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PhD Fellow in Architecture

Polyhedral Structures Laboratory, University of Pennsylvania

## Education

Doctor of Philosophy - PhD, Architecture, <a href="#">University of Pennsylvania Philadelphia, PA, US</a>	Jul 2023 - Present
Master of Science in Design - MSD, Architecture, <a href="#">University of Pennsylvania Philadelphia, PA, US</a>	Aug 2021 - Aug 2022
Bachelor of Architecture - BArch, Architecture, <a href="#">Tsinghua University Beijing, China</a>	Aug 2016 - Jun 2021
Bachelor of Arts - BA, Sociology, <a href="#">Tsinghua University Beijing, China</a>	Aug 2016 - Jun 2020

## Experience

<a href="#">Polyhedral Structures Laboratory, University of Pennsylvania Philadelphia, PA, US</a>	
- PhD Fellow, Full-Time	Jul 2023 - Present
- Research Assistant, Full-Time	Sep 2022 - Jun 2023
<a href="#">People's Architecture Office Beijing, China</a>	
- Research Intern, Full-Time	Jul 2019 - Sep 2019

## Journal Papers (Peer-reviewed)

- [J2] [Designing 3D-Printed Concrete Structures with Scaled Fabrication Models](#)  
Yefan Zhi, Teng Teng, Masoud Akbarzadeh  
Architectural Intelligence 2024
- [J1] [Research on the Villagers' Behavior Characteristics in Rural Area: Analysis Using Spatio-Temporal Data from Wi-Fi and Surveillance Video](#)  
Yefan Zhi, Ziyu Huang, Weixin Huang  
Urban, Environment, Design (UED) 2023 in Chinese, on Cover

## Conference Papers (Peer-reviewed)

- [C7] [Integrated and Tailored Thermal Insulation through Gradient Multimaterial Additive Manufacturing for Masonry Architectural Components](#)  
Teng Teng, Yefan Zhi, Masoud Akbarzadeh  
Association for Computer Aided Design in Architecture (ACADIA) Annual Conference 2024 *Calgary, Canada*
- [C6] [The Effect of Post-tensioning on the Behavior of Small-Scale 3D-Printed Concrete Beams](#)  
Damon Bolhassani, Fahimeh Yavartanoo, Javier Tapia, Masoud Akbarzadeh, Maximilian E. Ororbia, Hua Chai, Yefan Zhi, Mylene Bernard, Leon Trouset, Karolina Pajak, Blaise Waligun, Paul Kassabian  
International Association for Shell and Spatial Structures (IASS) Annual Symposia 2024 *Zurich, Switzerland*
- [C5] [Experimental and Numerical Study of a Funicular Concrete Beam Prototype](#)  
Maximilian Ororbia, Hua Chai, Yefan Zhi, Pouria Vakhshouri, Jorge Chacon, Joseph Yost, Mathias Bernhard, Fahimeh Yavartanoo, Javier Tapia, Damon Bolhassani, Mylene Bernard, Leon Trouset, Karolina Pajak, Blaise Waligun, Paul Kassabian, Masoud Akbarzadeh  
International Association for Shell and Spatial Structures (IASS) Annual Symposia 2024 *Zurich, Switzerland*
- [C4] [Design Approach for a Post-tensioned Funicular Concrete Beam](#)  
Hua Chai, Maximilian Ororbia, Yefan Zhi, Ryan Welch, Billie Faircloth, Fahimeh Yavartanoo, Damon Bolhassani, Masoud Akbarzadeh  
International Association for Shell and Spatial Structures (IASS) Annual Symposia 2024 *Zurich, Switzerland*

- [C3] **Diamanti: 3D-Printed, Post-tensioned Concrete Canopy**  
 Masoud Akbarzadeh, Hua Chai, Yefan Zhi, Maximilian E. Ororbia, Teng Teng, Mathias Bernhard, Damon Bolhassani, Fahimeh Yavartanoo, Javier Tapia, Karolina Pajak, Mylene Bernard, Leon Trouset, Paul Kassabian, Blaise Waligun  
 FABRICATE 2024 *Copenhagen, Denmark*
- [C2] **Local Optimization of Self-Supporting Shell Structures in 3D Printing: a Skeleton Method**  
 Yefan Zhi, Hua Chai, Teng Teng, Masoud Akbarzadeh  
 International Association for Shell and Spatial Structures (IASS) Annual Symposia 2023 *Melbourne, Australia*
- [C1] **Continuous Multi-Filament 3D Printing for Tension-Compression Structure Components**  
 Teng Teng, Yefan Zhi, Kun-Hao Yu, Shu Yang, Masoud Akbarzadeh  
 International Association for Shell and Spatial Structures (IASS) Annual Symposia 2023 *Melbourne, Australia*

## Preprints

- [P1] **Single-Nozzle Multi-Filament System with Active Mixing for High-Fidelity Multimaterial Additive Manufacturing**  
 Teng Teng, Yefan Zhi, Masoud Akbarzadeh

## Theses

### **A Wi-Fi and Video Data-Based Study on Spatial-Temporal Characteristics of Rural Space Behavior**

Yefan Zhi, Advised by Weixin Huang  
 Bachelor of Architecture thesis 2021, Tsinghua University *Beijing, China, in Chinese*

### **Forming Norms in a Small Community: a Sociological Study of Birdwatching**

Yefan Zhi, Advised by Yue Du  
 Bachelor of Arts in Sociology thesis 2020, Tsinghua University *Beijing, China, in Chinese*

## Software

- Ovenbird**, A cross-scale shell printing slicer and optimizer Sep 2022 - Present  
 Yefan Zhi, Hua Chai, Teng Teng, Masoud Akbarzadeh
- BibGallery**, A light, simple literature management library on Python Dec 2022 - Present  
 Yefan Zhi

## Exhibitions

- Advanced Research Projects Agency–Energy (ARPA-E) Energy Innovation Summit 2023** *Washington, DC, US* Apr 2023  
 - Technology showcase, Part of University of Pennsylvania
- Association for Computer Aided Design in Architecture (ACADIA) Conference 2022** *Philadelphia, PA, US* Oct 2022  
 - Faculty research exhibition, Part of Polyhedral Structures Laboratory  
 - Student work exhibition, Part of Master of Science in Design program
- Weitzman School Year End Show 2022, University of Pennsylvania** *Philadelphia, PA, US* May 2022  
 - Student work exhibition, Part of Master of Science in Design program