

Adam Burke

phone | 540-878-0102
email | adam@allopoiesis.com

- Education**
- Massachusetts Institute of Technology | Cambridge, MA
 - Department of Architecture
 - SMArchS, Building Technology | Spring 2024
 - Thesis: *In Tension: Computational exploration of the design space of tensile network structures*
 - Advisor: Caitlin Mueller
 - Virginia Tech | Blacksburg, VA
 - School of Architecture + Design
 - Bachelor of Architecture Honors Scholar | Summer II 2016
 - Thesis: *Surface, Ambiguity, and the Creation of Virtual Space*
 - Advisor: Paola Zellner-Bassett
- Professional & Academic Experience**
- Visiting Lecturer | Cornell - Design Tech | Ithaca, NY
 - Fall 2024 - Present
 - Teaching coding for design and seminars on AI + Design
 - Research Assistant | Massachusetts Institute of Technology | Cambridge, MA
 - September 2022 - May 2024
 - Research on tensile network form finding tools
 - Project Manager and Designer | Studio Echelman | Boston, MA
 - October 2020 - September 2022, June 2024 - Present
 - Work with artist Janet Echelman to develop sculptures at the urban scale
 - Coordinate with clients, engineers, and fabricators on all project phases from concept design to installation
 - Write detailed software specifications to improve the UI and JSON sculpture description file format of a custom sculpture design and drape simulation tool
 - Develop GhPython tools to significantly reduce design iteration cycle time
 - Develop grasshopper definitions that interface with the sculpture design tool to extend its functionality and enable exploration of new sculptural forms
 - Create workflows that allow designers to quickly sketch complex cable net systems on minimal surfaces to establish initial conditions for further engineering evaluation
 - Designer | Machado Silvetti | Boston, MA
 - September 2019 - October 2020
 - Produced drawings, digital and physical models, and renders for academic and institutional clients in a highly collaborative working environment
 - Provided ad-hoc technical support for software and remote work transition
 - Studio Technical Assistant | MIT Museum Studio + Compton Gallery | Cambridge, MA
 - October 2017 - August 2019
 - Managed studio and workshop environment
 - Developed technical workshops on interactive lighting and digital media
 - Assisted in graphic design and installation of work in attached gallery
 - Tracked expenses and coordinated with external contractors
 - Helped students realize project work for elective course Vision in Art and Neuroscience
 - Adjunct Instructor | Virginia Tech | Blacksburg, VA
 - Fall 2016 - Summer Session II 2017
 - Co-taught courses for undergraduate students studying architecture, landscape architecture, interior design, and industrial design
 - Co-led students in independent research project
 - Summer Academy Teaching Assistant | Virginia Tech | Blacksburg, VA
 - Summer Session II 2016
 - Critiqued the conceptual development of student work
 - Presented tutorials and assisted students with printing, photography, and Photoshop
 - Compiled an exhibition of student work
 - Inside Architecture Instructor | Virginia Tech | Blacksburg, VA
 - June 27 - July 1, 2016
 - Worked with a group of high school students to assist in their development of a series of

- projects that explored ordering principles at a variety of scales
- Assembled an exhibition consisting of student work and photographic documentation of process work

John S. LaMonica, AIA Architect | Marshall, VA

2010 - 2012, 2014, 2015 | Summer and Winter Breaks

- Assisted in preliminary design, site documentation, estimation, and CD production for residential additions, renovations, and farm structures

Courses Taught

Qualifying Design Lab (ARCH 1116) | Virginia Tech
Summer Session II 2017

- Foundation Design Lab for students transferring into architecture, landscape architecture, interior design, or industrial design

Foundation Design Lab (ARCH 1015, 1016) | Virginia Tech
Fall 2016, Spring 2017

- An immersive, interactive learning environment focused on inquiry, experimentation, discovery, and synthesis for students studying architecture, landscape architecture, interior design, and industrial design
- The design lab develops self-reliance and self-critique, opens intellectual horizons, and challenges students to continually expand and deepen their aesthetic judgment and critical understanding
- Studies are undertaken in two and three dimensions across multiple scales

Textile Space: Design Related Media (ARCH 3514/5116) | Virginia Tech
Spring 2017

- Focused on intense exploration and discovery through fabrication with emphasis placed on the generation and manipulation of space, form, and experience with textile materials
- The material is investigated through prototyping and the production of constructs at multiple scales

Conference Proceedings

Burke, A., Lee, K., Echelman, J., Feldman, D., & Mueller, C. (2023). FDMremote: Interactive inverse design of tensile structures with differentiable FDM. Integration of Design and Fabrication - Proceedings of the International Association for Shell and Spatial Structures Annual Symposium 2023, 2187-2198.

Presentations & Workshops

FDMremote: Interactive Inverse Design of Tensile Structures With Differentiable FDM
International Association for Shell and Spatial Structures Symposium 2023
Melbourne, VIC, Australia

InTension: The computational design, engineering, and fabrication of large scale sculptural rope networks
January 23-26, 2023
4.S44 IAP Workshop | Massachusetts Institute of Technology | Cambridge, MA

Service

Stride into STEM | Lowell, MA
November 19, 2022

- Workshop introducing high school students to generative design

Digital Mentorship Collaborative (DMCO) | Virginia Tech | Blacksburg, VA
Fall 2015 - Spring 2016

- Student led digital technology workshops

Proficiencies

Rhino 7/8, Grasshopper, Python, C#, Julia, Adobe Suite, Hand Drafting, Architectural Model Making, Kuka Robotics Programming, Arduino, Dynamic Motor Control, MIG Welding, Wood/Metal Shop, CNC Milling, Fiberglass Layup, Rope Splicing, Tool Fabrication