# Amenda Tate

MEDIA PRODUCTION, EMERGING MEDIA, INTERACTION SYSTEMS, EDUCATION

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## CREATIVE SCHOLARSHIP STATEMENT

My creative scholarship investigates how bodies, technologies, and environments participate in making meaning together. Working across moving image, interactive systems, performance, creative coding, responsive sound, physical computing, and participatory installation, I create systems in which technology does not simply deliver content but structures relationships among people, media, and their surroundings. Across these forms, I return to several connected questions: How does an interface shape what a participant notices or does? Where does authorship reside when human action is interpreted through computational systems? And how might emerging media support embodied, accessible, and plural forms of participation?

My interdisciplinary trajectory began in object-making and metalsmithing and expanded through interests in mechanical systems, performance, computation, and interaction design. Movement became an especially important material. I became interested in what is translated or transformed when ephemeral human action passes through technological mediation and in the feedback loops that emerge when people encounter the consequences of their own actions. That interest continues to connect my work in robotics, film, interactive installation, sound, and Human–Computer Interaction (HCI).

A foundational project in this trajectory is *Manibus*, an embodied robotic drawing system I began developing in 2017. Manibus translates performer movement into physical marks through a wearable controller, custom electronics, algorithmic mapping, and a robotic painting apparatus. I designed the system's mechanical structure, electronics, interaction model, calibration processes, and iterative prototypes. The project has since developed through collaborations with professional dancers and choreographers, public participants, cultural institutions, educators, and individuals with physical and cognitive disabilities.

*Manibus* is deliberately not a simple input-output system. Movement is interpreted rather than directly reproduced. Performers change their movement in response to the marks they see emerging; the computational system translates those gestures according to its mappings; and I remain present as artist and facilitator, making decisions about timing, color, calibration, and spatial conditions. Authorship is therefore distributed among performer, artist, algorithm, machine, material, and situation. This reciprocal structure became central to my understanding of interaction. Rather than asking whether technology can autonomously make art, I was interested in how technological systems establish conditions through which people act, respond, negotiate, and create together.

The COVID-19 pandemic created an important turning point in my practice. At the time, I was developing a grant-supported live performance project that would eventually become *Sapient_2.021*. When live performance became untenable, I began considering whether the project's questions about bodies, machines, labor, and identity could instead be explored through performance for camera. I had substantial experience designing interactive and performative systems, but filmmaking required me to think differently about how movement, time, point of view, sound, and audience attention could be structured. Rather than moving immediately into the larger production, I took a series of performance-for-camera courses with artist Jonathan VanDyke at Pig Iron School in Philadelphia. Through that coursework, I created a series of solo works that allowed me to develop filmmaking through practice.

*Duplicity*, *The Atmosphere*, and *What's Cooking / Twenty Steps* were crucial experiments during this period. In *Duplicity*, I performed for the camera while also handling camera work, editing, music composition, and music performance. *What's Cooking / Twenty Steps* became a more explicit study of camera placement, embodied movement, framing, and editing, including experimentation with unconventional camera mounts and DaVinci Resolve. *The Atmosphere* further developed my ability to construct an entirely solo-authored moving-image work through camera, performance, editing, sound, pacing, and post-production; it was later selected for statewide broadcast through Iowa PBS's The Film Lounge. Together, these works allowed me to learn film not abstractly, but by translating questions already present in my performance and interactive practice into the distinct spatial and temporal language of the camera.

That period of experimentation directly informed *Sapient_2.021*, which reconceived the original live-performance project as an experimental short film combining screendance, robotic interaction, performance, and post-production. I originated the concept, produced and directed the film, designed and operated its robotic and interactive systems, and completed the final editing, color, and sound/music work. The production developed through conceptual and visual planning, notes outlining three dance vignettes, wardrobe and location decisions, choreographic structures, and space for improvisational performance. The film examines labor, automation, identity, and humanness within a technologically mediated world and later circulated through international film and screendance festivals, receiving multiple awards for experimental, STEAM, and dance-and-technology filmmaking.

Moving image consequently became more than a solution to the temporary loss of live performance; it became another research method within my practice. Film gave me a way to work with framing, editing, sequencing, repetition, and sound as compositional tools alongside the embodied and interactive systems I was already developing. Later, in *Westbound*, created with singer-songwriter Lily DeTaeye, I extended this vocabulary into animation and compositing, using storyboarding, digital illustration, Character Animator, keyframing, After Effects, Photoshop, and Premiere Pro to construct a collage-based narrative environment. This expansion into cinematic and animated form broadened the narrative possibilities of my practice while sharpening my attention to how time and sequence shape an experience.

My MFA research then returned these questions to real-time interaction, asking what changes when the participant is physically present inside the computational feedback loop. My MFA research, *Situational Identities: This and Something Else*, brought these questions into interactive digital media through works including *Movement Manifesto*, *Technoculture Cumulonimbus*, and *Positioned (Ode to Metropolis)*. In *Positioned*, I adapted PoseNet-based skeletal tracking to interpret participant movement through a custom p5.js system. In *Movement Manifesto*, an overhead camera translates movement and speed into projected typography and text-to-speech, creating a feedback loop among gesture, computational interpretation, projected form, and subsequent movement. These works led me to think increasingly about an interactive artwork not simply as an object with which someone interacts, but as a designed set of conditions for participation. That distinction is now central to my doctoral research in HCI.

My dissertation, *Interaction as Facilitation: Translating Museum Interpretive Practice into Interactive System Design*, investigates how practices developed within interpersonal museum education facilitation can inform the design of interactive systems. Museum educators routinely use strategies such as open-ended questioning, wait time, multiple perspectives, slow looking, affective attunement, productive ambiguity, and shared inquiry to support interpretation without determining what participants must conclude. My research asks what happens when those relational practices are translated into computational design conditions.

This represents a significant development in my creative trajectory. My earlier work investigated feedback, embodiment, and co-authorship; the dissertation asks more specifically how interaction can facilitate rather than merely respond.

The central Research-through-Design case is *Future Forest: Digital Echoes*, an interactive environment built from browser-based systems, sensors, generative visuals, light, responsive sound, speech recognition, and text-to-speech. Participants encounter a system that reacts to movement, proximity, duration, voice, and presence. Instead of providing a sequence of tasks to complete, the work asks participants to discover its relationships through moving, listening, lingering, experimenting, and noticing how the environment responds.

One component invites a participant to speak a memory. Their words are transformed into dynamic typography that changes position and scale, fades over time, and returns through fragmented spoken repetition. Elsewhere, bodily movement and duration influence visual and sonic behavior. These interactions treat attention, waiting, memory, ambiguity, and co-presence as materials of the work.

Methodologically, my dissertation brings together constructivist and interpretivist inquiry with Research-through-Design. Design documentation, reflective practice, observation, visitor responses, interviews, and limited interaction telemetry allow me to examine not whether a participant has completed a prescribed task efficiently, but what kinds of engagement become possible within the system. I look particularly for evidence of exploratory agency, social co-presence, and openness to multiple interpretations.

Accessibility has become increasingly inseparable from this research. My work in Iowa State University's Digital Accessibility Lab, graduate study in HCI, museum education, and institutional accessibility initiatives has changed how I understand interaction design. Accessibility is not simply a technical requirement applied after a creative system is complete; it can be a generative design condition that challenges assumptions about whose bodies, senses, knowledge, and behaviors an interface expects. This informs my interest in multimodal interaction, embodied interfaces, and flexible forms of participation.

My next phase of creative scholarship will develop through embodied emerging media, bringing facilitation-informed interaction design into closer conversation with real-time moving-image production, responsive environments, and accessible media systems.

I will extend my existing work with motion tracking, projection, creative coding, responsive sound, performance, and multi-camera production into real-time and virtual-production environments. I am interested in systems in which performers influence projected or virtual environments in real time and, reciprocally, alter their behavior in response to those environments. This extends the feedback structures developed through *Manibus*, *Movement Manifesto*, and *Future Forest* into a cinematic production context.

I also plan to investigate generative AI through the question of co-creative authorship. My robotic practice has long complicated distinctions among tool, collaborator, interpreter, and author. Contemporary generative media systems make those questions newly consequential. I am interested in AI-assisted previsualization, compositing, environmental generation, and moving-image production as sites for examining authorship, labor, representation, and agency.

Accessibility and multisensory experience will remain another part of this work. I am interested in interaction responsive to different forms of movement, multimodal alternatives that function as part of an artwork rather than as supplements to it, and systems that do not presume a single normative body or sensory pathway. In particular, I want to explore how facilitation-informed design can make emerging-media experiences understandable enough to invite participation without prescribing how they should be interpreted.

Across these directions, the continuing question is not simply what new technologies allow us to produce, but what kinds of relationships they allow us to construct. My scholarship moves between creative production and critical inquiry, using film, interactive systems, performance, installation, and HCI research as interconnected ways of investigating how technologies shape attention, authorship, participation, and interpretation. I continue to create emerging media that moves beyond one-directional storytelling and reactive input-output models toward reciprocal systems in which people, technologies, and environments participate in interpretation and co-creation.