

Stella Zhujing Zhang

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EDUCATION

PhD in Civil and Environmental Engineering

Sep 2022 - Present

École Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, Switzerland

Thesis: "From Komorebi to Shading: View and Light Patterns Through Shading Systems with Spatial and Temporal Dynamics"

Master of Science in Building Technology

Sep 2020 - May 2022

Massachusetts Institute of Technology (MIT) — Cambridge, MA, USA

Master of Architecture

Sep 2016 - Feb 2020

Massachusetts Institute of Technology (MIT) — Cambridge, MA, USA

Bachelor of Science in Architecture

Sep 2011 - Apr 2015

University of Michigan — Ann Arbor, MI, USA

Wallenberg Thesis Award, University Honor

EXPERIENCE

PhD Researcher

2022 - Present

EPFL Laboratory of Integrated Performance in Design (LIPID) — Lausanne, Switzerland

- Developing spatio-temporal metrics for Komorebi light patterns and exploring their relation to human responses
- Investigating shading systems for view filtering and indoor well-being

Research Assistant

2020 - 2022

MIT School of Architecture and Planning — Cambridge, MA, USA

- Researched neighborhood peak load and thermal comfort optimization
- Developed machine learning models as surrogates for physics-based simulations

Research Assistant

2014 - 2015

University of Michigan — Ann Arbor, MI, USA

- Developed robotic manipulation methods for fabric-formed architectural modeling

Architect

2015 - 2016

Myefski Architects — Evanston, IL, USA

- Contributed to residential and commercial design development

PUBLICATIONS

Zhang, Z. and Andersen, M. "A Review of the Effectiveness of Metrics for Assessing Human Responses to Biophilic Environments Involving Views, Shading, and Interior Design Elements." *Journal of Environmental Psychology*, 2025 (accepted)

Zhang, Z., Kircher, K.J., Cai, Y., Brearley, J.G., Birge, D.P., and Norford, L.K. "Mitigating peak load and heat stress under heatwaves by optimizing adjustments of fan speed and thermostat setpoint." *Journal of Building Performance Simulation*, 2023

Birge, D.P., Brearley, J., **Zhang, Z.**, and Norford, L.K. "Design of heat-resilient housing in hot-arid regions." *Energy and Buildings*, 2025

Zhang, Z. and Andersen, M. "Exploring the benefits of Komorebi light patterns: A pilot study." *CISBAT International Conference*, 2025 (accepted)

Zhang, Z. and Andersen, M. "Spatio-temporal dynamics of Komorebi light patterns." *CIE International Conference*, 2025 (accepted)

Daubmann, K.M., Foley, R., Reed, Q., and **Zhang, Z.** "RoboPinch – Robotic Manipulation of Fabric Formwork for the Creation of Plaster Architectural Models." *IASS Symposium*, 2015

TEACHING & CRITIQUE

Teaching Assistant

2022 – Present

EPFL AR-442: Comfort and architecture: sustainable strategies — Lausanne, Switzerland

- Delivered lectures and tutorials on architectural performance and environmental design principles, including Climate Studio simulations

Invited Lecturer

Spring 2022

MIT 4.421: Space-Conditioning Systems for Low-Carbon Buildings — Cambridge, MA, USA

- Delivered lecture on building energy and performance simulation with EnergyPlus, eppy, and Geomeppy scripting workflows

Invited Critic

Fall 2022

MIT D-Lab: Building Technology Laboratory (4.411J/4.412/EC.713J) — Cambridge, MA, USA

- Critiqued student designs for an education center in Sierra Leone, focusing on performance-driven architecture

KEY SKILLS

Research: Light simulation, EnergyPlus, Climate Studio, Machine learning, Statistical analysis, Image processing, Optimization, Human response assessment

Design: Rhino, Grasshopper, Digital fabrication, Adobe Creative Suite, Physical prototyping, Parametric design