CINEMATIC AI
Towards a Theory of Algorithmic Cinema

Cut/Generate: Montage and AI
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We are rapidly moving today towards an algorithmic film culture. In spite of resistance from many sectors of the movie industry, algorithmic technologies have established themselves as indispensable tools of contemporary video production, in the simulation of historical film stocks and stylistic elements, and film restoration, in upscaled and colorized "enhanced" videos of films from the earliest years of motion pictures. The past year alone has seen the arrival and explosive growth of "AI movies"—photorealistic, animation, and motion graphics videos generated from large-language models (LLM)–in a wide range of contexts, from YouTube videos of AI-generated commercials and music videos to the growing number of AI film festivals. This paper broadly looks at what I call *cinematic AI* as an emerging phenomenon of contemporary digital culture, along with its equally emergent aesthetics, with the goal of laying out some foundations for a new algorithmic film theory. One of these foundations, long central in classical film theory, is montage.

Montage as an aesthetic practice arose out of the technical constraints of the medium itself: the limited length of a celluloid film reel. Today's AI moviemakers face a very different set of technical constraints and challenges, from the limited power of GPUs to the complexity of workflows, yet their outputs are surprisingly similar to those of early cinema: short moving image sequences, at this point typically 15-30 seconds in length, that have to be stitched together into longer movies. Yet montage in today's algorithmic cinema is by no means limited to the syntagmatic plane, but is intrinsic to the compositional process itself. This is because the raw material in this case is not the indexical "real world", as it has been throughout the history of cinema, but images of it: the vast archive of audiovisual representations of the world that includes not just photography and cinema but the history of art itself, from cave paintings to comic books. As with the images of Midjourney and similar platforms, today's algorithmic movies are generated from a multiplicity of datasets sampled from this audiovisual archive, and in this respect are *heterotopias* in Foucault's sense, analogous to the Chinese encyclopedia of Borges's famous story.

Montage in algorithmic cinema thus needs to be framed in a broader sense than the solely cinematic one elaborated by Eisenstein in the 1920s. In addition to Soviet montage, the paper suggests, today's algorithmic cinema is more productively framed by dadaist and Surrealist film and photography: Marcel Duchamp's *Anemic Cinema*; the photography of

Man Ray; the Surrealist practice of automatic writing; the collages of Max Ernst, the photomontage of the Berlin Dada Group; or Joseph Cornell's found-footage film *Rose Hobart*. If cinematic AI today can be framed as an algorithmic form of "automatic cinema", its creative source is not the individual unconscious but the collective one of the audiovisual archive of human history; yet it also opens up questions about the status of the film *auteur* in the age of automation. Similarly, framing algorithmic cinema's heterotopia of aesthetic styles and objects opens up questions about its political dimension as a tool of ideological critique, rather than simply the commercial simulacra of the culture industry.

Bio-Bibliography

Martin Roberts teaches courses on world cinema, digital culture, and cinematic media in the Department of Visual & Media Arts at Emerson College, Boston. He completed a doctoral dissertation on the contemporary French novelist Michel Tournier at the University of Cambridge, published as *Michel Tournier: Bricolage and Cultural Mythology* by Stanford French & Italian Studies.

His postdoctoral research focused on ethnographic surrealism, but since participating in the launch of the Film & Media Studies program at MIT, his research has focused on global media and culture. His publications on film and media include essays on global documentary, IMAX movies, and the Danish Dogma '95 movement in journals such as *Cinema Journal* and *Visual Anthopology*.

His most recent conference papers are Moving Targets: Object Detection and Algorithmic Aesthetics; Dangerous Liaisons: Nocturnal Cinema and the French New Wave; and Entangled Lives: Uncanny Animals in Cosmopolitical Documentary.