

Yuan Liao

Education

University of Illinois at Urbana-Champaign (UIUC) , Illinois, USA	08/2018–Pres.
Ph.D. Candidate of Architecture, Building Science	
University of Illinois at Urbana-Champaign , Illinois, USA	08/2015–05/2018
Master of Architecture	
China Academy of Art , Shanghai, China	09/2010–07/2014
Bachelor of Arts in Architecture and Environmental Design	

Teaching and Work Experience

Teaching Assistant , UIUC, Champaign, IL	08/2019–Pres.
ARCH 536: Planning & Design of Structure Systems (Fall 2022, 2021, 2020, 2019)	
<ul style="list-style-type: none">• Taught in a Lab section of 25-45 graduate students• Guided students for their research papers and structural projects• Held office hours and answered questions• Prepared assignments and graded homework	
ARCH 435: Structural Systems & Construction Methods (Spring 2023, 2022, 2021, 2020)	
<ul style="list-style-type: none">• Taught in the Lab section of 20-30 undergraduate students• Guided students for their case studies and homework• Assisted with the lecture materials• Prepared assignments and graded homework	
ARCH 433: Design of Steel and Reinforced Concrete Structures (Fall 2023)	
<ul style="list-style-type: none">• Taught in the Lab section of 20-30 undergraduate students• Guided students for their homework• Held office hours and answered questions• Prepared assignments and graded homework	
Discover Architecture Program (Summer 2023)	
<ul style="list-style-type: none">• Guided high school students with their sketches and design works• Went on field trips and pinched in with the program.	
Research Assistant with Dr. Sudarshan Krishnan	08/2017–07/2018
<ul style="list-style-type: none">• Researched on deployable and adaptive structures• Prepared digital structural models of deployable structures• Assisted with the grant proposal titled "Integrated Design of Lightweight Rapidly Deployable Disaster-Relief Shelters" [awarded by the UIUC Research Board]	
Student worker at the School of Architecture Fabrication Shops, Champaign, IL	08/2018–01/2019
<ul style="list-style-type: none">• Laser cutter labs• Print labs	

Graduate assistant at Illinois Fire Service Institute Library, Champaign, IL 04/2017–03/2020

- Assisted in the library management and international scholar exchange programs
- Did the graphic design for posters and yearbooks
- Translated materials between Mandarin Chinese and English

Publications and Academic Experience

Journal Articles

- Liao, Yuan, Kiper, Gökhan and Krishnan, Sudarshan. “Mobility analysis of tripod scissor structures using screw theory.” *Mechanism and Machine Theory*, Elsevier. DOI: org/10.2139/ssrn.4450812 [Accepted] 08/2023
- Liao, Yuan and Krishnan, Sudarshan. "Geometric design and kinematics of spatial deployable structures using tripod-scissor units." *Structures*. vol. 38 (2022): 323-339. Elsevier. DOI: 10.1016/j.istruc.2022.01.009 02/2022
- Krishnan, Sudarshan and Liao, Yuan. "Geometric Design of Deployable Spatial Structures Made of Three-Dimensional Angulated Members." *Journal of Architectural Engineering* 26.3 (2020): 04020029. DOI: 10.1061/(ASCE)AE.1943-5568.0000416. 01/2020
- Liao, Yuan and Krishnan, Sudarshan. “A Mirrored Approach to Generate Spatial Deployable Structures using Angulated Tripod-scissor Units.” [Under review: submitted to the *Journal of Mechanisms and Robotics*, ASME in 2023] 2023

Conference Papers

- Liao, Yuan, Li, Yaxin and Krishnan, Sudarshan. “Deployability and structural performance of spatial scissor units made of zigzag bars.” *Proceedings of the IASS 2022 Symposium affiliated with APCS 2022*, Beijing, China, September 19-22, 2022 09/2022
- Liao, Yuan. “Modeling and Analysis of Tripod-scissor Deployable Structures Using Mirrored Assembly Methods.” *Proceedings of the IASS Annual Symposium 2020/21 and the 7th International Conference on Spatial Structures* Guilford, UK, August 23-28, 2021 08/2021
- Liao, Yuan. "Geometric Design of Deployable Antenna Frame Using Hyperboloid Scissor Structure." *Earth and Space 2021*, ASCE. Apr. 21-23, 2021, 1047-1058. DOI:10.1061/9780784483374.097 [Runner-up of the Best Student Paper Competition] 04/2021
- Krishnan, Sudarshan and Liao, Yuan. “Integrating Shelter Design and Disaster Education in Architectural Curriculum.” *The Annual Conference of American Society for Engineering Education (ASEE) 2019*, Tampa, Florida, June 15 - 19, 2019. 03/2019
- Liao, Yuan and Krishnan, Sudarshan. “Geometric Design and Kinematics of Curvilinear Deployable Structures.” *The International Association for Shell and* 06/2017

Honors and Awards

Teachers Ranked as Excellent/Outstanding	2021-Pres.
<i>Evaluated by the students of the School of Architecture, UIUC</i>	
<i>TA of Arch 435 (Spring 2022)</i>	
<i>TA of Arch 536 (Fall 2021)</i>	
<i>TA of Arch 435 (Spring 2021)</i>	
Conference Presentation Award	01/2022
<i>Awarded \$350 by UIUC Graduate College</i>	
Runner-up of the Best Student Paper Competition	04/2021
<i>Awarded \$200 by the American Society of Civil Engineers (ASCE), in the 2021 Earth and Space Conference,</i>	
Creative & Performing Arts Fellowship	01/2020
<i>Awarded \$4,200 by The College of Fine and Applied Arts (FAA), UIUC</i>	
University Fellowship	08/2019
<i>Awarded \$1,044 by UIUC</i>	
2019 Conference Travel Award	03/2019
<i>Awarded \$500 by UIUC Graduate College</i>	
2018 SARAs National Design Award	09/2018
<i>Awarded by the Society of American Registered Architects (SARAs)</i>	
3rd Place of The Chicago Award in Architecture Student Competition	06/2018
<i>Awarded \$300 by American Institute of Architects (AIA)</i>	
Gertrude Lempp Kerbis Fellowship for Architectural Research	04/2018
<i>Awarded \$20,000 by UIUC</i>	
2nd Prize of The Image of Research, Graduate Research Competition	03/2018
<i>Awarded \$200 by UIUC Graduate College</i>	
2nd Place of the Graduate Design Excellence Award, Fall 2017, UIUC	12/2017
2nd Place of the Graduate Design Excellence Award, Spring 2017, UIUC	07/2017
Nomination for the Graduate Design Excellence Award, Spring 2016, UIUC	05/2016
Nomination for the Earl Prize, Fall 2015, UIUC	12/2015
Innovation Scholarship	10/2013
<i>Awarded ¥1,000 by China Academy of Art</i>	
Silver Medal of 2013 Chinese Architectural Art “Young Designers Prize”	09/2013

Outstanding member, *Student Union of China Academy of Art*

12/2012

Service and Organizations

Reviewer , Journal of Asian Architecture and Building Engineering, Taylor and Francis	2023
Reviewer , ACSA112 Annual Meeting, Association of Collegiate Schools of Architecture	2023
Reviewer , The Open Civil Engineering Journal, BENTHAM Open	2022
Student Member , International Association for Shell and Spatial Structures (IASS)	2021-Pres.
Student Member , American Society of Civil Engineers (ASCE)	2021-Pres.
Member , International Association of Structures and Architecture (IASA)	2020-Pres.
Reviewer , Studio courses in the School of Architecture, UIUC	2020-Pres.
<i>Arch 474 Midterm Review (2023 Spring)</i>	
<i>Arch 371 Final Review (2022 Fall)</i>	
<i>Arch 371 Midterm Review (2020 Fall)</i>	

Skills

High Proficiency: Wolframe Mathematica, LaTeX, Grasshopper, Rhinoceros, AutoCAD, Adobe Photoshop, InDesign, SketchUp

Familiarity: MATLAB, Illustrator, 3D Max, SAP2000, Python