Values, Emotions and Beliefs within Generative AI Arts Practice

Patterns in Practice: values, beliefs and emotions within arts practitioners' engagements with machine learning and data mining

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Patterns in Practice (PIP) is a qualitative study investigating how practitioners' beliefs, values and emotions shape their interaction and engagement with the use of machine learning (ML) and data mining across three contrasting domains - science, education and the arts. This paper focuses on sharing early insights from exploring culturally situated beliefs, values and emotions of ML and data mining practices within the UK arts sector through a series of qualitative interviews with artists, curators and art commissioners invested in musical, story-based and visual artworks, or combinations thereof, that includes Generative AI systems. Generative AI art has a history stretching back to the 1960s and 1970s when artist pioneers experimented with computer-generated visual art. A computing-driven resurgence emerged in the last two decades with the explosion of available data (accessible often via social media and the internet, in the form of text, images, video and sound), large scale technology investment and increasing computing power, resulting in the emergence of new tools, including AI art generators. The literature indicates that artists use AI as a tool to create artworks and, or, as a topic to critique AI as a concept within artworks. We discuss three emergent narrative themes arising from our empirical analysis of the arts sector, relating to values, beliefs and emotions. This includes a desire to navigate the ethical tensions and limitations of AI tools, such as adopting a 'small data' mindset (over large scale use of data), a desire to improve human-machine collaborations and to minimise the exploitation of minoritised communities and the environment.

CCS CONCEPTS • Generative Art • Artificial Intelligence • Values

Additional Keywords and Phrases: Machine Learning, Beliefs, Emotions, Cultures of practice

1 INTRODUCTION

The pervasiveness of ML and data mining within industry and society [DeepAI.org, n.d.] and specifically within the arts sector [Manovich, 2019; Ploin et al, 2022], has been met with a mixture of scepticism and excitement within the creative industries. Whilst artists have adopted AI techniques as a 'tool' to generate artworks, public concern and criticism has been raised within the arts sector in relation to the quality of the artworks produced, privacy and copyright related authorship issues [Elgammal, 2018a], and discrimination embedded within the design and application of AI tools [Benjamin, 2019], to which the HCI and AI community recently responded with principles to design against harms [Weisz et al, 2023]. An empirical understanding of the situated practices of artists, curators and arts commissioners offers unique insights into how engagement and interaction with ML tools, spans the creation, curation and investment in generative AI artworks to deepen the HCI and AI community's understanding of the cultural dynamics shaping AI design, techniques and practices, and wider societal implications. We begin by offering a brief review of the literature and the key debates shaping the use of generative AI artworks, before sharing an overview of our theoretical framework to studying values, beliefs and emotions within the wider study, Patterns in Practice (PIP). We then share PIP methodology and three emerging thematic narratives identified through our initial analysis of the arts case study. We conclude by outlining our next steps in the wider PIP study.

1.1 Background

Generative AI art dates back to the 1960s and 1970s, with the pioneering automated artworks of Vera Molnár, a pioneer of computer art and the computer simulation experiments exploring the cognitive processes underlying drawing and painting in a computer program called AARON, written by painter, Harold Cohen, following an invitation to Stanford's AI lab. Cohen challenged the simplistic notion that a machine creating art was merely a tool, proposing instead that human art-making behaviour was aware of the artwork in progress, and that programs modelling that

behaviour would need to demonstrate similar awareness [Cohen, 1973]. More recently, over the last twenty years, AI-assisted creativity is fuelled by the explosive growth of data generated in everyday life, new data mining techniques and the development of computationally intensive methods such as ML. AI-driven art has been produced experimenting with algorithms in different ways, with AI systems initially imitating art created by human artists. This is called Neural Style Transfer [Aue, 2019] and consists of a family of algorithms that can be used to replicate, imitate, and combine styles of artwork. Here, neural networks identify and combine stylistic features of media content e.g. an image, and can be applied to paintings, photographs, videos and musical pieces. No artistic or coding experience is required. Developed originally to function as a face classifier, this algorithm run in reverse has been used to create dream-like psychedelic visuals. A well-known example application of Neural Style Transfer is Google's DeepDream, which uses neural networks to find patterns in images to create dream-like and deliberately over-processed images. Critics have argued that imitation "is not in the true spirit of art and [these AI created outputs] simply reflect back to us what we've already said" [Aue, 2019]. A generative class of tools used within art practice to produce new content are Generative Adversarial Networks (GAN), introduced by Ian Goodfellow in 2014 [Elgammal, 2018b]. In GAN algorithms, one side generates random images, while the other learns through the input how to evaluate these images and identifies which best aligns with the input. In the process of producing GAN art, the artist controls the training data, and can therefore to some extent control the outcome, nevertheless, the algorithm can produce results that might be visually surprising for both artist and audiences [Skrodzki, 2019]. A recent AI arts study outlines that new ML activities offer 'continuity with previous creative processes and rupture from past practices' [Ploin, 2022.]

2 THEORETICAL FRAMEWORK

The theoretical lens applied to PIP reflects a social constructionist, as opposed to a cognitive approach, to understanding values, beliefs and emotions. This recognises that values, beliefs and emotions are intertwined in the constitution of social phenomena and that this is shaped by socio-political forces [Bates, 2017] . We define values, beliefs and emotions as follows:

Beliefs: people hold ideas that they assert to be true. These are widely accepted as loose ideologies [James, 2019; Harrison & Boyd, 2018] or forms of fragmented common sense as to how the world functions [Hall, 1987].

Values: people hold beliefs, care about and have a sense of what is important and not important [Open University, n.d.]. Following [Bates, 2017], these values influence and justify people's data practices. Organisation structures and cultural logics also play a role in developing and enacting values [Ustek-Spilda et al 2019].

Emotions: the cultural sociology of emotions, asserts that emotions are more than biological responses, indeed, social feelings and conditioned by culture [Bericat, 2016]. Data can "stir up emotions" [Kennedy & Hill, 2018], and practitioners have feelings around the adoption of ML systems in their workplaces [Eubanks, 2018].

3 METHODOLOGY

Our methodology is informed by the literature review, which identified that artists were using AI tools to create artworks and / or to critique aspects of AI as a topic, and its implications for society. We also identified a key role for different arts commissioners (public funders, research-led and technology companies) in shaping AI Art. We set out to undertake interviews with 15 arts practitioners - artists, curators and commissioners of artworks spanning a range of tools and art forms, including music, visual arts, storytelling, performance and installation. We searched online and within the literature for existing UK based AI arts programmes to identify a diverse range of artists, curators and commissioners as well as accessing known networks and expanding connections through our advisory board, based on our criteria. We had a remit to be inclusive, balancing for gender, ethnicity, disability and intersections thereof, as well as different artforms. In the near future we intend to conduct two focus groups with interview participants to discuss the initial findings in order to follow up on the most important aspects that resonate with them and secondly to explore the cultural dynamics between interviewees and their differently situated practices.
The interview questions explored topics including:

• Participants' experience of working in the arts sector, including their engagement with ML and data mining in their work
• Participants' views and feelings about recent developments and priorities around ML adoption in the arts sector
• Aspects of participants' work that they feel positively and negatively about, and what they feel to be important about their work
• Participants' engagement with colleagues about the adoption of ML and data mining in the sector
• Participants' expectations about future uses of ML and data mining in the arts sector

Data were analysed using a combination of thematic analysis [Braun & Clarke, 2006], and close critical reading around key findings. Ethical approval for the study was gained from the University of Sheffield.

4 INITIAL FINDINGS

Three emergent narratives and themes arose from initial interview analysis of the culturally situated values, beliefs and emotions of arts sector practitioners. Practitioners highlighted that their feelings are situated within a broader set of values, emotions, beliefs surrounding the current hype around AI techniques, art practice, and the experience of engaging in different types of practice.

4.1 Generative AI tools

The artists in this study reported using a range of generative AI tools. We list these below:-

- TidalCycles: A live coding environment for creating music using patterns and sequences.
- Night Cafe Studio: A tool for creating digital paintings using AI. It uses StyleGAN to generate unique images based on user input, and users can then use various tools to edit and refine the image.
- StyleGAN: A deep learning technique that generates images with a specific style.
- DeepDream: A tool that uses a deep neural network to find and enhance patterns in images.

4.2 Values: Ethical considerations.

Arts practitioners using generative AI tools are aware of the potential implications of using them. As a consequence, they face a range of ethical considerations and must carefully navigate these issues in order to make informed decisions about how to incorporate these tools into their work. Without established ethical guidelines for this type of artistic practice, the personal values of each artist play a crucial role in shaping their approach.

4.3 Beliefs: Adopting a small data mindset.

Some artists would like to work with small data, rather than adopting large scale use of datasets, for ethical or environmental reasons. These ethical concerns include: data privacy, carbon dioxide emissions arising from large-scale data collection and ML training models, and the exploitation of vulnerable communities through data extraction.

4.4 Emotions: Machine-human collaboration and emotional responses to the limitations of AI tools.

Generative AI tools have the potential to enhance human creativity, but the process of collaboration between humans and AI is complex. Some artists lack the technical skills and resources, and recognise that the tools have limitations, which can elicit emotional responses from artists, such as frustration and a desire to improve machine-human collaboration.

5 CONCLUSIONS

Our early findings reveal a richer and more complex story than the debates surfaced in the literature about how arts practitioners feel about the adoption of ML, including generative AI tools, into arts practice. This study surfaces several tensions around ethical issues, including the social and environmental impact of big data mining, and the limitations of AI tools in this regard. This suggests that further work to understand the cultural dynamics mediating the relationship between the arts, ML technologies and practitioners will be valuable. We plan to test out our initial

findings and explore the cultural dynamics between differently situated arts practitioners through focus groups. A series of public dialogues spanning broader sets of practitioners to share and exchange knowledge, and an arts residency to engage the public with our findings, offer the potential to strengthen ethical technology development and practices of worldmaking.

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