

GUEST EDITORS' INTRODUCTION

Art and Artificial Intelligence

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As guest editors we have appreciated the opportunity to engage with a variety of authors working within the realm of art+AI. The process of guest editing this special issue has expanded our consideration from three different professional stances. Bruce watches an art and design campus hesitantly consider artificial intelligence as a possible contribution to artistic practice, while tracking a growing AI competence brewing with enthusiasm in a computer science department on a campus next door. Nick considers artificial intelligence for its potential in facilitating 3D geographic visualization, 3D spatial interfaces, and 3D data surveying as he considers AI methods to make progress on geographic challenges, while considering the art of designing of user interfaces intended to communicate knowledge. Aaron develops computer graphics and vision algorithms, and writes about how they interact with the worlds of art and perception.

We were pleased to have received eleven submitted papers to our call for papers and, following a thorough independent review process, three of them were selected for publication. The submissions as a collective supported an intriguing taxonomy for an art+AI domain suggested by the word cloud in Figure 1. The three accepted papers cut across that taxonomy. They center around a conceptual tool, a software tool component, and a case study of applying popular tools to an often-pursued complex design activity.

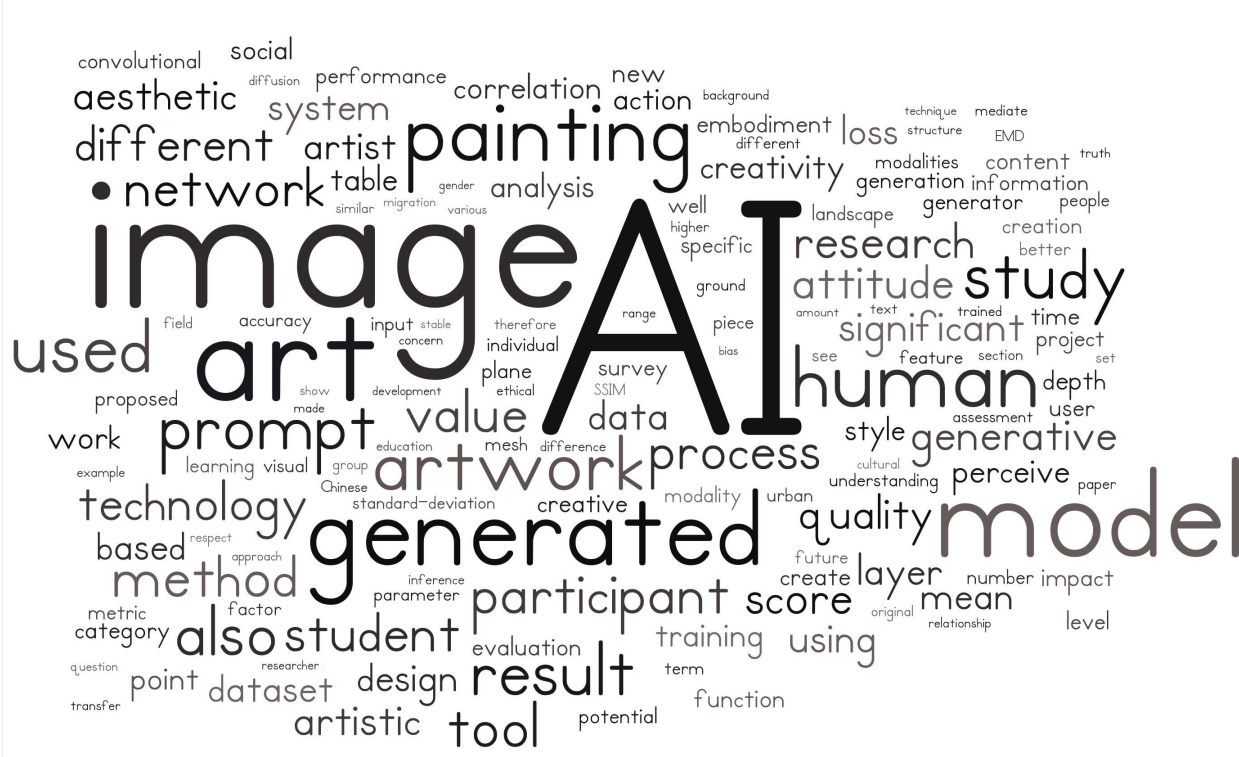


figure 1 – The word cloud output by inputting the text of all eleven art+AI submissions into Wordle software obtained from wordle.net. A word cloud is a visual representation of a collection of words where the size of each word indicates its frequency or importance within the given text and the words are arranged randomly.

In “How Text-to-Image Generative AI is Transforming Mediated Action,” Tedre et al. look at the potential of mediated action theory to accommodate both the transformational potential of genAI tools in creative fields and art, and the ethics of emergent social dynamics it generates. The paper considers ethical ramifications of genAI raised by multiple submissions not published in this issue.

In “Lightweight 3D Convolutional Occupancy Networks for virtual object reconstruction,” Tonti et al. share their method for a 3D object reconstruction task from a sparse point cloud, developing a lightweight implicit representation to find a balance between mesh generation speed and mesh quality. Though they do not mention artists explicitly, AI-supported 3D ideation seems a likely continued progression from 2D art ideation.

In “Testing the Capability of AI Art Generation Tools for Urban Design: A Comparative Study,” Phillips et al. provide a case study of applying AI-based transformation and diffusion tools to the visual design activity of zoning-appropriate urban spaces. The paper seems helpful for investigators of the potential of AI to facilitate complex design activities of artists in general.

This special issue also includes non-juried *About The Cover*, *Art on Graphics*, and *Graphically Speaking* departmental articles. Jon McCormack’s nearly two decades of work in art+AI, as part of Sensilab’s growing AI investigations, provides a professional artist’s perspective in both, with insights as to the changing nature of artificial intelligence over his career. Basole and Major provide a primer on how GenAI will be useful in all phases of visualization workflow.

We wish to thank Pak Chung Wong and André Stork for their guidance in producing this special issue. We owe thanks to department editors Francesca Samsel, who investigated the best art+AI work she had found online in order to contribute a departmental article, and Rahul Basole. We wish to thank all authors who submitted a paper to the call and the many reviewers for their hard work in helping us assess submitted papers. Without all their work, there would have been no CG&A special issue on art+AI.

We hope this special issue evokes useful insights that progress our community toward better artistic tools with AI. These new technologies promise transformations in how we make and understand art, while also threatening traditional roles and conceptions of art, and raising serious ethical concerns. The next few years promise to be at least as dramatic a time for AI and art as the last ten years have been. Software expediency makes new tools available for artists to inject into their artistic practice at an accelerated pace, but it is hard to anticipate what new artistic methods might emerge in the subconscious of those trained in a long tradition of artistic process, reinforced through artistic networks and professional experience.

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