ZIHENG ZHOU

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———— EDUCATION ————

University College London (UCL)
London, UK

Master of Architecture
Sep 2022 - Dec 2023

- **Distinction Award**
- Thesis: *Cloud Domesticity: Recoding Living Spaces with Vilem Flusser's Telematics Society in the Age of the Anthropocene.*
- **Key Topics:** AI/ML, Physical-Related Simulation, Automated Planning, Systematic Control, Mechatronics

Qingdao University of Technology
Qingdao, China

Bachelor of Architecture
Sep 2017 – Jul 2022

- **GPA: 88.89/100, Rank: 2/81**
- **Key Topics:** Design, Modeling, Computer Graphics, Robotics, Web Development

———— DATA-DRIVEN RESEARCH EXPERIENCE ————

Tongji University | College of Architecture & Urban Planning
Shanghai, China

Research Assistant, Supervised by Philip. F. Yuan
July 2024 – Present

- Explored crowd flow forecasting through agent-based simulation within a gaming environment.
- Presented an assembly system for various shell structures, which is achieved through discretization into blocks.
- **Key Topics:** Automation, Data Collection, Generative Design, C#, Python

UCL | Bartlett School of Architecture
London, UK

MArch Researcher, Supervised by Tyson Hosmer at Living Architecture Lab
Sep 2022 - Dec 2023

- Focused on Agent-Based Autonomous Architecture with an adaptive lifecycle.
- Developed a force feedback system in Unity, enabling buildings to be adaptable to various terrains.
- Applied ML and GNN into decision-making process of spatial configuration and reconfiguration.
- Established User Interface for personalized spatial composition in Unity.
- Efficient exhibition setup, including 1:1 scale prototype assembly, booth construction, and website setup.
- **Key Topics:** Unity, Modeling, Computational Multi-Agent System, Adaptivity and Resilience, Force Simulation, Configuration and Reconfiguration, Woodworking skills, Raspberry Pie.

Digital Manufacture Lab
Qingdao, China

Research Assistant
Sep 2019 - June 2021

- Performed data collection and optimal experimentation towards robotic hot-wire cutting.
- Collaborated with tutor and peers to program and fabricate parametric columns composed of bricks with set angles.
- Effectively managed the 3D printing and stacked timber structure operation and optimized the process by analyzing and comparing key factors, such as temperature, material, and printing speed.
- **Key Topics:** Optimization, Fabrication, Kuka PRC.

———— PUBLICATIONS ————

- **Zhou, Z.*** Meng, M. (2024). *Environmental Perception-Driven Force Feedback Mechanism in Collective Construction: A Graph Neural Network Approach in Multi-Agent Systems.* ARCHITECTURAL INFORMATICS, Proceedings of the 30th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2025, Volume 1, 183-192.
- Wang, T., **Zhou, Z.**, Bo, T., Philip Yuan*. (2024). *Discrete Shell Structure: Intelligent Form-Finding and Fabrication of Mycelium-Based Composites.* ARCHITECTURAL INFORMATICS, Proceedings of the 30th International

Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2025, Volume 3, 357-366.

- **Zhou, Z.** (2023). *Cloud Domesticity: Recoding Living Spaces with Vilem Flusser's Telematics Society in the Age of the Anthropocene.* (Graduate Thesis Report)
- **Zhou, Z.**, Wan, D.* and Shi, X. (2020). *Digital Robotic Double-Curved Hot-Wire Cutting*. ISSN2189-1400, p595-600

DESIGN EXPERIENCE

Studio X+   London, UK
Junior Architect   Oct 2023 – June 2024
- Contributed to architectural competitions for Athletic Center, Residential, Teaching Building Design.
- Conducted studies on condition and characteristics of site, taking surrounding, drainage, and roads into account.
- High proficiency in 3D Modelling, Functional Program and Parametric Façade Design.
- **Key Topics:** Computational Design, Parametric Design, Modeling, Layout, Collaboration

TEAMWORK/ LEADERSHIP EXPERIENCE

DigitalFUTURES – ICD, University of Stuttgart   Shanghai, China
Research Collaborator   June - July 2024
- Explored innovative design workflows by leveraging generative AI and integrating voxelization, and robotic fabrication for immediate materialization.
- Applied optimization algorithms using Google OR-Tools to refine the arrangement of timber blocks within specified mesh domains, while ensuring structural stability. This culminated in the creation of a bridge structure with a 1.5 m span.
- **Key Topics:** Discretization, Configuration and Reconfiguration, Timber Fabrication, Grasshopper, Mesh AI.

DigitalFUTURES – Architectural Association   Shanghai, China
Research Collaborator   June - July 2022
- Analyzed thermal comfort within living environments by tracing comfort conditions through a series of geomorphological models, examining mountainous formations from diverse global locations.
- Simulated irradiation, illuminance, and ventilation using Grasshopper to bring architectural forms to life.
- **Key Topics:** Human-Centered Design, Comfort Simulation, Grasshopper.

SKILLS

Software
- Modeling: Rhino & Grasshopper, Revit, Maya, CAD
- Simulation & Analysis: Unity3D & C#, Python (Seaborn, Matplotlib)
- Machine Learning: GNN, Reinforcement Learning (Anaconda, Pytorch, TensorFlow)
- Graphic Design: Adobe Suite (Photoshop, Illustrator, InDesign, AfterEffects, Premiere), V-ray, Lumion
- Mechanics: Dynamixel, Raspberry Pie, 3D Printing

Language
- English: Professional Proficiency (IELTS 7.0)
- Chinese: Native
- Korean: Conversational

LINKS
- **Website:** *https://zihengzhouuuu.github.io/*
- **Portfolio:** *https://drive.google.com/file/d/1r3nYVz2IpALSEVEiIVAvCW4waU0hkt4g/view?usp=sharing*
- **Master Project:** *https://bpro2023.bartlettarchucl.com/rc3-living-architecture-lab-23/stigmergic-spaces*