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# What Becomes of “Work” in AI “Artwork”?

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## ABSTRACT

Of the many sectors where AI has been perceived and communicated as an autonomous entity capable of replacing human labour, the creative and arts sectors have generated a lot of discussion because creativity has always been seen as an exclusively human capability. In this proposal, we expose the shift in narrative from artworks created with AI to artworks created by AI. Then, through interviews with internationally renowned artists involving AI in their artwork, we challenge this narrative and highlight the role of human labour in this movement, showing in particular that artists develop skills aimed at crafting AI. We propose to discuss this research in the workshop and to extend to the question of reasserting human labour in creative automation.

## CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI.**

## KEYWORDS

AI-Art, Creative AI, Creative and Cultural Sectors, Art & Technology, Cultural Studies

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## 1 INTRODUCTION

AI can be understood as a set of techniques providing the machine with the ability to perform high-level cognitive or sensorimotor tasks, such as learning and making decision [10]. From such perspective, AI is often seen, and often communicated, as a tool to automate tasks typically performed by humans. This has been illustrated in many examples, such as autonomous vehicles or medical diagnosis, where AI-based systems have achieved human-level accuracy. Such applications have a limited view on the very purpose of human work by reducing it into a set of performance metrics. This discourse has spread to many sectors, and in particular to the creative and artistic sector, which was thought to be a solely human capability.

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In articles featuring the new frontiers of AI in creativity, AI is depicted as contributing to the “escalation of creativity” where “anyone can write at the level of Shakespeare, compose music with Bach, [and] paint in the style of Van Gogh” [9]. World-renowned institutions such as the World Economic Forum [5] has also published report on the impact of AI in the Creative sector, detailing how AI will slowly manage to perform increasingly complex creative tasks that were reserved for humans, until now. However, this is misleading because it does not acknowledge the human labour involved in making automated technologies work.

The driving assumption in these projects is that creative knowledge can be encapsulated by algorithms and that by having access to the right algorithms, artistic expertise can and will naturally emerge. This sentiment can be seen in projects like SonyCSL’s FlowComposer, a system that automatically generates melodies in order to “remove [the] barriers” presented by the “time-consuming process” of composing music, leading eventually to the “emergence of novel ideas” [6]. Therefore, the narratives promulgated by these AI-driven creative projects often highlight the technological marvel of the artistic medium (e.g. machine learning algorithms) and obscures the labour that goes into making, hacking, and adapting the algorithms in order to make them work for bespoke artistic contexts. In reality, AI art is often the result of a complex interplay of construction and curation, not easily separable into discrete phases or components.

In this paper, we propose to critically discuss the shift in narratives of art-making in the creative and artistic sectors as artists adopt AI into their processes. To do so we report on findings from a recent research project [2] that aims at better understanding the practice of AI by artists, within the context of the so-called AI-Art movement. We interviewed five artists on the way they conceive their work and their role in the creation of their artwork, as well as its reception within the socio-cultural fabric of their artistic movement. Here we propose to report selected findings that contribute to the workshop topic.

## 2 “AN AI” HAS CREATED AN ARTWORK!

In recent years, one could regularly see headlines in tech or general public media that “An AI” has written a film script, a song, or has created a painting, etc. Among the many techniques responsible of this shift, generative models are maybe the most representative examples of AI research borrowed and appropriated by artists. A typical example is Deepdream, or Inceptionism, issued by Google [8], that showed visually what the network has learned. This has triggered great interests in data-driven generative tools for artists as explained by Akten [1].

While initially conceived as a technical tool, generative models have quickly spread beyond academic and technological spheres

into the art world and the general public. International research centres have teamed up to show that generative models can create new paintings from famous painters like Rembrandt<sup>1</sup>. Business-oriented teams have made headlines by selling a painting generated by such models<sup>2</sup>. The latter example shows the essential role communication played in the sale: the team has explicitly put forward the fact that the painting was made by AI, using the equation of the underlying model as the artist's signature on the painting.

This last example shows how the narrative changed from artworks created *with* AI towards artworks created *by* AI [4]. In addition, some media and practitioners started to refer to the technology as “an AI” instead of “AI”. This subtle change in the way a technological backbone is referred to creates the illusion of a singular entity, detached from the socioeconomic conditions that give birth to it. One consequence is that the sociotechnical underpinnings of the system are obscured, while its flashy capabilities are highlighted. While AI-Art follows the lineage of a great body of works aiming at imbuing art-making with technology and automation, the use of AI, such as GANs, in the production of artworks raise critical questions such as: Who is the artist? How does AI reconfigure the artistic process? How do artists engage with political questions around AI?

We explored these issues in a research project [2], through interviews with visual artists involving AI in their work. The goal was to shed light on the realities of AI use in the creative and artistic field, as well as the socio-cultural and political tensions involved. We report in the next section, some details about the study and selected findings that contribute to the workshop topic.

### 3 ARTISTS ARE CRAFTING AI

In order to investigate how AI as a technological innovation nurtures an artistic movement, we built a corpus of interviews with internationally known artists who are working with AI in their artwork. We asked them about their relationship with AI, how they use it, how they define it, and how they relate to it in their creative practice.

#### 3.1 Interviews

As part of an ongoing research project [2], we interviewed five artists<sup>3</sup>. These artists have been among the pioneers in using state-of-the-art AI in their artistic works. They have used AI in their artistic work as a medium to primarily generate visual content. They are all developing their own tools based on the latest AI research. Therefore, they are not using off-the-shelf AI services, such as computer vision or natural language APIs (Application Programming Interfaces) that include already trained models.

We conducted semi-structured interviews where we aimed at probing concrete stories of how the artists think with and use AI in their creative process to generate ideas and artefacts. For each question, we asked the artists to illustrate their response with concrete examples of their work. We contacted the artists via the Twitter platform or via emails. The interviews were conducted online through

the video-conference tool Zoom or Skype. Each interview lasted approximately 60 minutes and was conducted in English. We recorded the audio of each interview and then transcribed them manually. From the interview transcription, we conducted a thematic analysis method to extract themes related to the use of AI in artistic creation. In this paper, we report a selection of findings that relates to the idea of the reassertion of human artistic skills into autonomous AI-powered generation tools.

#### 3.2 Selected Findings

**3.2.1 Crafting AI.** Although AI is an academic field, there are no scientific rules determining how AI should be configured in order to succeed on a specific task. Crafting best characterises the way artists work with AI algorithm as a tool and a material. As a matter of fact, crafting appears at different levels of the machine learning process such as the way to handle model training or building a training dataset.

Working with AI is approached by artists through a concrete experience of the algorithm's behaviors rather than a theoretical understanding of its capabilities. Starting from the experience of the technology rather than its analytical understanding is essential in the artists' practice. This learning-by-doing approach leads them to develop specific skills related to the types of algorithms used. These skills do not refer to the ability to build better models in the sense of AI research (better accuracy, better data efficiency). Instead, they refer to the ability to better predict the behavior of the system, so that it is more in line with the artist's expectations.

Crafting also appears on the way data-sets are built in order to train a deep learning models. One of the artist makes an explicit link between the act of crafting and the creation of the training set as opposed to the creation of the algorithm, in particular highlighting the tension between art and craft as well as between dataset creation and modelling. Craft, unlike art-making, is often repetitive anonymous and less well regarded. Creating datasets replicates these patterns, with dataset creators often not acknowledged or invisibilized.

**3.2.2 Artistic Movement.** AI-Art has recently emerged as an ambiguous field within the contemporary art scene, represented in the art fairs and museums, as well as on the art market. Although they are an increasing number of artists who define themselves as AI-artists, AI as a technique is borrowed by a wider group of contemporary artists who do not necessarily specialize in it. Olafur Eliasson or Ai Weiwei used surveillance cameras and interactive technology in their work. Hito Steyerl's artwork questioned AI applications and has been presented at the Venice Biennale of contemporary art in 2019. However, AI artists currently evolve in an alternative art network, and an alternative art market.

The contemporary art world has focused its attention on works that hide the technical (and manual) labour involved in using AI to create these works. AI artists, who rely on a set of skills acquired through years of practicing this technology, must define their own space in the socio-cultural fabrics of contemporary art and their proposed space in the art markets, as can be seen through the exponential use of NFTs as a means of selling these artworks.

<sup>1</sup>The Next Rembrandt <https://www.nextrembrandt.com/>

<sup>2</sup><https://www.christies.com/features/A-collaboration-between-two-artists-one-human-one-a-machine-9332-1.aspx>

<sup>3</sup>Listed by alphabetical order: Memo Akten, Jake Elwes, Mario Klingemann, Kyle McDonald, and Anna Ridler

## 4 WORKSHOP CONTRIBUTIONS

Through this proposal, we would like to contribute to the workshop in the following ways. First, we would like to discuss with the community the issue of reasserting human work in automation used in the creative and cultural sectors. We propose to use the previously reported findings as the basis of the discussion. And we would like to further discuss these aspects in light of the recent reports edited by the first author on the role of AI in the Creative and Cultural sectors in Europe [3].

Second, we would like to discuss these issues in light of Ivan Illich’s notion of “shadow work” [7] to conceptualize these often overlooked moments in the creative process that are essential to the making of an AI-based art piece, connecting it to the larger literature on the human labour behind AI. Instead of focusing on questions of ownership often seen in discourses around AI-driven art, we would like to focus on the human work that goes into making art with algorithms: the creation, manipulation, and curation of machine outputs.

Finally, we would like to contribute to the framing of the design and technological challenges stemming from re-considering human agency and skills at the core of AI-based systems. The creative and cultural sectors certainly constitute a rich research ground in that matter. However, we would like to include our experience and research results in a broader discussion of automation applied to other sectors, such as those at the heart of the workshop: agriculture, transportation and caregiving.

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