

Hertziana Studies
in Art History



BIBLIOTHECA HERTZIANA
MAX PLANCK INSTITUTE
FOR ART HISTORY

From Hype to Reality

Artificial Intelligence in the Study of Art and Culture

Edited by Eva Cetinić & Darío Negueruela del Castillo



BIBLIOTHECA HERTZIANA
MAX PLANCK INSTITUTE
FOR ART HISTORY



Hertziana Studies in Art History

Editors

Tanja Michalsky & Tristan Weddigen

Managing Editor

Elisa Bastianello

All articles of the present volume have undergone an anonymous scholarly peer-review by international experts to whom we are grateful for their generous support.

Graphic Project

Sergio Polano (2019)

Michele Elia (2023)

Page Layout

Michela Maguolo

ISBN | 978-3-949381-02-7

DOI | <https://doi.org/10.48431/hsah.03>

Published online on 31 March 2024

© 2024 Bibliotheca Hertziana

Cover image: Eva Cetinić's prompt for DALL·E: "The persistence of memory in artificial intelligence, abstract, double exposure, award winning photography, colorful, macro-shot."



From Hype to Reality

Artificial Intelligence in the Study of Art and Culture

edited by

Eva Cetinić & Darío Negueruela del Castillo

Contents

7

Eva Cetinić

Introduction

13

Amanda Wasielewski

The Reification of Style in AI Image Generation

23

Nuria Rodríguez-Ortega

Exploring the Concept of Transduction to Interpret AI-Generated Images

31

Bokar Lamine N'Diaye

Stochastic Parrots in the Ancient City?

39

Dejan Grba

Incidental Reverberations: Poetic Similarities in AI Art

47

Arif Kornweitz

Inside the High-Dimensional White Cube

57

Dominik Vrabič Dežman

Interrogating the Deep Blue Sublime: Images of Artificial Intelligence in Public Media

69

Pepe Ballesteros Zapata

Evolving Methodologies: Computation in Art History

75

Valentine Bernasconi

Automated Body Pose Estimation on Painting: A Crisis of Uncertainty

83

Piera Riccio & Nuria Oliver

A Techno-Feminist Perspective on the Algorithmic Censorship of Artistic Nudity

91

Anne-Laure Oberson

Making Sense of AI Generated Images in the Process of Imagination

Abstract

Eva Cetinić

Introduction

Keywords | AI, Digital humanities, AI Arts,
Computer sciences



As technologies related to AI (artificial intelligence) are progressing intensively, the hype surrounding the acronym “AI” have become an evolving but persistent phenomenon. However, the reality of working with AI technologies often remains distant from its idealized representation and involves many constraints and difficulties, which become particularly obvious in interdisciplinary research contexts. In recent years, the critical discourse on AI has also gained momentum, partly due to the increasing interest of scholars in the arts and humanities in exploring AI technologies and the implications of their widespread integration. This collection comprises short articles from scholars who undertook the challenging task of examining various aspects of AI in the context of art and culture. It combines approaches that explore how AI technologies can be applied to study art and culture, as well as how arts and humanities-based theories and methodologies contribute to contextualizing and critically assessing AI technologies. This volume consolidates contributions from scholars from diverse disciplines, including art history, media studies, philosophy, anthropology, digital humanities, and computer science. It offers a unique selection of insightful articles that provide valuable cross-disciplinary perspectives, fostering a deeper understanding of the dynamic intersection between AI, art, and culture.

Cite as: Eva Cetinić, “Introduction,” in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić, Darío Negueruela del Castillo, 2024, *Hertziana Studies in Art History*, vol. 03, 2024, pp. 7–10. Doi: <https://doi.org/10.48431/hsah.0301>.

From Hype to Reality

The hype associated with the acronym “AI” has been a persistent phenomenon emerging in various contexts over the last several years. As the development of technologies related to AI has been progressively accelerating in the last decade, we have witnessed a growing interest in these technologies and their integration in our scientific, economic, social, and cultural frameworks. Technological breakthroughs, usually followed by intensive media coverage and often overhyped representations of AI technologies, have driven both the genuine fascination and the sensationalism surrounding AI. Meanwhile, the technologies themselves have reached a quite sensational level of innovation, particularly in the last two years with the most recent advances in generative and multimodal AI techniques. What was considered to be just a hype only a few years ago, recently became a technological reality. In parallel with the advancements of technologies, the hyped narrative surrounding AI has also kept evolving. For example, in 2018, with the rise of popularity of image-based generative AI models (e.g. the famous GAN model),¹ machines were granted “the gift of imagination.”² Nowadays, as generative AI models are progressing rapidly in producing semantically and visually appealing synthetic content, the impact of these models on human creativity and imagination have started to become a more seriously discussed topic. Meanwhile, the media attention shifted to artificial general intelligence and to even more radical speculations of attributing advanced human traits to

AI, like consciousness for example.³ And while consciousness has become the new imagination in the hyped narrative of AI media coverage, the reality of working with AI technologies is still far from its idealized portrayal and involves many limitations and challenges. In parallel with the techno-enthusiastic hype, the critical discourse on AI has also progressed and intensified in the last few years. One of the reasons for this trend is the growing interest of scholars from the arts and humanities in exploring the phenomenon of AI and the implications of its widespread adoption.

The tendency to integrate computational methods and digital tools in arts and humanities studies has been ongoing for more than a decade and has resulted in numerous research and educational initiatives united under the umbrella term “digital humanities.” As a result, a dichotomy between the “digital” and “traditional” modes of scholarship was established and often prevailed as the main starting point in discussing the role and impact of technology in the study of art and culture. However, the recent advancements in AI and the enormous public attention that was triggered by technologies such as large language models (e.g. ChatGPT)⁴ or text-to-image models (e.g. DALL-E,⁵ Midjourney,⁶ and Stable Diffusion⁷) contributed to a rise of interest in AI among scholars belonging to both the “digital” and “traditional” factions. The perspective on the use of AI in the context of arts and humanities therefore has started to transition from the initial opposition between (techno-) enthusiasm and (techno-) reluctance, towards

1 Goodfellow et al. 2015.

2 Giles 2018. URL: <https://www.technologyreview.com/2018/02/21/145289/the-ganfather-the-man-whos-given-machines-the-gift-of-imagination/> (last accessed: January 9 2024).

3 Huckins 2023. URL: <https://www.technologyreview.com/2023/10/16/1081149/ai-consciousness-conundrum/> (last accessed: Jan. 9 2024).

4 OpenAI 2022. URL: <https://openai.com/blog/chatgpt/> (last accessed: Jan. 9 2024).

5 OpenAI 2021. URL: <https://openai.com/research/dall-e> (last accessed: Jan. 9 2024)

6 Midjourney 2023. URL: <https://www.midjourney.com/> (last accessed: Jan. 9 2024).

7 Rombach et al. 2022.

an increased awareness of the necessity for collaborative critical reflection.

However, establishing and developing a meaningful theoretical contextualization and critique of the various aspects of AI technologies requires transcending the boundaries of one research discipline and engaging in an interdisciplinary exploration. Although “interdisciplinarity” is often used as an appealing buzzword, the actual practice of interdisciplinary research at the intersection of AI and arts and humanities reveals numerous challenges such as cross-domain knowledge gaps, terminological misunderstandings, oversimplifications, a highly dynamic pace of development, lack of transparency, issues of explainability, and the AI “black box” problem. The attempt to overcome and critically engage with such challenges relies on nurturing cross-disciplinary dialogues. It also requires scholars to take the risk of stepping out of the comfort zone of their core disciplines and it might even require a readiness to engage in speculative and fragmentary explorations in order to tackle the often unexplainable and transient manifestations of constantly progressing AI technologies.

This volume presents a collection of short articles from scholars who undertook the challenging task of reflecting on the various aspects of AI technologies in the context of their relation to art and culture. It combines a twofold approach by focusing both on how AI technologies can be used to study art and culture, and how arts and humanities-based theoretical and methodological approaches can contribute to the contextualization and critical reading of AI technologies. This volume features contributions from scholars who are experienced with the challenges of using computational methods in arts and humanities research, as well as from scholars who reflect on contemporary AI developments from the more traditional standpoint of their respective discipline. The volume consolidates contributions from scholars belonging to different disciplines such as art history, media studies,

philosophy, anthropology, digital humanities, and computer science.

The contributions in this volume represent a unique collection of short articles that discuss a variety of contemporary relevant topics and case studies that emerge at the intersection of AI and arts and humanities. The article by Amanda Wasielewski⁸ discusses the implications of AI-based text-to-image models on the study of visual culture by focusing on how such models reify the Western concept of style. Nuria Rodríguez-Ortega⁹ elaborates on the concept of transduction as a framework for explaining, analyzing, and interpreting AI-generated images. The article by Bokar N'Diaye¹⁰ examines myths of the Greco-Roman world as a case study for contextualizing perspectives on human agency and creativity with relevance for debates on contemporary generative AI technologies. Dejan Grba¹¹ discusses the poetic similarities of contemporary AI artworks as a starting point for examining the strengths and weaknesses of AI art and for initiating a more comprehensive critical discourse on art and creativity. The article by Arif Kornweitz¹² explores the intersection of contemporary art practices and AI by focusing on case studies of two artists and drawing analogies between the concept of the latent space and the white cube gallery setting. Dominik Vrabčič-Dežman¹³ addresses the clichéd portrayal of AI in public media and draws on a range of interpretive theories of images to establish a framework for the examination of images of AI as a reciprocal link between aesthetics and politics. The article by Pepe Ballesteros Zapata¹⁴ elaborates on the role of computational methods in the methodological evolution of art history, focusing on several research examples in digital art history. Valentine Bernasconi¹⁵ discusses the challenges of interdisciplinary research in digital art history through the specific case study of machine learning-based body pose estimation in digitized paintings. The article by Piera Riccio and Nuria Oliver¹⁶ addresses the growing challenge of algorithmic censorship of artistic content that exhibits nudity on

8 Wasielewski 2024.

9 Rodríguez-Ortega 2024.

10 N'Diaye 2024.

11 Grba 2024.

12 Kornweitz 2024.

13 Vrabčič Dežman 2024.

14 Ballesteros Zapata 2024.

15 Bernasconi 2024.

16 Riccio / Oliver 2024.

online social platforms from a techno-feminist perspective. Anne-Laure Oberson's¹⁷ contribution reflects on AI generated images in the context of understanding the meaning of an image in the process of imagination.

This diverse collection of articles evolved into its current form from an initial attempt to facilitate interactive scholarly exchange and discussion on the currently relevant topic of AI and its relation to art and culture. More specifically, the articles presented in this volume represent a selection of extended contributions presented at the symposium "From Hype to Reality: AI in the Study of Art and Culture,"¹⁸ which took place at the University of Zurich in April 2023. The authors featured in this volume accepted the invitation to extend their initial symposium contributions into peer-reviewed short articles. The goal of the symposium was to bring together diverse perspectives and encourage cross-disciplinary discussions on the globally relevant topic of AI and its far-reaching implications on the future of art and culture. This volume therefore represents a unique selection of insightful articles that continue the dialogue initiated at the symposium, providing valuable insights and fostering a deeper understanding of the dynamic intersection between AI, art, and culture.

As the organizer of the symposium and co-editor of this volume, I would like to thank the whole editorial team—managing director Prof. Dr. Tristan Weddigen, co-editor Darío Negueruela del Castillo, and digital publications manager Elisa Bastianello—for the effort they invested in making the publication of this volume possible. On behalf of the editorial team, I would especially like to thank all the reviewers who dedicated their time and expertise to evaluate the submissions and provide valuable feedback. This volume and the preceding symposium represent results of the "From Hype to Reality: Artificial Intelligence in the Study of Art and Culture" project, which was funded by the UZH Global Strategy and Partnerships Funding Scheme, as well as supported by the Center for Digital Visual Studies.

¹⁷ Oberson 2024.

¹⁸ From Hype to Reality: AI in the Study of Art and Culture 2023. URL: [https://web.](https://web.archive.org/web/20240118144352/https://fromhypetoreality.com/)

[archive.org/web/20240118144352/https://fromhypetoreality.com/](https://web.archive.org/web/20240118144352/https://fromhypetoreality.com/) (last accessed: January 9 2024).

References

- Ballesteros Zapata 2024**
Pepe Ballesteros Zapata, "Evolving Methodologies: Computation in Art History," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0308>.
- Bernasconi 2024**
Valentine Bernasconi, "Automated Body Pose Estimation on Painting: A Crisis of Uncertainty," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0309>.
- Giles 2018**
Martin Giles, "The GANfather: The man who's given machines the gift of imagination," 2018. URL: <https://www.technologyreview.com/2018/02/21/145289/the-ganfather-the-man-whos-given-machines-the-gift-of-imagination/>.
- Goodfellow et al. 2015**
Ian Goodfellow et al., "Generative Adversarial Nets," in *Advances in Neural Information Processing Systems*, ed. Z. Ghahramani et al., Curran Associates, Inc. 2015. URL: https://papers.nips.cc/paper_files/paper/2014/hash/5ca3e9b122f61f8f06494c97b1afccf3-Abstract.html.
- Grba 2024**
Dejan Grba, "Incidental Reverberations: Poetic Similarities in AI Art," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0305>.
- Huckins 2023**
Grace Huckins, "Minds of machines: The great AI consciousness conundrum," 2023. URL: <https://www.technologyreview.com/2023/10/16/1081149/ai-consciousness-conundrum/>.
- Kornweitz 2024**
Arif Kornweitz, "Inside the High-Dimensional White Cube The Ideology of Latent Space," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0306>.
- Midjourney 2023**
Midjourney, "Midjourney," 2023. URL: <https://www.midjourney.com/>.
- N'Diaye 2024**
Bokar N'Diaye, "Stochastic Parrots in the Ancient City?," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0304>.
- Oberson 2024**
Anne-Laure Oberson, "Making Sense of AI Generated Images in the Process of Imagination," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0311>.
- OpenAI 2021**
OpenAI, "DALL·E: Creating images from text," 2021. URL: <https://openai.com/research/dall-e>.
- OpenAI 2022**
OpenAI, "Introducing ChatGPT," 2022. URL: <https://openai.com/blog/chatgpt>.
- Riccio / Oliver 2024**
Piera Riccio and Nuria Oliver, "A Techno-Feminist Perspective on the Algorithmic Censorship of Artistic Nudity," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0310>.
- Rodríguez-Ortega 2024**
Nuria Rodríguez-Ortega, "Exploring the Concept of Transduction to Interpret AI-Generated Images," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0303>.
- Rombach et al. 2022**
Robin Rombach et al., "High-Resolution Image Synthesis with Latent Diffusion Models," in 2022 *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, IEEE 2022, pp. 10674–10685. URL: <https://ieeexplore.ieee.org/document/9878449/>. Doi: <https://doi.org/10.1109/cvpr52688.2022.01042>.
- Vrabič Dežman 2024**
Dominik Vrabič Dežman, "Interrogating the Deep Blue Sublime: Images of Artificial Intelligence in Public Media," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0307>.
- Wasielewski 2024**
Amanda Wasielewski, "The Reification of Style in AI Image Generation," in *From Hype to Reality: Artificial Intelligence in the Study of Art and Culture*, ed. Eva Cetinić and Darío Negueruela del Castillo, 2024, Doi: <https://doi.org/10.48431/hsah.0302>.

