

# Yiming Jiao

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## EDUCATION

### **Carnegie Mellon University**

- ◆ Master of Science in Computational Design
- ◆ GPA: 3.87/4.00
- ◆ Thesis: Responsive Realities: Human Behavior Detection, Learning, and Response in Architectural Space. Advised by Daragh Byrne

Carnegie Mellon University  
Aug 2023 – May 2025 (Expect)

### **Syracuse University**

- ◆ Bachelor of Architecture in Architectural and Building Sciences/Technology
- ◆ Minor in Computational Science
- ◆ GPA: 3.41/4.00
- ◆ Thesis: an Alternative of Architects: a New Method for Architects to Cooperate with AI. Advised by Junho Chun
- ◆ **Dean's List Honors:** Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022
- ◆ **The SOURCE Fellowship**
- ◆ **Thesis Award Nomination**

Syracuse, NY  
Aug 2019 - May 2023

## RESEARCH EXPERIENCE

### **Research Assistant, Carnegie Mellon University**

Research Director: *Daniel Cardoso Llach*

- ◆ Assembled and set up lab equipment, including CNC machines and XTool, ensuring proper functionality and documenting operational workflows.
- ◆ Developed workflows for computational drawing and soft material fabrication using desktop machines, producing course prototypes, handouts, and exercises to support instructional materials.

Pittsburg, PA  
May 2024 – AUG 2024

### **Computational Design Lab Assistant, Carnegie Mellon University**

Lab Director: *Daniel Cardoso Llach*

- ◆ Managed and maintained lab equipment, ensuring optimal functionality and availability for research projects.
- ◆ Conducted thorough research and analysis to select equipment and tools.

Pittsburg, PA  
Aug 2023 - Present

## TEACHING EXPERIENCE

### **Teaching Assistant, Syracuse University**

Supervisor: *Marjory J Baruch (PT Instructor)*

- ◆ Served as a Teaching Assistant for intro of computer graphics, providing support in grading and evaluation of students' work.
- ◆ Hosted weekly office hours, offering personalized guidance and support to students, which facilitated a deeper understanding of course material and improved overall student performance.

Syracuse, NY  
Jan 2023 – May 2023

## PROFESSIONAL EXPERIENCE

### **Computational Architecture Researcher, AESEU**

Supervisor: *Jiashi Zhang (Deputy Director)*

- ◆ Led the construction of a UI for Grasshopper, enabling architects with limited technical background to leverage computational design tools effectively, enhancing productivity and design innovation.
- ◆ Assisted in the design computational models for architecture facade, utilizing tools including Rhino, Grasshopper, and Python to innovate design processes.

Nanjing, China  
Jun 2023 – Aug 2023

## PUBLICATION

Chenyi Shen, **Yiming Jiao**, Rushil H Sojitra. "MetaController: Sheet Material Based Flexible Game Controlling System." In UIST Adjunct '24: Adjunct Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology, Article No.: 2, Pages 1 – 3. Pittsburgh PA USA, 2024.

<https://doi-org.cmu.idm.oclc.org/10.1145/3672539.3686732>

- ◆ **Most Useful Award**

## ACADEMIC PROJECT

### **Origami Valve**

Instructor: *Garth Zeglin*

- ◆ Explored an inflating structure allowing folding and origami-like behaviors when inflated. Utilize 3D print mold to cast rubber, and microcontroller to actuate air pumping.

Carnegie Mellon University  
Jan 2024 – May 2023

## Topology Optimized Furniture Design

Instructor: *Leo Liu*

Team members: *Yiming Jiao | Isaac Martinotti | Myles Sampson*

- ◆ Construct a pipeline to utilize contemporary topology optimization and remeshing techniques to create material efficient and easily fabricable furniture.
- ◆ Simulate in grasshopper and created several fabrication prototypes.

Carnegie Mellon University

Jan 2024 – May 2023

## Human-Robot Interaction in Sand Art

Instructor: *Joshua Bard, Leo Liu*

Team members: *Anishwar | Kui Yang | Yiming*

- ◆ Collaborated with partner to design a project attempt to leverage computer vision and socket communication systems to translate human hand motions and gestures into a sand drawing.
- ◆ Mainly responsible for construct the whole pipeline from webcam → python → grasshopper → open abb → robot

Carnegie Mellon University

Nov 2023 – Dec 2023

## Enhancing Origami Learning:

*An Interactive 3D Method for Origami Tutorial Producers and Learners*

Carnegie Mellon University

Aug 2023 – Dec 2023

Supervisor: *Daniel Cardoso Llach*

- ◆ It is a project using NeRF technology to create a interactive origami tutorial method allowing origami learner learning from video, diagram, and 3d model, provide a better experience for users.
- ◆ In the project, I construct a interactive system in unreal engine 5. Including videos, images, and models, allowing users to interact with.

## ARC 409-Architectural Design VIII

Supervisor: *Joon Ma (PT Instructor)*

Syracuse University

February-May 2022

- ◆ Collaborated with partner to design a suitable outdoor science research station by studying the human, natural, and historical environment around Syracuse
- ◆ Mainly responsible for analysis and modeling on architecture, systems, and grasshopper
- ◆ Designed a research station with more advanced materials and a more profound design in the structure. For material we use BIPV as greenhouse façade; for system, we integrate both active and passive system in our project to work in different season and time of a day.

## ARC 500-Immersive Infrastructures, Roaming Around Jupiter

Supervisor: *Amber Bartosh (Associate Professor)*

Syracuse University

June-July 2020

- ◆ Improved proficiency in using XR, A-frame, and Unity, and completed projects creation (TenBallGunZone • A-Frame and Gravitation of Jupiter) independently
- ◆ In TenBallGunZone • A-Frame, employed A-frame to create interactive project. It allowing audiences to focused on moving spheres to eliminate those spheres, and by using them to leading audiences to engaged in the exploration of an architectural concept.
- ◆ In Gravitation of Jupiter, utilized Unity to construct an outer space around Jupiter to explore the possibility of architecture in space. In this project, audiences will control a space shuttle, and there are various of function in this space shuttle, such as searchlight, propeller, first/third person view, and so on. There are also some different architectural construction for audiences to explore.

## RELEVANT COURSES

- ◆ **Computation:** Machine Learning, Generative AI, Multimodal Model, Computer Vision, Computer Graphic, Data Structure, Automata and Computability, Discrete Mathematics, Formal Logic
- ◆ **Physical Computing:** Design Internet of Thing, Physical Computing, Soft Robotics, Architectural Robotics
- ◆ **Design Computation:** Computational Design, Design Internet of Thing, Generative System Design, Immersive Experience Design, Generative AI Aid Design
- ◆ **Architecture Design:** Architecture Design Studio I – VIII, Structure Design, BIM, System Design, Material Design

## SPECIALITY

- ◆ **Languages:** Mandarin (native), English (proficient), Japanese (elementary), Spanish (introductory)
- ◆ **Computer Skills:** Java, Python, C++, Haskell, generative AI, machine learning, computer graphic, computer vision
- ◆ **Software Skills:** Rhino, Grasshopper, Revit, V-ray, Enscape, Illustrator, InDesign, Photoshop, ArcGIS, unity, UE5, blender
- ◆ **Hobbies:** Origami, Creative Coding, Saxophone