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Encoded Gaze: Algorithmic Aesthetics and Visual Communication in the Age of AI

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ABSTRACT

As artificial intelligence increasingly governs the production and circulation of visual content, our ways of seeing are subtly, yet profoundly reshaped by algorithmic processes. This paper investigates the transformation of visual communication under the influence of AI-generated aesthetics and explores the critical concept of the "encoded gaze." Building on media theory, computational aesthetics, and visual semiotics, the study analyzes how algorithmic systems encode, prioritize, and obscure visual meaning. Through case studies ranging from Instagram filters to AI-generated art and predictive surveillance, the paper reveals the sociopolitical implications of delegating visual authorship to machines. Ultimately, it argues that the algorithmic gaze does not merely reproduce human bias but constitutes a new epistemic regime—one that reconfigures aesthetic value, cultural memory, and visual literacy in the post-human media environment.

Keywords: Algorithmic Aesthetics, Visual Communication, Encoded Gaze.

INTRODUCTION

In the contemporary media landscape, algorithms have become the unseen architects of visual culture. From personalized social media feeds to automated surveillance and generative art, the digital image is increasingly crafted, selected, and disseminated by artificial intelligence (AI). The result is a profound shift in visual communication—what we see, how we interpret it, and who controls the means of its production. This paper introduces the concept of the "encoded gaze" to describe how algorithmic systems not only mediate vision but also produce new aesthetic and semiotic regimes.

The encoded gaze differs from traditional notions of the gaze, such as Laura Mulvey's cinematic male gaze, by locating visual authority in data-driven systems rather than in human subjects. Here, visual culture is shaped not by direct human intention but by opaque processes of optimization, prediction, and algorithmic training. These processes are rooted in massive datasets that reflect both dominant cultural values and systemic inequities. Consequently, AI systems often amplify existing stereotypes while simultaneously creating new modes of visual abstraction and pattern recognition that lie beyond human perception.

This article proceeds in five parts. Section 2 explores the theoretical foundations of algorithmic vision, engaging key thinkers such as Harun Farocki, Vilém Flusser, and Wendy Hui Kyong Chun. Section 3 analyzes the aesthetics of algorithmically generated images, focusing on filters, generative adversarial networks (GANs), and platform design. Section 4 examines the politics of vision under AI, with particular attention to surveillance, facial recognition, and predictive policing. Section 5 addresses the implications of the encoded gaze for visual literacy and cultural memory. In conclusion, the article calls for critical literacy practices that can counterbalance the automated visuality of contemporary media.

THEORETICAL FRAMEWORK: VISION, CODE, AND CONTROL

The notion of machine vision has long occupied a central place in media theory. Harun Farocki's term "operational images" refers to images made by machines for machines—images not intended for human viewing

but used to guide systems such as missiles or automated factories (Farocki, 2004). Similarly, Flusser (1985) theorized the technical image as a form of encoded visualization that abstracts and replaces the world rather than representing it.

Algorithmic vision, as Chun (2011) suggests, is not neutral. It is performative and generative. Algorithms are not just passive mirrors; they actively structure perception through computational logic. This framing aligns with Bratton's (2015) idea of the "stack"—the vertical integration of software, hardware, and protocols that shape global information flows. In the context of visual culture, this stack constitutes a new visual infrastructure that governs both visibility and invisibility.

The encoded gaze is thus not a passive gaze but a form of governance. It is produced by training data, machine learning models, and platform incentives. Unlike human vision, which is bounded by phenomenological constraints, algorithmic vision operates at posthuman scales—detecting patterns across millions of images, generating new aesthetic categories, and enforcing standards of visibility that are inherently computational.

ALGORITHMIC AESTHETICS: PLATFORMS, FILTERS, AND GANS

The aesthetics of the encoded gaze are both ubiquitous and invisible. Social media platforms such as Instagram and TikTok rely on algorithmically sorted content and beautification filters that subtly shape users' self-presentation. These filters are not merely cosmetic; they encode cultural assumptions about race, gender, and beauty. A 2020 study found that facial filters disproportionately lighten skin tones and standardize facial proportions according to Eurocentric norms (Noble, 2018).

Beyond platforms, AI art generated by GANs—such as DeepDream, DALL·E, or Artbreeder—has introduced a new visual lexicon. These models are trained on vast datasets and produce images that often straddle the boundary between abstraction and photorealism. The surreal aesthetic of GAN art is symptomatic of what Manovich (2020) terms "synthetic realism": images that look real but are algorithmically fabricated.

The algorithmic aesthetic is governed not by human taste but by code. What appears in a feed or art exhibit is determined by metrics of engagement, training data bias, or procedural randomness. As such, authorship becomes decentralized. While artists and users may shape prompts or inputs, the final output reflects the priorities of computational logic rather than intentionality.

SURVEILLANCE AND THE POLITICS OF VISION

Nowhere is the encoded gaze more consequential than in surveillance and biometric systems. AI-driven facial recognition has been deployed by law enforcement, airports, and private corporations to identify individuals based on visual data. However, studies show that these systems are often less accurate for darker-skinned individuals and women (Buolamwini & Gebru, 2018).

These inaccuracies are not merely technical glitches; they reveal deeper epistemological assumptions. As Browne (2015) argues, surveillance technologies have historical roots in racialized systems of control. The algorithmic gaze inherits and extends this legacy. Predictive policing platforms, for instance, visualize crime by overlaying heat maps and behavior models on urban landscapes. These representations reinforce preexisting biases, encoding them into spatial and visual hierarchies.

Thus, algorithmic vision not only represents but acts. It decides who is visible, under what conditions, and to what end. This performative function makes it urgent to question not only how AI sees, but what regimes of truth it constructs.

VISUAL LITERACY IN THE AGE OF AUTOMATION

In a world saturated by algorithmically generated and mediated images, visual literacy must expand beyond traditional semiotics. The ability to "read" images now requires understanding how those images are selected, produced, and circulated by computational systems. This includes recognizing bias in training data, interpreting algorithmic outputs, and critiquing platform logics.

Moreover, the encoded gaze reshapes cultural memory. Algorithms influence which images are archived, promoted, or forgotten. For example, AI-powered recommendation systems prioritize recent, popular, or visually engaging content, potentially marginalizing historical or subcultural material. In this context, cultural

preservation becomes a matter of algorithmic curation.

Media artists and activists have begun responding to these challenges. Works like Paglen's "ImageNet Roulette" expose the racial and gender biases embedded in image classification datasets. Others, like Steyerl (2011), interrogate the aesthetics of machine vision through installations and lectures. These practices model critical engagements with the encoded gaze, offering pedagogical tools for visual resistance.

CONCLUSION: TOWARD A CRITICAL OPTICS OF MACHINE VISION

The algorithmic gaze is more than a new way of seeing; it is a new regime of knowledge. As AI systems increasingly mediate visual experience, they redefine aesthetic standards, reorganize cultural hierarchies, and reconfigure the politics of visibility. The encoded gaze operates through metrics, optimization, and abstraction, producing a form of automated spectatorship that is both seductive and opaque.

To navigate this terrain, we must cultivate a critical optics—an interdisciplinary framework that combines visual culture, computational literacy, and ethical reflection. This includes advocating for algorithmic transparency, promoting inclusive training data practices, and supporting artistic interventions that destabilize dominant visual regimes.

In reclaiming agency over the visual field, we are not merely resisting technological encroachment. We are asserting the right to see—and to be seen—on just and equitable terms.

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