ONTOLOGIES OF AI PHOTOGRAPHY

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ABSTRACT:
The recent explosion of large language models (LLMs) used to generate images (such as Dall-E, Midjourney, Stable Diffusion, etc.) has dramatically increased and expanded the use of computation, the speed with which an image is made, and the perceptual capacity of an image device. Moreover, in addition to raising ethical and legal questions concerning creative authorship, how content is acquired for data sets training AI tools, and how to mitigate the perpetuation of algorithmic racial and gender biases, among other concerns, the significant shifts caused by AI-assisted image production have raised, and in some cases renewed, questions about the ontology, or definition, of a photograph. This last point is the focus of this paper, which examines photography criticism through the lens of media theory and philosophy to explore the ontological materialities of AI image generation. This paper argues that AI images are an emerging form of post- or computational photography sourced from materials with indexes, and during AI image generation, all the computational decisions — decisions that determine which contact with which models — are hidden but not removed from the process, which remediates and abstracts both the role of the creator/photographer and the formation of the final image in traditional photography. The decision-making system between signal and noise is heightened *and* hidden not introduced by the addition of AI.

Photography, historically celebrated for its indexical relationship with reality, captures a moment in time with an evidently inherent connection to the referent. However, while AI-generated images seem to mark a departure from this conventional understanding, they rather complicate it by creating a circuitous relationship (contact) between an image and its multitudinous referents (various models). In this post-photographic era, the indexicality of images is redefined (Gunning, 2008). Instead of capturing a direct imprint of reality, AI-generated images manifest the learned patterns and styles (models) derived from vast datasets as well as inherit their indexical relationship to a plethora of referents. The indexical link shifts from a direct connection to a specific moment to a more abstract relationship with the collective visual experiences (Barthes, 1981) and the materialities encoded in the AI's training data. As with the shift from analog to digital photography, the increasingly abstract positionality of digital objecthood of AI-generated images complicates the binaries between material and immaterial and human and nonhuman (Fackler, 2019), and urges a rethinking of such limited frameworks.

The machine learning models, particularly those utilizing generative adversarial networks (GANs), have the ability to synthesize entirely new visual content that was never present in the physical world, but it is through the collective process between algorithm and image-makers that the material on which these systems are trained is embedded in AI-generated images. This paper thus explores the transformative impact of artificial intelligence (AI) on the realm of visual representation, specifically focusing on AI-generated images as a distinct form of post-photography and part of a longer lineage of tool-assisted creativity. In the age of advanced machine learning algorithms, AI has transcended mere replication of existing photographic styles, giving rise to images that challenge traditional notions of indexicality and reshaping our understanding of photography.

Furthermore, the emergence of AI-generated images challenges the established boundaries of photographic intent but doesn’t threaten authorship in quite the way many fear. Traditional photographs are products of human decisions regarding framing, timing, and composition. In contrast, AI-generated

images arise from complex algorithmic processes, blurring the lines between human intentionality, machine autonomy, and the perceptual capacity of each. This shift prompts a reconsideration of the role of the artist, raising questions about creativity, originality, and the nature of artistic expression in the age of AI and also reminds us that all creativity is, in part, artificial. AI image generation is the product of intense training, but it could be said that vernacular photography is, in its own way, reflective of a kind of cultural training (Chuk, 2023), with the selfie as one such example of how models are understood, shared, modified, and shaped (van Dijck, 2013; Wendt, 2014; Chang, 2019).

Today, creative tools take the form of sophisticated systems — mechanical and digital tools intelligently laboring on our behalf — but there is a historical lineage of simpler technical tools that shape thought and creativity, too: tubed paint and paintbrushes, artificial light, mirrors, and other reflective surfaces. Even language is a human-made technical tool designed to communicate, document, and express our stories and ideas, forming our perceptual capacities, like a hallucination, to make sense of encoded information (Flusser, 1985; Kittler, 1986). Thinking of them as technical "machines" evokes the ancient Greek term techne, the basis of our modern-day term technology, and lends credence to the possibility that creativity has always been artificially intelligent (du Satoy, 2019; Zylinska, 2020), owing to the ways that any medium (or technical system) gives shape to thought, whether through writing, filmmaking, painting, or code. Despite this, the acceptance of artificial intelligence as a viable creative tool in the artist's arsenal is met with resistance by many, especially in relation to the conventionally understood "integrity" of a photographic image (Ritchin, 2023; Steyerl, 2023).

As we navigate this evolving landscape, it becomes crucial to examine the implications of AI-generated images on our understanding and the complexities of visual truth, documentation, representation, and creative expression. While AI pushes the boundaries of creativity and expands the possibilities of visual expression, it also prompts a reevaluation of the cultural and philosophical dimensions associated with image-making and the growing human-machine relationship. This paper sets the stage for a comprehensive exploration of the post-photographic paradigm, urging scholars, artists, and technologists to engage in a critical dialogue about the transformative power of AI in shaping the future of visual culture.

KEYWORDS:
artificial intelligence
digital materiality
indexicality
post-photography
vernacular photography