

AI: A Studio Approach

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Rebecca Jinxiu Han, *Reflective Thinking on Digital Self-Expression*, 2024.
Courtesy of the artist

THE INTEGRATION OF ARTIFICIAL INTELLIGENCE IN ARTISTIC practice has ushered in a transformative period of studio-based exploration, one that reshapes the relationships between artists, tools, and audience. At the University of Texas at Dallas, the 3D Studio Lab provides a compelling case study of how these technologies are not simply inserted into existing workflows, but rather reframe the conceptual, material, and ethical frameworks of artistic production.

This model offers a compelling example of how artists engage with AI not as a threat to creativity, but as an instrument for expanding authorship, interrogating cultural narratives, and constructing ethical frameworks for future practice.

The origins of this evolving practice were catalyzed by seed funding from the UT Dallas Humanities and Emerging Arts (HeArts) Grant, supported through the Office of Research and Innovation. The award created a unique opportunity to undertake an intensive investigation into the integration of AI technologies within Afro-Futurist frameworks, resulting in the development of new technical workflows, public performances, and pedagogical models that continue to evolve today.

Within this model, artificial intelligence is neither subject nor spectacle, but a collaborator within an iterative process governed by the core studio principles of materials, process, context, and meaning. These principles provide structure and method, anchoring the experimental potential of AI within a robust pedagogical and artistic framework.

Materials: Expanding the Tangible and Intangible

AI-generated images and structures contribute to new material vocabularies, producing forms that challenge conventional understanding of space and dimensionality. Tools such as MidJourney, DALL-E, and Stable Diffusion enable the creation of source imagery through language-based prompting, while ChatGPT and similar platforms provide coding modules that bridge into various software environments, expanding parametric design through natural language input.

By leveraging AI-generated code, computational fabrication can be optimized. In platforms such as Rhino Grasshopper, algorithmically derived geometries can then be realized in wood, plexiglass, CNC-milled panels, and laser-cut forms. This synthesis of AI coding, parametric modeling, and physical fabrication opens pathways for both sculptural innovation and interdisciplinary application, as seen in public artworks produced for civic commissions and international exhibitions.

If materials set the stage for AI's creative intervention, it is through the process that artists begin to cultivate a reciprocal dialogue with the machine, negotiating agency, intuition, and computational logic.

Process: AI as Collaborative Agent

With AI, the creative process is reframed as a dialogue between human intuition and machine-generated output. Rather than replacing traditional modes of authorship, AI prompts iterative exploration that fuels artistic growth. In the pedagogical context of the studio, this approach invites students into an evolving conversation about agency, intention, and invention.

Prompt engineering is the central skill within this process. Artists develop sophisticated descriptive frameworks that direct AI output toward aesthetic outcomes. Diverse structures for crafting prompts are emphasized: subject identification, adding prepositional details and descriptors, defining actions, establishing settings, and applying meta-modifiers that influence overall style and mood. This approach allows artists to generate highly specific and original imagery while circumventing the ethical risks of style mimicry or direct emulation of specific artists.

Everyone is guided by a critical principle: avoiding the invocation of named artists within prompts, thereby preserving both originality and intellectual property boundaries. This fosters the development of distinctive artistic voices rather than derivative outputs. AI becomes a tool for amplifying personal expression rather than for replicating existing artistic canons.

In the wider discourse on AI-generated art, concerns about authorship, originality, and data ethics remain prominent. While some public debates fixate on the mimicry of pre-existing styles or legal battles over training data, this studio approach advocates for generative frameworks that prioritize distinct artistic voices and cultural accountability.



Andrew F. Scott, *UWS Benches*, 2025. Laser cut cardboard from AI Optimized Grasshopper Script for Serial Fabrication. Courtesy of the artist



Andrew F. Scott, Laser Engraving of AI Generated Imagery from the *Afro-Futurist Midjourney Series*, 2024. Courtesy of the artist



Andrew F. Scott, *AVATARS* series, 2024.
Courtesy of the artist

Context: Embedding Work within Cultural and Historical Narratives

Every work produced within the AI studio exists within a complex web of cultural, historical, and spatial narratives. This is particularly resonant within projects exploring Afro-Futurist themes, where speculative futures intersect with ancestral memory and diasporic identity. The AVATARS project, for example, exemplifies how AI-generated portraits, animated through facial recognition and layered audio, create a dynamic space for reflection on representation, embodiment, and technology's role in shaping human identity. This video portraiture series fused AI image synthesis with facial animation and curated sound design to build immersive and culturally significant digital narratives.

In this context, AI serves not merely as a technical tool, but as a medium for historical interrogation and cultural commentary, situating the work within ongoing conversations around power, authorship, and inclusivity. Issues of algorithmic bias, cultural appropriation, and historical erasure become part of the active discourse embedded within studio critique and project development.

Meaning: Generating New Forms of Interpretation

The iterative nature of AI-infused studio practice often yields outcomes that exceed the artist's initial vision. This allows for emergent meaning-making, where contradictory or ambiguous results provoke deeper reflection. The Synectics framework, embedded into studio pedagogy, further supports this exploration of metaphor, analogy, and paradox, hallmarks of mature creative inquiry. Synectic methodologies encourage students to animate, distort, hybridize, and transform ideas, techniques that resonate deeply with AI's generative capacities. Embracing contradictions fosters richer, more nuanced works that transcend simple visual output, engaging viewers on intellectual and emotional levels.

Through this fusion of iterative exploration and conceptual interrogation, artists experience firsthand that AI does not diminish authorship, but expands its possibilities, challenging the boundaries of both interpretation and invention.



Vajihe Zermaniderkani, *Displacement from An Afro Futurist Midjourney*, Row Projection Event, 2024. Photo: Javier Giribet-Vargas



Andrew F. Scott and Matt Unkenholz, Immersive Sound Reactive Projection for Brandee Younger, Resident Artistic Director, *Brand New Life* Performance, SFJazz, March 7–8, 2024. Photo courtesy of the artist.

Live Performance and Public Presentation

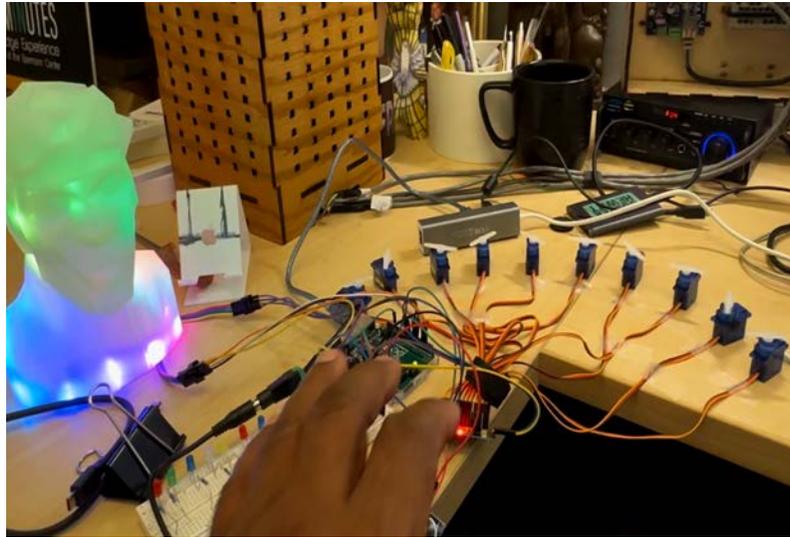
A defining feature of this studio approach is its extension into public performance and civic engagement. The immersive projection event *An Afro-Futurist Midjourney* exemplifies this approach. Staged at Research Operations West on the UT Dallas campus, this outdoor projection mapping event combined Andrew Scott's AI-generated visuals with student work, offering the North Dallas community a participatory encounter with Afro-Futurist narratives and emerging technologies.

In live performance contexts, such as collaborations with jazz artists Terence Blanchard and Brandee Younger at Lincoln Center, The Orpheum Theatre and SFJAZZ, AI-generated content becomes an important element, expanding the concert experience. Projection mapping systems that respond to the improvisational dynamics of live performance, blend generative imagery, creating deeply immersive and emotionally resonant environments.

In *A Tale of God's Will*, photographic imagery from Hurricane Katrina was transformed into a series of abstract paintings using AI image processing techniques. The resulting sound-responsive visuals created an empathic dialogue between Blanchard's score, the musicians and audience, producing a powerful meditation on loss, collective memory, hope and resilience.



Andrew F. Scott and Matt Unkenholz, Immersive Sound Reactive Visuals for Terence Blanchard, *A Tale of God's Will: A Requiem for Katrina*, Orpheum Theatre, New Orleans, January 18, 2025. Photo courtesy of the artist.



Andrew F. Scott, AI Assisted Programming for Physical Computing, 2024. Courtesy of the artist

Ethical Accountability in AI Practice

Critical engagement with the ethical implications of AI remains central to the studio's philosophy. Issues of authorship, data ownership, cultural representation, and algorithmic bias are explored through critiques. These conversations are not abstract; they are applied directly to everyone's project development, ensuring that technical experimentation remains grounded in cultural responsibility.

For instance, ethical questions arise when using training data that may reproduce cultural stereotypes or when generating imagery inspired by specific cultural traditions. Encouraging a proactive interrogation of these concerns, equips artists to navigate the cultural and social responsibilities inherent to AI-infused artistic practice.

AI Coding for Physical Computing and Digital Fabrication

Beyond image-making, AI plays an increasingly important role in generative code-writing for physical computing. Almost all GPTs generate scripts in Python, C++, and IDE that automate complex parametric designs in Arduino, directly connecting AI coding with material output. This extends AI's role from visual synthesis into the realms of object-making and architectural form generation.

AI-generated code supports the creation of interactive sculptures incorporating LEDs, sensors and projection mapping. These fabricated works serve as both standalone artworks and as architectural elements within larger installations. The synergy between AI and physical computing allows for scalable, repeatable, and intricate designs that push the boundaries of traditional fabrication techniques.



Andrew F. Scott, *An Afro Futurist Midjourney*, Row Projection Event, 2024. Photo: Javier Giribet-Vargas

The Studio as a Model for Future Practice

3D Studio AI practice serves not only as a laboratory for current production but as a model for future interdisciplinary creative industries. Artists emerge from these experiences not as passive users of AI tools but as critically aware collaborators, capable of directing emerging technologies toward conceptually rigorous and socially engaged outcomes.

This model embraces both artistic intentionality and technical fluency, preparing them to enter a rapidly evolving cultural landscape where AI, physical computing, digital fabrication, and immersive media converge. By embedding AI within a studio culture of care, critique, and ethical inquiry, the program offers a compelling vision of how art education can lead rather than merely adapt within the age of artificial intelligence.

As these technologies continue to evolve, the challenge facing contemporary artists will not be technological proficiency but cultivating critical agency within these hybrid systems. What ethical frameworks will guide these collaborations? How might artists shape machine learning architectures that reflect inclusive cultural narratives rather than perpetuate inherited biases? This studio model suggests that education itself may be the most potent site for preparing such future-facing cultural practitioners. ▀