-is-d7a54369ea32>
- Farella, E. M., Malek, S., & Remondino, F. (2022). Colorizing the past: Deep learning for the automatic colorization of historical aerial images. *Journal of Imaging*, 8(10), 269. <https://doi.org/10.3390/jimaging8100269>
- Fathoni, A. F. C. A. (2023). Leveraging generative AI solutions in art and design education: bridging sustainable creativity and fostering academic integrity for innovative society. *E3S Web of Conferences*, 426, 01102. <https://doi.org/10.1051/e3sconf/202342601102>
- Fonseca, T., Lima, F., & Pereira, S. C. (2018). Job polarization, technological change and routinization: Evidence for Portugal. *Labour Economics*, 51, 317–339. <https://doi.org/10.1016/j.labeco.2018.02.003>
- Generative AI: Use case scenarios | CSAIL Alliances. (n.d.). CSAIL Alliances. <https://cap.csail.mit.edu/generative-ai-use-case-scenarios>
- Goodfellow, I. J., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., Courville, A., & Bengio, Y. (2014). Generative adversarial networks. *arXiv (Cornell University)*. <https://doi.org/10.48550/arxiv.1406.2661>
- Gorny, L. (2024, January 19). Enter a prompt and this “non-AI artist” will render it as an artwork. Retrieved January 20, 2024, from <https://www.itsnicethat.com/news/pablo-delcan-prompt-brush-digital-190124>
- Guinness, H. (2024, January 16). Midjourney vs. Stable Diffusion: Which AI image generator should you use? [2024]. Retrieved January 20, 2024, from <https://zapier.com/blog/midjourney-vs-stable-diffusion/>
- Gupta, V., Sadana, R., & Moudgil, S. (2019). Image style transfer using convolutional neural networks based on transfer learning. *International Journal of Computational Systems Engineering*, 5(1), 53. <https://doi.org/10.1504/ijcsyse.2019.098418>
- Gwira, C. (2023, October 23). 12 Best AI Text-to-Image Tools in 2023 (Compared). *Elegant Themes Blog*. Retrieved January 2, 2024, from <https://www.elegantthemes.com/blog/design/best-ai-text-to-image-tools#3-midjourney>
- Heikkilä, M. (2022, September 21). The Algorithm: AI-generated art raises tricky questions about ethics, copyright, and security. *MIT Technology Review*. Retrieved November 5, 2022, from <https://www.technologyreview.com/2022/09/20/1059792/the-algorithm-ai-generated-art-raises-tricky-questions-about-ethics-copyright-and-security/>
- Holtermann, B. (2021, January 25). Killed in the Art? How artificial intelligence challenges the fictional concept of the skilled person in patent law. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3772976
- Horton, C., White, M., & Iyengar, S. S. (2023). Bias against AI art can enhance perceptions of human creativity. *Scientific Reports*, 13(1). <https://doi.org/10.1038/s41598-023-45202-3>
- How does your productivity stack up? (2019, July 16). *MIT News | Massachusetts Institute of Technology*. Retrieved November 14, 2022, from <https://news.mit.edu/2019/how-does-your-productivity-stack-up-robert-pozen-0716>
- Huang, H., Wang, H., Luo, W., Ma, L., Jiang, W., Zhu, X., Li, Z., & Liu, W. (2017). Real-Time Neural Style Transfer for Videos. 2017 IEEE Conference on Computer Vision and Pattern Recognition (CVPR). <https://doi.org/10.1109/cvpr.2017.745>
- Hutson, J. H., & Lang, M. (2023). Content creation or interpolation: AI generative digital art in the classroom. *Metaverse*, 4(1), 13. <https://doi.org/10.54517/m.v4i1.2158>
- If art is how we express our humanity, where does AI fit in? (2023, June 15). *MIT News | Massachusetts Institute of Technology*. Retrieved January 5, 2024, from <https://news.mit.edu/2023/generative-ai-art-expression-0615>
- Kulkarni, C., Druga, S., Chang, M., Fiannaca, A., Cai, C. J., & Terry, M. (2023). A Word is Worth a Thousand Pictures: Prompts as AI Design Material. *arXiv (Cornell University)*. <https://doi.org/10.48550/arxiv.2303.12647>

- LaFrance, A. (2015, March 30). When people feared computers. *The Atlantic*. Retrieved October 8, 2023, from <https://www.theatlantic.com/technology/archive/2015/03/when-people-feared-computers/388919/>
- Lambert, N., Latham, W., & Leymarie, F. F. (2013). The Emergence and Growth of Evolutionary Art - 1980–1993. *Leonardo*, 46(4), 367–375. https://doi.org/10.1162/leon_a_00608
- Larsson, G., Maire, M., & Shakhnarovich, G. (2016). Learning representations for automatic colorization. In *Lecture Notes in Computer Science* (pp. 577–593). https://doi.org/10.1007/978-3-319-46493-0_35
- Liu, G. (2023, June 12). The world's smartest artificial intelligence just made its first magazine cover. *Cosmopolitan*. Retrieved November 3, 2023, from <https://www.cosmopolitan.com/lifestyle/a40314356/dall-e-2-artificial-intelligence-cover/>
- Lopez, M. G., Porlezza, C., Cooper, G., Makri, S., MacFarlane, A., & Missaoui, S. (2022). A Question of Design: Strategies for Embedding AI-Driven Tools into Journalistic Work Routines. *Digital Journalism*, 11(3), 484–503. <https://doi.org/10.1080/21670811.2022.2043759>
- Loukidou, L., Loan Clarke, J., & Daniels, K. (2009). Boredom in the workplace: More than monotonous tasks. *International Journal of Management Reviews*, 11(4), 381–405. <https://doi.org/10.1111/j.1468-2370.2009.00267.x>
- Mansor. (2023, November 3). What is AI Upscaling and How Does it Work? My Personal Take. *TheTechCompass*. Retrieved December 29, 2023, from <https://thetechcompass.com/what-is-ai-upscaling>
- Mark, G. (2008). The cost of interrupted work: more speed and stress. Retrieved August 3, 2023, from <https://www.semanticscholar.org/paper/The-cost-of-interrupted-work%3A-more-speed-and-stress-Mark-Gudith/b8da65570a3955db52b117b9bedd8f131316501d>
- Mark, G., Voida, S., & Cardello, A. V. (2012). "A pace not dictated by electrons." *Association for Computing Machinery*. <https://doi.org/10.1145/2207676.2207754>
- Matthews, J., Fastnedge, D., & Nairn, A. (2023). The future of advertising campaigns: The role of AI-generated images in advertising creative. *Journal of Pervasive Media*, 8(1), 29–49. https://doi.org/10.1386/jpm_00003_1
- Maxwell, J. A., & Loomis, D. (2003). Mixed method design: An alternative approach. *ResearchGate*. https://www.researchgate.net/publication/313552075_Mixed_method_design_An_alternative_approach
- Measuring, Defining and Improving Productivity: The Design Productivity Blueprint. (n.d.). Spotify Design. Retrieved October 27, 2023, from <https://spotify.design/article/measuring-defining-and-improving-productivity-the-design-productivity>
- MIT Sloan Teaching & Learning Technologies. (2023, February 8). AI Image Generation Tools - MIT Sloan Teaching & Learning Technologies. Retrieved April 7, 2023, from https://mitsloanedtech.mit.edu/ai/tools/images/#At_a_Glance
- Oksanen, A., Cvetkovic, A., Akin, N. O., Latikka, R., Bergdahl, J., Chen, Y., & Savela, N. (2023). Artificial intelligence in fine arts: A systematic review of empirical research. *Computers in Human Behavior Artificial Humans*, 1(2), 100004. <https://doi.org/10.1016/j.chbah.2023.100004>
- Overview of GAN structure. (2022). Google for Developers. Retrieved May 9, 2023, from https://developers.google.com/machine-learning/gan/gan_structure
- Patton, M. Q. (1990). Qualitative evaluation and research methods. *International Journal of Information Management*. https://www.academia.edu/28766598/Qualitative_evaluation_and_research_methods
- Perlich, C., D'Alessandro, B., Raeder, T., Stitelman, O., & Provost, F. (2013). Machine learning for targeted display advertising: transfer learning in action. *Machine Learning*, 95(1), 103–127. <https://doi.org/10.1007/s10994-013-5375-2>
- Pykes, K. (2023, November 10). An Introduction to using DALL-E 3: Tips, examples, and features. Retrieved December 28, 2023, from <https://www.datacamp.com/tutorial/an-introduction-to-dalle3>
- Rice, J. (1998). Study of job burnout in technical writers and technical illustrators/designers at LLNL. <https://doi.org/10.2172/15177>
- Rinkerman, G. (2023). Artificial Intelligence and Evolving Issues Under U.S. Copyright and Patent Law. *Advanced Access Articles*, 11—18. <https://doi.org/10.4337/ielr.2023.0002>
- Rogers, R. (2023, October 28). How to create images with ChatGPT's new Dall-E 3 integration. *WIRED*. Retrieved November 7, 2023, from <https://www.wired.com/story/how-to-use-chatgpt-dalle-3-create-images/>

- Rosen, L. D., Sears, D. C., & Weil, M. M. (1987). Computerphobia. *Behavior Research Methods Instruments & Computers*, 19(2), 167–179. <https://doi.org/10.3758/bf03203781>
- Schaufeli, W. B., & Salanova, M. (2014). Burnout, boredom and engagement at the workplace. N.D. <https://lirias.kuleuven.be/handle/123456789/487882>
- Shades of Intelligence: 83% of creatives are already using machine learning tools – is now the time to get on side with AI? (2023, November 15). Retrieved November 8, 2023, from <https://www.itsnicethat.com/features/shades-of-intelligence-insights-launch-creative-industry-ai-151123>
- Sood, N., Nandakumar, N., & Rajkumar, S. (2021). Automatic Colorization of images using Auto-encoders. 2021 8th International Conference on Signal Processing and Integrated Networks (SPIN). <https://doi.org/10.1109/spin52536.2021.9566101>
- Spindler, G. (2019). Copyright Law and Artificial Intelligence. *IIC - International Review of Intellectual Property and Competition Law*, 50(9), 1049–1051. <https://doi.org/10.1007/s40319-019-00879-w>
- Stanley-Becker, I., & Harwell, D. (2023, April 1). How a tiny company with few rules is making fake images go mainstream. *Washington Post*. Retrieved July 20, 2023, from <https://www.washingtonpost.com/technology/2023/03/30/midjourney-ai-image-generation-rules/>
- Stoimenova, N., & Price, R. (2020). Exploring the Nuances of Designing (with/for) Artificial Intelligence. *Design Issues*, 36(4), 45–55. https://doi.org/10.1162/desi_a_00613
- Strassmann, P. A. (1985). *Information Payoff: The Transformation of work in the Electronic Age*. https://openlibrary.org/books/OL2861892M/Information_payoff
- Sutherland, I. E. (1964). SketchPad a Man-Machine graphical communication system. *SIMULATION*, 2(5), R-20. <https://doi.org/10.1177/003754976400200514>
- The Future of Jobs Report 2023. (2023, April 30). World Economic Forum. Retrieved June 7, 2023, from <https://www.weforum.org/publications/the-future-of-jobs-report-2023/>
- Timms, M. J. (2016). Letting artificial intelligence in education out of the box: educational cobots and smart classrooms. *International Journal of Artificial Intelligence in Education*, 26(2), 701–712. <https://doi.org/10.1007/s40593-016-0095-y>
- Torraco, R. J. (2005). Writing Integrative Literature Reviews: Guidelines and Examples. *Human Resource Development Review*, 4(3), 356–367. <https://doi.org/10.1177/1534484305278283>
- Vincent, J. (2023a, January 16). AI art tools Stable Diffusion and Midjourney targeted with copyright lawsuit. *The Verge*. Retrieved February 14, 2023, from <https://www.theverge.com/2023/1/16/23557098/generative-ai-art-copyright-legal-lawsuit-stable-diffusion-midjourney-deviantart>
- Vincent, J. (2023b, March 29). Elon Musk and top AI researchers call for pause on ‘giant AI experiments.’ *The Verge*. <https://www.theverge.com/2023/3/29/23661374/elon-musk-ai-researchers-pause-research-open-letter>
- Wang, V., & Wang, D. (2021). The impact of the increasing popularity of digital art on the current job market for artists. *Art And Design Review*, 09(03), 242–253. <https://doi.org/10.4236/ad.2021.93019>
- Weiss, R. S. (1995). Learning from Strangers: The Art and Method of Qualitative Interview Studies. *Contemporary Sociology*, 24(3), 420. <https://doi.org/10.2307/2076552>
- Wilson, D. (2022, August 15). Battling Burnout: How to identify burnout on your design team. *How to Identify Burnout on Your Design Team*. Retrieved July 10, 2023, from <https://www.superside.com/blog/identify-burnout>
- World Health Organization: WHO. (2019, May 28). Burn-out an “occupational phenomenon”: International Classification of Diseases. Burn-out an “Occupational Phenomenon”: International Classification of Diseases. Retrieved July 3, 2022, from <https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases>
- Xue, Y., & Zhou, Z. (2021). The copyrightability and ownership analysis of artificial intelligence creations. *Scientific and Social Research*, 3(5), 1–6. <https://doi.org/10.36922/ssr.v3i5.1200>
- Yoon, B. (2022). Comparative study of the copyright laws for artificial intelligence in the UK and Korea. *Comparative Law Review*, 28, 281–314. <https://doi.org/10.12775/clr.2022.009>
- Zhou, V., & Liu, Y. (2023, April 24). AI is already taking video game illustrators’ jobs in China. *Rest of World*. Retrieved December 2, 2023, from <https://restofworld.org/2023/ai-image-china-video-game-layoffs/>

{LIST OF IMAGES}

[Figure 1, The hub and linkages in Maxwell and Loomis's (2003) study]

[Figure 2, Engineer using a light pen on the TX-2 computer for CAD, 1962-1963, MIT Museum]

[Figure 3, First magazine cover generated by an AI, Cosmopolitan]

[Figure 4, AI-Generated Fake Image of the Formal President of the United States being arrested. This image went viral, receiving millions of views in a few days]

[Figure 5, Designer Burnout Mind Map by Nakia Shelton, 2020]

[Figure 6, Screenshot of Experimentation with Google's Auto Draw for This Thesis]

[Figure 7, The image depicts a social media post written in Russian from a digital artist Elena Belov who has completed a course on prompt-engineering with MidJourney. The artist is offering their services for project-based work]

[Figure 8, Feedback Loop in Overview of GAN Structure in Machine Learning Course, Google]

[Figure 9, Fully automatic colorization result on CNN. It reproduces known object color characteristics, such as faces, sky, grass, fruit, and woods, and coherently selects colors for objects that do not have these characteristics, such as clothes]

[Figure 10, Some examples of historical greyscale images (first row) coloured with the proposed Hyper-U-NET (second row)]

[Figure 11, The original of "U.S. Counties and Zip Codes", Paula Scher]

[Figures 12-40, Artificial intelligence's adaptation of the project "U.S. Counties and Zip Codes"]

[Figure 41, Adobe Firefly adaptation of the project "U.S. Counties and Zip Codes"]

[Figure 42, DALL-E 2 adaptation of the project "U.S. Counties and Zip Codes"]

[Figure 43, The original of the "You Me" by Paula Scher]

[Figures 44-72, Artificial intelligence's adaptation of the project "You Me" by Paula Scher]

[Figure 73, Adobe Firefly's adaptation of the project "You Me" by Paula Scher]

[Figure 74, DALL-E refuses to generate an image due to restrictions on content rules]

[Figure 75, The logo "I Love NY" logo by Milton Glaser]

[Figures 76-105, AI's adaptation of the logo "I Love NY" logo by Milton Glaser]

[Figure 106, Adobe Firefly's adaptation of the logo "I Love NY" logo by Milton Glaser]

[Figure 107, DALL-E 2 adaptation of the logo "I Love NY" logo by Milton Glaser]

[Figure 108, The flag of Amsterdam]

[Figures 109-130, AI's adaptation of the flag of Amsterdam]

[Figure 131, Adobe Firefly's adaptation of the flag of Amsterdam]

[Figure 132, DALL-E 2 adaptation of the flag of Amsterdam]

[Figure 133, The original: "Hope" poster by Shepard Fairey]

[Figures 134-162, AI's adaptation of the "Hope" poster by Shepard Fairey]

[Figure 163, Adobe Firefly's adaptation of the "Hope" poster by Shepard Fairey]

[Figure 164, Refuses to generate an image due to restrictions on content rules]

[Figure 165, The original: La Goulue by Henri de Toulouse-Lautrec, 1891]

[Figures 166-194, Artificial intelligence's adaptation of the original]

[Figure 195, Adobe Firefly's adaptation of "La Goulue by Henri de Toulouse-Lautrec"]

[Figure 196, DALL-E 2 adaptation of "La Goulue by Henri de Toulouse-Lautrec"]

[Figure 197, The original: Beeple's 3D piece "Magic Kingdome"]

[Figures 198-227, Artificial intelligence's adaptation of the original]

[Figure 228, Adobe Firefly's adaptation of the original]

[Figure 229, DALL-E refuses to generate an image due to restrictions on content rules]

[Figure 230, The original: Fran Rossi's 3D illustration]

[Figures 231-259, Artificial intelligence's adaptation of the original]

[Figure 260, Adobe Firefly adaptation of the original]

[Figure 261, DALL-E 2 adaptation of the original]

[Figure 262, The original: Paul Robertson's Art]

[Figures 263-295, Artificial intelligence's adaptation of the original]

[Figure 296, Adobe Firefly's adaptation of the original]

[Figure 297, DALL-E 2 adaptation of the original]

[Figure 298, Hyun Lee's Environment Concept Art for League of Legends]

[Figures 299-319, Artificial intelligence's adaptation of the original]

[Figures 320, Adobe Firefly's adaptation of the original]

[Figure 321, DALLE-2 adaptation of the original]

[Figure 321, The suggested by Kulkarni et al. (2023)
workflow for AI and Designer]

[Figure 322, Perception of AI's Impact on the Field
based on the conducted survey]

INTERVIEW TRANSCRIPTS

INTERVIEW WITH ULA / PORTO DESIGNER AND ILLUSTRATOR, 29

VC: Before we dive into the questions, could you please introduce yourself? Maybe you could share a bit about your background, your current role, and your experience in the design industry?

U: As an introduction, in design terms, I primarily work as an illustrator. I also handle some editorial and poster design work, but my focus is mostly on illustration. I have been trying to expand my profile a little, and in the field of illustration, I predominantly work on editorial illustrations. I work with clients from Lithuania and Austria, as I used to live in Austria. Furthermore, I'm represented worldwide by an illustration agency in London, UK, called Synergy Art. They help me land gigs and find clients outside of Austria or Lithuania, and they receive a percentage for this.

Thanks to them, I've had the opportunity to work with prominent clients like The Guardian, The Wall Street Journal, and Penguin Books, so they have quite a solid client base. I mostly work on tutorials. In addition to this, I design book covers and create illustrations for websites. In Lithuania and Austria, I've had the experience of illustrating books. I think I've illustrated about six books in total. So that's a snapshot of my experience in the design and illustration industry.

In terms of technique, I primarily work digitally, though of course, I make scribbles in my sketchbook. My initial education was more focused on fine arts, such as printmaking in illustration, but it has gradually shifted more towards applied arts, namely illustration.

VC: In your day-to-day work, are there any routine tasks that you find particularly frustrating? If so, could you share more about them?

U: Regarding day-to-day tasks in my routine, the aspect I find most frustrating is communication with the client. Miscommunication or instances where a client tries to make decisions in my area of expertise can be challenging. For instance, if someone who isn't an art director insists on certain compositional choices, like "you should place that object in the right corner of the illustration". Art directors usually have some visual experience, and their suggestions typically make sense.

It's frustrating and disheartening when there's this perception that they're more competent in my field than I am. My role isn't only about drawing, but also about developing visual concepts and ideas. So, this lack of trust is the most frustrating part for me.

However, when it comes to the process of drawing, I wouldn't call it frustrating. At times, it's just not easy to find good references for your work, especially because I'm not skilled enough to draw poses of people out of my head. I wouldn't label this as frustrating, though. Rather, I find it challenging at times and something that requires more time to get right.

VC: You mentioned about difficulties in finding the right references for drawing poses. Are there any specific types of references that are more challenging to find? What apps are you usually using for it?

U: Well, references can be for anything, really, such as a person's face, or specific poses. For example, a person climbing down the stairs from a lower angle, or people doing sports, or if you need a more specific angle of a person's face. I really try not to outright copy a photo because it shows. It's also difficult to find references that aren't so much like stock photos because if you just redraw the stock photo in your picture, then it just shows.

Sometimes, I end up taking pictures of myself, or my friends, because it feels more authentic. What I've noticed is that sometimes people draw from the same references and it's so obvious that people used the same picture of a person from Pinterest. When it comes to searching for references, I use Google, Pinterest, or my own photo collection where I took pictures of other people. Something like that.

VC: It's interesting! Have you ever used AI tools in your work? How have these tools influenced your creative process?

U: It's interesting to know what we consider AI. Some Photoshop tools, like the Magic Wand, could be seen as AI in a way. But if we're talking about things like Chat GPT or DALL·E, or if I've ever used generated images for my work — the answer is no, neither for illustrations nor for reference.

VC: As for my next question, it's about your perception of the role of AI in the illustration industry, even if it's based on your understanding or feelings rather than direct experience. Do you see AI as more of an opportunity or a threat to the illustration (or design!) industry, and why?

U: When I first heard about AI in illustration, I felt more annoyed than scared or excited. I noticed many in the illustrator community shared similar feelings. But, on the other hand, I understand it's a technological development and it would be imprudent to reject it outright. Personally, I wouldn't mind using it for references to diversify my work. However, my concern is that this AI technology is largely controlled by large corporations, and I don't see it presently benefiting artists.

I perceive it more as a tool that's taking jobs away. There have already been instances where AI-generated art has been used, like in the London Opera's poster for the Nutcracker or on book covers. I don't think this is cause for dramatic concern — there will always be a need for illustrators — but it could mean fewer opportunities. Certain fields like fantasy and game concept art may face a greater impact. As for using AI to speed up my drawing process, I relish drawing. The joy I derive from creating textures and making digital pencil strokes is a critical part of my process, and I wouldn't want to forfeit that.

Reflecting on it, I see the limitations — like not finding a good reference — as part of the fun. Back when I was a student in Vienna, I would ask my fellow artist flatmates to pose for me, leading to a series of pictures featuring them in odd poses. It was a source of amusement for us. These challenges are part of the overall creative process. AI's emphasis on efficiency leads me to question whether this is always beneficial. I've heard from illustrators who support AI in the illustration market, stating

that it enables them to create faster. However, I sometimes just want to enjoy the process. The editorial sphere already demands speed, and I worry that the widespread use of AI in illustration practice might add to the pressure to deliver even faster. So, that's an additional concern of mine.

VC: If AI continues to develop and starts creating works similar to those made by humans, how do you think it will affect the value and perception of human-made art?

U: I believe the perception of digitally made art is already being affected. For instance, I recall uploading a self-portrait that I drew myself on Instagram, and one individual commented, asking if I had created it with a program like Wally. They were surprised when I responded that I had drawn it myself. I think those who are unfamiliar with the illustration discipline might misinterpret works not made with AI as being AI-generated, especially with fantasy DeviantArt pieces, where it's really hard to tell right now.

I think this issue could be likened to the problems within photography where people perceive the images as real, but in reality, it's quite easy to fabricate them. We live in something of a post-truth era. As such, the boundaries between AI-created and human-created art might blur, which could discourage some from creating digital art.

However, on a more positive note, this could spur a renaissance for analog media. For instance, it's still a big task for a physical robot to make a very light pencil stroke. So, that's my perspective on how attitudes toward art might change.

DANIIL / PORTO
INDEPENDENT DESIGNER,
CREATIVE DIRECTOR, FOUNDER
OF THE 'FABRIKA' FONT FOUNDRY, 38

VC: Before we dive into the questions, could you please introduce yourself? Maybe you could share a bit about your background, your current role, and your experience in the design industry?

D: I make branding and interface design for more than 12 years for different institutions like Yandex and Art. Lebedev Studio. Now I work as an outsource consultant and creative leader for companies to help them with brand promotion and product creation.

VC: In your day-to-day work, are there any routine tasks that you find particularly frustrating? If so, could you share more about them?

D: I prefer to turn any routine task into something interesting, transform it into a game or a challenge. For example, I complete similar tasks in slightly different ways. To speed up work with regular tasks:

I create template-layouts for presentations, social media posts, or advertising formats. I write scripts that automate the process (for example, for processing a large number of photos). However, there are still processes that I would like to simplify.

Transferring a brand's color palette from the digital space to the analogue space is one of them. The challenge here is to maintain the quality of color reproduction on any media: paints, fabrics, printing by different methods. I would like to achieve the desired color reproduction in any color space with less effort than it currently takes.

Kerning when creating a new font is another. The letter pairs that need to be compensated for are known in advance and it would be great to perform quick auto-kerning and then only adjust the result.

Clipping photos with higher quality results and resolution than current neural networks can provide is yet another. For now, I have to do it by hand and it takes up extra time. Lastly, adapting the layout for a large number of advertising formats is also something I'd like to make simpler.

VC: You've mentioned that you've tried using neural networks for image clipping — could you please tell me if you have used any other AI tools in your work?

D: I use Chat GPT to get away from a blank page, but then I change the text all the same. I also experiment by combining my photos with 3D figures, for example, I made an album cover that way. There it was important not to use a photo of the face of a real person, but keep the vibe photos

VC: Have they influenced your process?

D: I like it when you get less predictable results. When you've tried a lot of things in design, you develop a certain style. On the one hand that's good, it allows you to work quickly and be recognizable. On the other hand, it creates boundaries that are not always easy to cross. And it's cool to add some spontaneity to the process, neuronics allows you to do that.

VC: Ha, it's interesting, yes, now AI is more empowering in that sense, rather than taking away creativity. Do you have any fears or doubts that your profession will change under the pressure of AI development? Do you see the development of neural networks as a clear step forward for design or as a threat?

D: That AI will have an impact is possible, but it doesn't scare me. My job is more about coming up with ideas than implementing them. As long as the niche of creativity is empty. AI can draw interesting things, combine existing styles, mix them up, but it is not yet able to invent and create.

An evolution or a threat to design? Not both. It's more like a new tool. Something neutral. It depends on the skill with which you use it.

For example, after the advent of digital photography, there weren't more good photographers. That is, the number of photographers increased, but the percentage of good photographers did not change. It's the same with neural networks. More people will be able to bring ideas to life, there will be more design. But will there be more good design? I don't think so.

VC: What is "good" design to you? I realize this is a pretty big question, but I'm wondering what you mean in this context.

D: That's a great question. You could go on and on about criteria, talk about functionality, empathy, what it means to the client or the user, do research. But I think the most important thing about design is whether it evokes emotion.

Design can be thoughtful, accessible, comfortable, concise, with well-chosen colors, trendy visual techniques. But if you don't like it and you don't get high from the way it looks, from the fabric the chair is upholstered with, or from the texture of the wood the cabinet is made of, from the interaction with the form, then this design will be bad for you.

VC: Thank you so much for sharing! How do you get news about AI development? Do you use any resources or are you part of a community created to help designers navigate the AI integration process?

D: I don't subscribe specifically to AI resources, but it's hard to miss application examples these days. Even my Instagram feed is full of great examples. I communicate with colleagues who are passionate about working with AI, I learn the tricks, the experiments they are doing. I follow news on the topic because I am interested in the practical application of this tool in my work.

ARINA / PORTO GRAPHIC DESIGNER, 20

VC: Have you used AI tools in your work? Can you please tell me how it has affected your work process?

A: I hardly ever use it in my work, although I'd like to use it more, especially for illustrations. Maybe I'm not that familiar with what's new out there, but Midjourney stuff could help me with a side project where I'm doing an online magazine, because the cover is the one thing that keeps the material going.

VC: Thank you! Do you think AI presents more opportunities or threats to the illustration and design industry, and why?

A: I think this is now more of a threat to illustration than to design. Design involves a huge amount of research, including on non-trivial problems, which AI can't do yet because it doesn't know how to parse new, unfamiliar cases of the day. It's harder with illustration, because the demand for raw, ordinary illustrations that don't involve metaphors and so on definitely falls away. But I think AI can be used as a smarter pinterest!!! including for inspiration or drawing some specific solutions.

VC: Are there tasks in your job that you would like to automate or solve with AI?

A: Well, first of all, nothing directly related to design, but all kinds of documentation, specifications and process optimization. And illustrations...

VC: If you could influence the development of AI tools for your field, what features or capabilities would you prioritize?

A: Freaking accounting and the fact that I have to keep track of my own tasks somehow. And some new tools for communicating with non-designers and clients, so we can understand each other better. But so far I have no idea how that could be!

VC: Do you have any fears or concerns about how AI might change your role as a designer?

A: I think AI is only good for us. I'm not afraid, I know that progress will only save us from boring tasks

that take a lot of effort and time, and the importance of the task is not that important.

VC: And I also wanted to ask, are you using any resources or are you part of a community that has been created to help designers navigate the AI integration process? If not, would you like to see something like that pop up? How do you keep up with AI news and would you like to discuss it with designers?

A: No! But I would be interested, mostly I learn everything from my friends. A community that focuses on designers integrating AI could really be a game-changer. It would be a great resource for sharing ideas, learning about the latest trends, and even collectively solving any issues that may arise. I've found that understanding different perspectives can really enhance my own understanding and application of AI in design. I try to keep up with AI news by following a few tech blogs and websites. But, to be honest, I sometimes find the amount of information overwhelming, and it can be hard to discern what's most relevant for my work. That's another area where a dedicated community could really help; we could all share and discuss the most pertinent news and developments in AI.

In addition, I'd also be interested in attending more webinars and conferences. Not only do they provide valuable insights, but they also offer an opportunity to network with other designers who are interested in the same field. So, yes, I would be very interested in a community like this popping up!

YANA / PORTO ILLUSTRATOR, 34

VC: Before we dive into the questions, could you please introduce yourself? Maybe you could share a bit about your background, your current role, and your experience in the design industry?

Y: My name is Yana. For the last 3 years I've been working for Vizor Games in the marketing department, preparing graphics for the appstore, google play market, etc.

VC: In your day-to-day work, are there any routine tasks that you find particularly frustrating? If so, could you share more about them?

Y: I have a lot of the same tasks for adapting existing graphics or graphics drawn by colleagues for "fakeshots". For example, "I need to make a fakeshot like the one in this creative, using all the same stuff, but in a different compositional way. If there are too many of these tasks, it can be frustrating.

VC: What is a fakeshot?

Y: Fakeshot is a kind of screenshot of the game. "Fake" because in some places the graphics may differ from those in the game. For example, there are likely to be elements that are not in the game itself: added emoji, freeze lines, ions with a match, hand cursor. Also, the composition itself for the screenshot is manually assembled from existing assets. I.e. in the game itself the characters are probably not sitting around the fire.

VC: Have you used any AI tools in your work? Can you please tell me how it affected your work process?

Y: I regularly use Midjourney + Stable Diffusion + Photoshop. This helps to speed up the process considerably. In my case I make icons for applications. Midjourney is great for quickly finding compositions/references/color schemes. Now I don't have to spend two hours on pinterest to build a good reference pack. Since I'm doing graphics with a certain style, I use Photoshop to polish them and then go to Stable Definition for the final polish. Midjourney is also a great tool for practice: for example, I often look for rendered images and try

to do the same. I used to use Pinterest for this, but it took a lot of time to find the right rendering style/object, etc.

VC: Interesting, thank you! Do you fear that your profession will change under the pressure of AI's development? That artificial intelligence could lead to fewer jobs in your profession?

Y: I think something like that can happen, but I take it easy and will solve problems as they come. I think it is useless to go against progress. And even without the existence of AI, there is no guarantee that I will be conditioned to work in this field for the rest of my life, what if people stop playing games altogether. Or something else happens.

I like progress, and there have always been and probably always will be fears and arguments in society. I was there when people who drew in Photoshop were hated and called "fake artists". Now something similar is happening with AI. By the way, the other day fsh announced that the ai plugin is working.

From the objective problems and gray areas I see copyright violations, but I think over time there will be some kind of regulation.

VC: Yes, I'd like to think so! Are you doing anything special to stay relevant in the job market? If so, would you mind telling me what?

Y: If we talk about the gamdev sphere, then at least I use ai in my work. I look at what kind of software besides fsh is described in job postings and study it, for example blender. Sometimes you need a basic ability to work with unity, but so far my heart is not for it. Not an artist either, it's important to learn artskill — here I still have a big slippage.

VC: What do you mean by artskill? Technique?

Y: Well, yes, depending on the tasks: rendering technique, object construction, anatomy, etc.

VC: Can you tell me a little bit more about how your colleagues and internal customers are responding to the use of AI?

Y: Some colleagues are also interested in learning AI, but as far as I know, they are not using it in their work yet. Some colleagues are outraged by the whole AI thing. Especially artists. The management is interested in ai, and they generally give me positive feedback because I have shown initiative and because the speed of some tasks has increased.

VC: Cool! You mentioned speed, can you please tell me what else is important to management about working as an illustrator in your field?

Y: From the outside it seems that not much has changed so far: you need to have a portfolio in the style of the project, you need to be able to draw, love games and be a cute guy. Occasionally I see "knowledge of Midjourney and Stable Diffusion will be a plus" jobs.

VC: And what skills and qualities do you think will be particularly valuable for illustrators in the future as AI begins to play a larger role in the profession?

Y: I can only fantasize: it seems to me that in the end it will be important to solve problems faster. The faster you do it, the more content you can end up with. And the way to this "faster" will be different for each specialist, but in one way or another through the approach to AI.

VC: Thanks! Is speed important to you, not as an illustrator, but as an artist? (I remember correctly that you don't just do illustration, right?)

Y: At the moment, I'm more in between an artist and a graphic designer. Because there are jobs where you have to draw everything from scratch. And there are all kinds of banners, screenshots, etc. where you have to work with text, indents, and stuff like that, but I don't like those tasks because I can't do them well. Speed is very important: We usually have clear deadlines for our part of the job, plus we have to keep up because then the schedule goes to other departments and it's a production chain. Like everywhere else I guess.

VC: Are you at all concerned about privacy in your work, given that the use of AI often involves data collection? For example, that — conventionally, your style — will be used for other people's work?

Y: About my work, no — I haven't done anything for myself in the last 3 years. I'm philosophical about it now.

Anyway, there have been trends and borrowing styles in art before — take these illustrations with distorted proportions of people for example.

VC: How do you get news about AI in illustration? How important is it for you to feel part of the community?

Y: Mostly from TG: I subscribe to several channels that repost news. I think if you're passionate about something, it's great to have people to discuss it with or share it with. It's important for me to keep my finger on the pulse, as changes and updates come out literally every day, and I have a long list of things I want to learn in terms of functionality that I never get around to.

VC: How do you feel about that — that there's no way to get to the list you have?

Y: I add a bunch of YouTube videos to "watch later" and the next day there is something new. Sometimes I blame myself for watching soap operas on my day off instead of studying. But I understand that it is impossible to have time for everything.

By the way, the interesting thing is that after I saw that AI creates beautiful pictures, I lost the poisonous spirit of comparing myself with other artists. Like, no matter how long I study, if not a human, a machine will do better than me.

VC: So let me get this straight: are you more or less comfortable with the idea that it's impossible to get it all done?

Y: It's hard to say. Sometimes anxiety strikes, but it seems that in those moments there is an external trigger: like job cuts or financial difficulties, etc. In those moments, my mechanism is triggered: "I have to do everything I've been saving for 10 years in one day."

VC: Why do you — as you said — do nothing for yourself for 3 years? What do you mean by "nothing"?

Y: By "nothing" I mean that I don't draw for myself like I used to. Before I got into the business, I used to draw for myself almost every day and I thought it was a long training to get into the business. And now I've built up a lot of limitations on how to draw right/wrong. In general a lot of psychological problems + laziness + lack of motivation/goal.

Right now I am participating in a project to make a visual novel based on the AI with some guys, but despite the improvements in the graphics on my part, I still do not feel that this is my work. Maybe because 80% of the result is somehow genetically based on someone else's style.

VLAD / PORTO
ARTIST & DESIGNER, 28

VC: Before we dive into the questions, could you please introduce yourself? Maybe you could share a bit about your background, your current role, and your experience in the design industry?

V: I'm an artist and designer, mostly working on identity, motion and creative coding.

VC: In your day-to-day work, are there any routine tasks that you find particularly frustrating? If so, could you share more about them?

V: I feel that pre-press preparation is the most technical and boring part of designer work. It is annoying when I finish my conception part, and layout making and then I have to spend these 5-10 minutes to prepare files for production. Sounds not so long, but most annoying.

VC: Have you had any experience with AI tools in your work or personal projects?

V: I successfully use Chat GPT and MidJourney to present creative ideas that would take a long time to photoshop or find.

Once I made a poster with fake quotes from fake people with generated portraits, whose descriptions were also written by neuronics. So I just arranged everything on the layout.

VC: Wow! Could you please tell us which features you use in Midjourney? And why do you work with this tool in particular?

V: It just so happens that I have to do photorealistic generation most of the time, and mijorni does it best. I really like how the combination `/imagine *link to photo1* *link to photo2* *prompt* *parameters*` works.

Thanks to this method is great to set the quality of the final result at the expense of the first spirit of photos, prompt specify what you want in the final and settings to speed up or diversify the generation.

Example: `https://s.mj.run/pVq8RI2oY2I white twins from Matrix (Neil and Adrian Rayment) movie with white dreadlocks and wide horizontal sunglasses:: dressed in 70-s Gucci::2 --ar 2:3 --chaos 50 --repeat 10 --style raw`

Sometimes one picture in the beginning, so that the neuronics can better understand what we are talking about in general.

VC: Do you mean through 'describe'?

V: Yes, just like that `/imagine prompt: https://s.mj.run/pVq8RI2oY2I the white twins from the movie "The Matrix" (Neil and Adrian Rement) with white dreadlocks and wide horizontal sunglasses:: wearing Gucci 70s::2 --ar 2:3 --chaos 50 --repeat 10 --style raw`

VC: Got it! Do you have a fear that your profession will change under the pressure of AI's development? Does the development of neural nets seem like a step forward in design development to you?

V: I'm sure that neural networks will lead to the development of design and that the threshold of entry into the profession will increase, because in the end only those who can feel the visual language and think creatively will be able to get along in the profession. Now there is a problem in all parts of the world that design is secondary, it is so because the profession often has those who know how to do something routine and when asked for creativity they just go and take already ready-made from pinterest etc. And it's a recruiting story, so the amount of shitty design is always higher than the amount of good design. And soon there will be neurons replacing 70% of the designers in the exec squad. Visionaries and managers may not have to worry for a while. Even to work with a neuron, you need more of an art brain, an artist's brain that can subtly sense the wrong or wrong result from a neuron. Such a person is able to reconfigure his or her request and find unexpected creative visual communication.

The change in the profession can already be felt. All changes have advantages, but everything has to be paid for. I try not to panic.

VC: Are you concerned about privacy in your work, given that the use of AI often involves data collection? For example, that — conventionally, your style — will be used for other people's work?

V: No, I've never been afraid that someone would exploit my style or my idea, especially after I published it. I also made some models based on my style for durer.ai.

Maybe they'll use it somehow, but I tend not to worry about that. Considering that all the ideas and material developments never belong to us personally. They are all achievements of the collective mind of civilization. Accepting this as a fact, there is no attachment or sense of ownership to the results of my work.

VC: Lastly, how do you find out about AI news and is it important for you to discuss it with other designers?

V: The news is usually the last thing I learn, or I wait a long time for the enthusiasts to get their hands on it. I'm not a techno-enthusiast, so I only come to AI when I feel it's exactly what I need and will speed up my workflow.

With designers, this topic always comes up in one way or another. Some panic, others brag about how cleverly they've enslaved this or that neuron. In any case, it is a common reaction to the appearance of something new.

To answer the question directly, I think it's important to talk about AI.

MARIKA / PORTO DESIGNER & MULTIMEDIA STUDENT (FEUP), 25

VC: Before we dive into the questions, could you please introduce yourself? Maybe you could share a bit about your background, your current role, and your experience in the design industry?

M: My name is Marika Pokhodnia and at the moment I'm a student of the Multimedia Master Program (FEUP), I have a background in graphic design for SMM as well as motion design and 3D modeling.

VC: Have you used AI tools in your work? Can you please tell me how it has affected your work process?

M: Yes! I used DALL-E 2 and Midjourney to create references for computer game assets when I needed to make 3D models (the appearance of characters, images, or the appearance of other objects). All in all it built a bit of a vector, but the pictures are far from perfect, I was more helped by the classic google/pinterest/other sites search for the references. I liked using it for making backgrounds, by the way, when I need to put something simple in the background of a design layout. Works well in that case. But overall a 6/10 rating.

I also tried newer tools for creating 3D models from text prompts or photos - still not very good, and you can only create a limited number of types of models (for example, the human character is still not created), and with simpler objects still a problem.

I regularly use Chat GPT when I'm not sure how to do a technical element in software. Gives detailed instructions, like a teacher. Really speeds up the work process and saves time on finding a solution. And can even help me think through the concepts of projects, including visual ones, when I am completely stumped. A complete cheat sheet. Very glad I live in a time when all this appeared. 10/10

I use Mixamo for animating 3D models for games and it's a godsend. You can upload a 3D model of your character and the program will automatically make a skeleton and any of thousands of animations. Everything is free to download and use in games. I bless the creator and give it a 12/10.

VC: Thank you! Do you think AI presents more opportunities or threats to the illustration and design industry, and why?

M: In my opinion — 100% possibilities.

Firstly in any case the CEO will not sit down and manually hammer the prompts to create their own posts in the social network of the product, will still hire a separate person and delegate! And in fact, not all people in general are aware of the emergence of AI programs, and some are very afraid of them and do not understand them.

Secondly: it's not as easy to use all this AI stuff as it seems. You need to try to make up a project to get the right visuals and animation, including the knowledge of specific professional terms, and understanding of colors and composition.

It's easy to give this accounting job to a robot and fire a person, because everything there is by the protocols. It's still not the same with creativity; the human hand is still important in getting the final result. Our work has no protocol and no standards, so for now AI cannot be taught to work autonomously in the creative industry.

Thirdly, for me AI programs work purely as assistants, as my little design team, which never gets tired and does not get indignant one will think of a missing idea, another will make a reference, another will generate a visual or animation. Strongly cures from the fear of a blank slate and procrastination in new complex projects!

I think the advertising industry, for example, is about to reach a new level in terms of visuals and creativity. True, this can all increase the competition in the market, as the average rate of work increases a lot. But if you learn everything in time and be "on trend," you'll be fine.

VC: Are there tasks in your job that you would like to automate or solve with AI?

M: In an ideal world — all the technical part. Let it remain pure creativity, coming up with ideas, and all the difficult moments of technical execution will be taken by the machines. And also the communication with customers, so that the machine will masterfully beat out of the client a clear terms of reference with all the necessary details and give me useful feedback.

And in the real world — at least the small technical routine. For example, if we're talking about SMM — automatic adaptation of layouts for different formats. If you need reshurch or reporting - also please let the machine do it. And presentations.

VC: If you could influence the development of AI tools for your field, what features or capabilities would you prioritize?

M: Right now the most relevant thing for me: creating 3D models from photo references. We often sketch future models before creating - and how cool would it be to load those sketches and get a model! Such programs are already in development, but so far they can do very little and badly.

VC: Do you have any fears or concerns about how AI might change your role as a designer?

M: Only that you have to work faster. Very like the situation that while few people know about all AI rounds — you can use them in secret, do everything faster and more relaxed, do not tell anyone, and send almost in the usual time (maybe a little earlier). Everyone thinks that you're a genius. But when everyone is already all over the place...It gets hard, deadlines start to narrow and excuses stop working.

VC: And I also wanted to ask, are you using any resources or are you part of a community that has been created to help designers navigate the AI integration process? If not, would you like to see something like that pop up? How do you keep up with AI news and would you like to discuss it with designers?

M: I don't participate in any groups, but I often watch tic-tac-toe where they talk about AI news in the design world and how to use this or that program. But to be honest, I think that this kind of community will not work, because after all, this is a competitive skill, and all a little secrets to be cooler in what they do). And such knowledge usually sells on courses, which I think will happen now.

I do not think that I would like to belong to such a community. Time-consuming to read a chat room when you can ask a question to another AI and get an answer right away.

ANTHONY / PORTO
VISUAL & GRAPHIC DESIGNER, 26

VC: Before we dive into the questions, could you please introduce yourself? Maybe you could share a bit about your background, your current role, and your experience in the design industry?

A: My name is Anthony and I am a Visual & Graphic designer with 4 years of professional experience between full time job and freelancing. I have worked in multiple positions varying in level of involvement in the creative process and execution. I have graduated with a bachelor's degree and went to Art school to develop and refine my skills.

I have been a multidisciplinary designer, working on projects ranging from Advertising, print, packaging, digital, user experience, web design, to illustration, and animation. I love all creative aspects of my job, however, illustration and storytelling have a special place in my career.

I have participated in one semester in design MA and at the moment I am not working as a designer, taking a creative break from the constantly stressful overwhelming industry haha.

VC: Thank you! In your day-to-day work, are there any routine tasks that you find particularly frustrating? If so, could you share more about them?

A: Yes there are multiple small tasks that consume a designer's time, and for me they are linked to the administrative process, such as emails, calls, invoices, research and follow-up. Especially when freelancing, you might need to do this all by yourself when in an agency, someone else is handling this communication. Which consumes the designer's time and takes away from the creative process.

VC: Absolutely, Anthony. The aspects you've mentioned about administration, like emails and invoices, are indeed something that can eat up a lot of time. They're necessary but they can detract from the creative process. Have you ever used AI tools in your work? How have these tools influenced your creative process?

A: Unfortunately I didn't get a chance yet to use them and experience AI tools hands on, but I am quite

excited to do so. A side note, I have been closely following the AI topic and involvement in the Art industry, through endless blogs and community sites where they post updates, AI improvements, capabilities, and experimentations.

VC: I find it fascinating that even without having used AI tools directly in your work, you've kept yourself informed about their evolution. How do you envision the future of the design and illustration industry with the advancement of AI technologies?

A: It is a very tricky question as it all depends on how the industry regulates and manages the existence of AI within the creative process. I personally see that it will take a minimal role at the very beginning of the process where brainstorming and generating ideas is very essential. As it can help mix and blend new visions that artists and designers can base new concepts off of.

VC: Are there any fears or concerns you have about how AI might change your role as a designer?

M: My main concern is related to keeping the design profession a legitimate industry, where creatives and professional people with actual vision and experience aren't going to be replaced by a software that all it was programmed for is to blend pictures of other designers' works from over the internet.

AI is a trained tool that is basing its work over thousands if not millions of libraries posted by people who shared their work online for the sole purpose of exposure and self advertising.

There is an ethical dilemma behind this creation that needs to be addressed soon before amateur and entry designers lose their spot. It also poses design academies at risk of going out of business because people would lose interest in learning important concepts, when there is a software that can generate the whole work from them with the click of a button. Curriculum must change and new job rules must be in place to regulate the progression and development of the design industry fairly.

It is an industry without much protection for the workers like the syndicate of lawyers, architects and doctors do, which is a shame since artists have rights as well and must be protected.

VC: In your opinion, what are some potential drawbacks or risks of using AI in the design process?

A: If think the real threat AI can impose is more on society and social media, rather than the design process. Because it is a powerful generative visual tool, once it falls in the wrong hand, advertising will be faked to extents where people won't be able to distinguish what is real what is fake. Posing real threat on society and brainwashing overall while spreading misinformation and propaganda.

Fake images are already being sent online, faking historical events, so imagine how news outlets can fake and manipulate people further now due to the realistic capabilities of technology.

VC: How do you feel about the idea of AI creating artwork independently? Do you have any concerns about authorship or the devaluation of human-created art?

A: Human-created art is the accumulation of failures, successes, sweats and tears over a long period of time where the human creating it spent night and days refining and improving their skills. It is not an easy journey, from sketch to final product. And by using AI, all those skills disappear and become without any value as they are effortless, no longer appreciated for their hard work.

This will only add to our fast paced economy and capitalist system that devalues multiple elements in favor of profit. Same as it devalues human labor in favor of profit. AI art should not be owned as it isn't created by a single person, but the accumulation of multiple artists' input with or without their consent, which is the issue that must be solved.

It definitely imposes risk of copyright infringement and ownership.

POLINA / GEORGIA
LEAD DESIGNER, 23

VC: Before we dive into the questions, could you please introduce yourself? Maybe you could share a bit about your background, your current role, and your experience in the design industry?

P: I'm a product designer by profession, mainly specializing in design systems and in-house digital products. Recently, I've been working in Arrival, a project for a company that manufactures electric cars. My role there revolved around developing design systems and coordinating both public and in-house engineering products. I infrequently incorporate AI into my work, which at present is based elsewhere. My responsibilities have broadened to include the generation of various character variants and 3D character enhancements. I utilize MidJourney extensively for this, thanks to my premium subscription that allows for extensive customization.

Additionally, beyond my regular work, I create videos and images for personal use, often employing Kaiber AI. This is primarily a video generation tool, but it also provides features for upscaling and image-to-image transformation. I have a premium subscription here too, enabling me to generate long 4K videos.

Also, I use Runway ML for labeling and continuing images, like when I want to expand beyond the borders of an existing picture. I maintain a subscription for this service as well, albeit not a premium one.

Recently, I've been experimenting with a tool named Topaz Gigapixel AI. It's a standalone program specifically for upscaling images and videos. Currently, I'm on a free trial, testing its features.

I also use GPT Chat for adjusting cover letters and summaries. While it isn't directly involved in my work process, I sometimes resort to it for interesting queries when I'm feeling too lazy to look it up myself. Although it hasn't significantly influenced my work, it's become a creative addition to my toolbox. What I appreciate the most

is how AI empowers me to accomplish tasks that I conventionally can't do by hand or on a computer. This aspect of working with neural networks brings me immense satisfaction.

VC: Thanks for the detailed story! There are some programs I didn't know about, so I'm going to try them out as well. Could you please share if you have any fear or doubt that your profession will change under the onslaught of AI development? Do you think that the development of neural networks is a definite step forward in the development of design?

P: Regarding fears or doubts about my profession changing due to the influence of artificial intelligence, I see it from a different perspective. As a product designer, I believe AI can actually aid us, perhaps by generating initial product iterations, or by providing creative suggestions. Take Chat GPT, for example, where we can ask for a custom script to be generated. However, I don't currently see AI as a complete substitute for a human designer, because the human factor is always integral.

Unless one knows how to utilize AI tools effectively, they can end up being useless. AI, despite its sophisticated capabilities, lacks the human touch. It can't conceive emotional aspects or replicate the nuanced human perception and thought processes. Thus, it isn't a complete replacement.

The evolution of neural networks is indeed incredibly exciting. It could enable designers to focus more on conceptualizing and dealing with more human-centric issues, improving elements like customer interaction. As a creative tool, AI is exceptional, especially for people who might lack traditional artistic skills. They can generate ideas, creating a foundation for future work.

I don't agree with the notion that AI is taking away jobs from artists. Art involves learning to replicate, and design also incorporates this concept. If you can master the technology and creative techniques, it's analogous to wielding a paintbrush, just in a more advanced format. AI is a new tool, a new medium, that artists and designers can learn to manipulate and control.

VC: I generally align with that perspective as well. Likely, the only individuals who might encounter difficulties are those who focus solely on techniques rather than ideation. As for keeping up with new tools and AI news, how do you stay informed? Is there an open forum for discussion about this at your workplace, and how significant is that to you?

P: Mostly, I stay updated through Instagram. It seems to know what I'm interested in due to my frequent searches and readings on the topic. Plus, I get targeted ads which often introduce me to something new. I do also use Google and keep an eye on the news. As for my workplace, we don't necessarily have an open discussion about it, but I do engage in conversations with my friends who also use AI tools. We share discoveries with each other and experiment with new finds.

VC: Got it, thanks! If you could influence the development of AI tools in product or design in general, what features or capabilities would you prioritize? For example, would you want to automate some specific routine tasks even more?

P: If I were to automate aspects of my work, I might incorporate AI in generating design iterations during product development, perhaps creating preliminary layout designs. Or, let's say after creating a couple of options for the client, AI could assist in generating additional variants so the client has a wider range to choose from.

However, I don't foresee pushing this application of AI any further. I've dabbled in projects at work, for example, developing a concept of an operating system using neural networks, designed to support psychological health. However, I believe it's not entirely realistic because psychology fundamentally involves human-to-human interaction.

If a neural network were to monitor a person's state and provide recommendations or help plan their day, it seems like an overreach. Handing over such personal control to a computer feels wrong and potentially unethical to me.