Yao Lu

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EDUCATION

- **University of Pennsylvania** — Philadelpahia, PA
  Ph.D. in Architecture; GPA: 3.88/4.0 — *Aug 2020 - Present*
- **Cornell University** — Ithaca, NY
  M.S. Matter Design Computation; GPA: 3.96/4.0 — *Aug 2018 - May 2020*
- **Tongji University** — Shanghai, China
  M.Arch (Hons); GPA: 4.48/5.0 — *Sep 2014 - June 2017*
- **Tongji University** — Shanghai, China
  B.Eng (Hons); GPA: 4.27/5.0 — *Sep 2010 - May 2014*

PUBLICATIONS

PEER-REVIEWED JOURNAL PAPERS

- **(In peer-review)** Yao Lu, Márton Hablicsek, Masoud Akbarzadeh. Algebraic 3D graphic statics with edge and vertex constraints: a comprehensive approach to extend the solution space for polyhedral form-Finding. Submitted for *Computer-Aided Design*, Mar 2023
- Yao Lu, Thamer Alsalem, and Masoud Akbarzadeh. A method for designing multi-layer sheet-based lightweight funicular structures. *Journal of the International Association for Shell and Spatial Structures*, 63(4):252–262, Dec 2022
- Yao Lu, Alireza Seyedahmadian, Philipp Amir Chhadeh, Matthew Cregan, Mohammad Bolhassani, Jens Schneider, Joseph Robert Yost, Gareth Brennan, and Masoud Akbarzadeh. Funicular glass bridge prototype: design optimization, fabrication, and assembly challenges. *Glass Structures Engineering*, 7(2):319–330, Aug 2022

PEER-REVIEWED CONFERENCE PAPERS

- Joseph Robert Yost, Matthew Cregan, Mohammad Bolhassani, Masoud Akbarzadeh, Yao Lu, Philipp Amir Chhadeh, and Jens Schneider. Experimental investigation of a transparent interface material for glass compression members. *Challenging Glass Conference Proceedings*, 8, Jun 2022
- Mostafa Akbari, Yao Lu, and Masoud Akbarzadeh. From design to the fabrication of shellular funicular structures. In *2021 Association for Computer Aided Design in Architecture Annual Conference, ACADIA 2021, November 3, 2021 - November 6, 2021*, Association for Computer Aided Design in Architecture Annual Conference, ACADIA 2021, Virtual, Online, 2021. ACADIA
- Yulun Liu, Yao Lu, and Masoud Akbarzadeh. Kerf bending and zipper in spatial timber tectonics: A polyhedral timber space frame system manufacturable by 3-axis cnc milling machine. In *2021 Association for Computer Aided Design in Architecture Annual Conference, ACADIA 2021, November 3, 2021 - November 6, 2021*, Association for Computer Aided Design in Architecture Annual Conference, ACADIA 2021, Virtual, Online, 2021. ACADIA
- Yao Lu, Matthew Cregan, Philipp Chhadeh, Alireza Seyedahmadian, Mohammad Bolhassani, Jens Schneider, Joseph Yost, and Masoud Akbarzadeh. All glass, compression-dominant polyhedral bridge prototype: form-finding and fabrication. In *Inspiring the Next Generation: Proceedings of the 7th International Conference on Spatial Structures and the Annual Symposium of the IASS*, page 326–336, Surrey, UK, Aug 2021
- Eda Begum Birol, Yao Lu, Colby Johnson, Christopher Hernandez, and Jenny Sabin. A method for load-responsive inhomogeneity and anisotropy in 3d lattice generation based on ellipsoid packing. In *D. Holzer, W. Nakapan, A. Globa, I. Koh (eds.), RE: Anthropocene, Design in the Age of Humans - Proceedings of the 25th CAADRIA Conference - Volume 1, Chulalongkorn University, Bangkok, Thailand, 5-6 August 2020, pp. 395-404*. CUMINCAD, 2020
- Eda Begum Birol, Yao Lu, Ege Sekkin, Colby Johnson, David Moy, Yaseen Islam, and Jenny Sabin. Polybrick 2.0: Bio-integrative load bearing structures. In *ACADIA 19:UBIQUITY AND AUTONOMY [Proceedings of the 39th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA) ISBN 978-0-578-59179-7] (The University of Texas at Austin School of Architecture, Austin, Texas 24-26 October, 2019) pp. 222-233*. CUMINCAD, 2019

ARTICLES BY OTHERS – FEATURING LU'S WORK

- Edward Keegan. R+D Award: Tortuca. *Architect*, pages 70–71, Aug 2022

Honors and Awards

- **2022** Hangai Prize
- **2022** R&D Award
- **2022** DigitalFUTURES Project Award
- **2022** Dezeen Award longlisted
- **2020** Young CAADRIA Award
- **2017** 1st Prize of Youth Design Competition for Suqian City
- **2016** 3rd Prize of International Student Urban Design Competition for Shanghai Railway Station (Group Work)
- **2015** 2nd prize of Shanghai College Students' Modern Drama Festival (Group Work)
- **2014** 1st Prize of Vertical City Asia International Competition (Group Work)
- **2014** 1st Prize of Architecture Competition of Taiwan and Mainland Students (Group Work)
- **2013** 2nd Prize of East Asia Architecture and Urban Planning Competition

Software Products

- **PolyFrame 2** A polyhedral funicular form-finding plug-in for Rhino® and Grasshopper®
  Download: www.food4rhino.com/en/app/polyframe-2
- **Earthworms** A Python scripting environment for Rhino with enhanced interactivity and flexibility
  Download: www.food4rhino.com/app/earthworms
- **PolyBrick** A load-responsive lattice generation plug-in for Grasshopper (available upon request)
  Demo: yaolu.page/polybrick_plugin

Experience

- **University of Pennsylvania** Philadelphia, PA
  Teaching Fellow *Aug 2020 - present*
  - **Course Taught** *ARCH 7326* Tech Designated Elective: Developing Computational Solutions for Design Problems, 2023 Fall, co-teach with Mostafa Akbari
  - **Course Assisted** *ARCH 602* MArch Design Studio, 2023 Spring, Prof. Masoud Akbarzadeh
  - **Course Assisted** *ARCH 602* MSAAD Design Studio, 2021 Spring, Prof. Masoud Akbarzadeh
- **JSLab, Cornell University** Ithaca, NY
  Research Assistant – Prof. Jenny Sabin *Aug 2018 - May 2020*
  - **Research Project** PolyBrick 2.0: Bio-integrated load-bearing lattice structures
  - **Research Project** SAA: Sustainable Architecture and Aesthetics
  - **Tool Developed** PolyBrick: a load-responsive lattice generation plug-in for Grasshopper
- **Cornell University** Ithaca, NY
  Teaching Assistant *Aug 2018 - May 2020*
  - **Course Assisted** *ARCH 2614/5614* Building Technology, 2018 Fall, Prof. Jonathan Ochshorn
  - **Course Assisted** *ARCH 5116* Matter Design Computation: Human-centered Adaptive Architecture in the UAE, 2019 Spring, Prof. Jenny Sabin
  - **Course Assisted** *Option Studio* The Anthropocene Style, 2019 Fall, Prof. Sarosh Anklesaria
  - **Course Assisted** *Option Studio* Cinecitta to Thin Cities, 2020 Spring, Prof. John Zissovici
- **Tongji Architectural Design Co. (TJAD)** Shanghai, China
  Junior Architect *Oct 2014 - May 2017*
  - Participated in 5 architectural projects and 1 urban design project.