

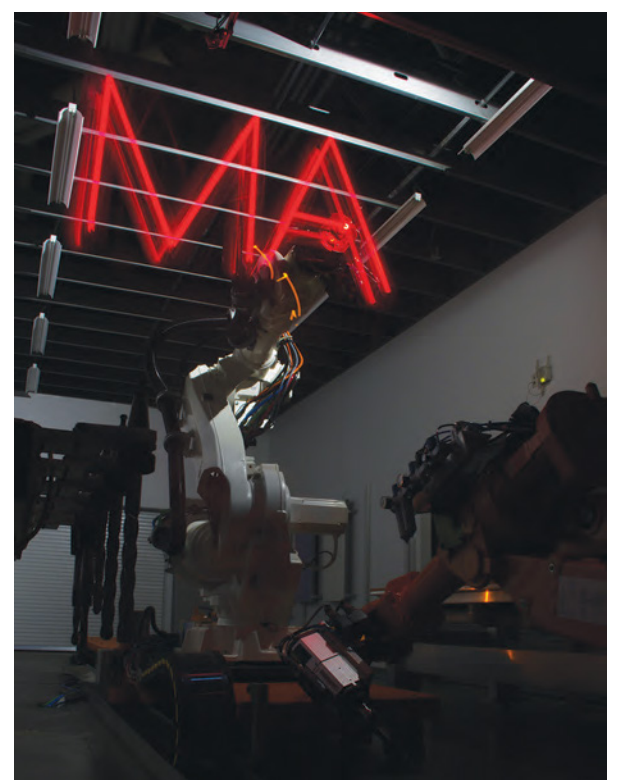


Master of Advanced Architectural Design

The Master of Advanced Architectural Design (MAAD) at Carnegie Mellon's School of Architecture is a post-professional, design-based program that engages emerging methods of computational design, simulation, data processing, and fabrication to speculate upon future modes of architectural practice, enhanced construction methods, and alternative material manifestations within the built environment.

The four-semester interdisciplinary program leverages the School of Architecture's and Carnegie Mellon's core strengths in computational design, fabrication, robotics, ecological thinking, and sustainability as vehicles for knowledge acquisition and speculation. The program focuses on the creation of new insights and new knowledge—or "research"—through the design process, or "research by design."

Carnegie Mellon University
School of Architecture
cmu.edu/architecture/maad



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Through physical investigations, computational simulation, and the design process, the program seeks to probe the technical and cultural opportunities and implications of a data-rich future in which design methodologies, construction processes, and sustainable building lifecycles are intrinsically interlaced. The goal is consciously speculative and experimental work that is deeply enmeshed with social and environmental concerns, with explicit ties to humanistic and cultural discourses, industry and contemporary practice.

MAAD's unique curriculum centers on research topics and associated experimental design studios

that are initiated by the core faculty to explore emerging themes, techniques, and cultural conditions. A rigorous set of required technical courses in the first year provides a foundation in technique and application. The experimental studios are accompanied by a diverse range of elective courses, offered internally and from across campus, as well as program-specific pro-seminars, to introduce and situate the research topics in larger contexts.

These design studios and courses help prepare students for one of the distinguishing features of the MAAD program: a year-long, independently determined, but closely mentored, design research project in the second year. This capstone project leverages the power, creativity, and speculative nature of the design process to generate new knowledge, ideas, understanding, practices, or paradigms.

The extended time frame allows adequate background research, extensive methods and tools preparation, and professional documentation of the process and results. The faculty seek advanced-level projects that will position graduates as future thought leaders in architecture and allied fields relating to advanced fabrication, material performance, construction methodologies, or academia.

CMU's emphasis on interdisciplinary learning, its implicitly computational culture, world-class robotic fabrication facilities, and a dedicated group of faculty on the cutting edge of the discipline offer unique "hands on" opportunities for experimentation and speculation in the context of a small-scale, yet globally focused, school and university.

MAAD makes extensive use of the recently established Applied Architectural Robotics Lab in the School of Architecture. This large-scale, flexible space features two industrial robot arms capable of supporting subtractive, additive and transformative processes at significant scale. This facility complements the robust resources available within the digital fabrication lab (dFAB) and serves as a hub for faculty and student collaborations.

For more information on the labs and a list of the cutting-edge research areas being explored by MAAD faculty visit cmu.edu/architecture/maad.



Jeremy Ficca, Associate Professor, Track Chair

Ficca is the founding director of the Digital Fabrication Laboratory and member of the Applied Architectural Robotics Collective in the School of Architecture. His teaching and research explore architecture's performative and poetic capacities through materially invested practices of design and prototyping that collapse the space between design and production to explore architecture's material and cultural potential.



Joshua Bard, Assistant Professor, Core Faculty

Bard's teaching and research interrogate traditional binaries in design culture (e.g. industry/craft, machine/hand, virtual/physical space, digital/analogue production), discovering new potential for contemporary digital tools in the jettisoned logics of hand and material craft. He is a member of the Applied Architectural Robotics Collective in the School of Architecture.



Dana Cupkova, Assistant Professor, Core Faculty

Cupkova's work engages the built environment at the intersection of ecology, computationally driven processes, and systems analysis. Her research is underpinned by systems thinking and focuses on adaptive methods for integration of discreet energy harvesting systems into architectural membranes that perform on multiple interlinked scales while responding to specific climactic and socio-economic conditions.



Kai Gutschow, PhD, Associate Professor, Affiliated Faculty

Gutschow is a historian of modern architecture and theory. He teaches core and elective courses in these areas, organizes the thesis program—including a seminar on research—and coordinates various foundation studios. His research focuses on the complex and controversial history of modern German architectural culture, especially the role that technology, theory, and modern media played in influencing professional and cultural developments.



Ramesh Krishnamurti, PhD, Professor, Affiliated Faculty

Krishnamurti's principal area of research is in computational design with particular emphasis on the formal, semantic and algorithmic aspects of generative construction and the development of design as computation via highly-coupled parallel explorations of form and description. Krishnamurti is an expert in computational problems in shape grammar theory and algorithms for spatial patterns.



Richard Tursky, Faculty and Assistant Director of dFAB

Tursky is a founding member of the Applied Architectural Robotics Collaborative in the School of Architecture. His teaching and research focus on synthesizing "traditional" and digital modes of making into a contemporary andragogy of design fabrication. His research focuses on the overlaps among advanced manufacturing, construction practices, and material culture, often prioritizing and contrasting the ingenuity of the tradesperson over romanticized notions of craft.

MAAD is intended for early- to mid-career professionals who already hold a professional architecture degree (B.Arch, M.Arch, or international equivalent). Qualified candidates must demonstrate a familiarity with the proposed field of study and a high level of design ability. This should be made evident through a statement of interest, a portfolio of design and research work, a transcript from the professional degree granting institution, and a CV.

The MAAD curriculum is four semesters of study, with all students expected to reside in Pittsburgh full time.

Fall First Year

- Advanced Synthesis Option Studio Pro-Seminar 1
- Computing for Creative Practices
- Parametric Modeling
- Making Intelligence

Spring First Year

- Advanced Synthesis Option Studio Pro-Seminar 2
- Research by Design Project Prep
- Introduction to Architectural Robotics
- Synthetic Flows

Fall Second Year

- Research by Design Project
- Elective
- Elective
- Teaching Fellowship (optional)

Spring Second Year

- Research by Design Project
- Elective
- Elective
- Teaching Fellowship (optional)

Admitted candidates may apply for advanced standing based on previous coursework or professional experience, eliminating the first semester, and allowing them to begin studies in the Spring term. Advanced standing is also available to qualified CMU students within the BArch program through the Advanced Masters Program (AMP).

For more information about Carnegie Mellon's School of Architecture, please visit cmu.edu/architecture.

For more information about the Master of Advanced Architectural Design (MAAD) program, application forms and procedures, and information about the generous financial support packages that may be available to qualified candidates, please visit cmu.edu/architecture/maad or email jficca@cmu.edu.