

## Zichen Liang

E-Mail: liangzichen.arch@gmail.com | Tel: +86 15910567315

### EDUCATION

---

- **Beijing Jiaotong University, China**

Sep. 2020 – Jan. 2024

**M.Arch.**, Architecture in Built Environment

Thesis Topic: *A Study on Wind Environment of Effect Factors and Renewal Optimization of Traditional Residential Buildings in Dongsu Area of Beijing*

GPA: 3.7/5.0

- **Beijing University of Civil Engineering and Architecture, China**

Sep. 2016 – Jul. 2020

**B.Eng.**, Electricity Engineering in Building Electricity and Intelligence

Relevant courses include Building Electrical CAD(85); Intelligent Building Application Software Development(79);

Course Design for Building Automation System(75); with other courses showing solid academic performance.

Awards: Second Prize Scholarship for Autumn Semester 2019-2020

### PROFESSIONAL EXPERIENCE

---

**i. Project Manager** at China Architecture Design & Research Group, Beijing, China

Aug. 2020 – Apr. 2024

- Designed comprehensive building electrical and control systems for large-scale office, public, and underground spaces (over 1 million ft<sup>2</sup> combined).

- Obtained BIM certification, emphasizing interdisciplinary coordination and digital design practices.

- Applied BIM and spatial analysis and numerical environmental modeling to optimize building electrical distribution systems and energy efficiency.

**ii. Building Physics Simulation Engineer** at China Essence Studio, Beijing Jiaotong University, China Jan. 2023 – Present

- Performed CFD-based modeling for urban design, focusing on pedestrian wind comfort. This work contributed to winning a competition bid.

- Simulated ventilation for a U.S. modular housing project to support LEED environmental assessment.

- Analyzed wind environment and proposed architectural retrofitting strategies for a hospital building.

- Applied **AI algorithms** (e.g., XGBoost) to predict building energy performance and enhance occupant comfort.

### RESEARCH EXPERIENCE

---

**i. Research Assistant** at Prof. Zhongzhong Zeng's Group – Key Contributions

Sep. 2021 – Dec. 2023

- Foundational Research Engagement: Attended academic seminars and engaged in literature critique under close mentorship, laying a solid foundation in computational modeling, critical thinking, and scientific writing.

- Technical Application and Project Involvement: Applied CFD and AI-based techniques in urban microclimate and indoor ventilation studies, contributing to journal paper revisions and conducting simulations for multiple research projects.

- Independent Contribution and Leadership: Led ANSYS Fluent training for 8 junior researchers, bridged traditional architecture with CFD methodology, and delivered data-driven design recommendations for climate-adaptive planning.

**ii. Project Manager** at Beijing Courtyards Natural Ventilation Research Project

Jun. 2022 – Dec. 2023

- Field-to-Simulation Pipeline: Built a comprehensive workflow from on-site data collection to CFD simulation and comfort-oriented design feedback.

- Human-Centered Design Focus: Prioritized real occupant feedback in developing ventilation strategies, aligning thermal performance with lived experience.

- Heritage-Informed Innovation: Provided scalable, climate-sensitive retrofit solutions for traditional buildings, balancing conservation with environmental performance.

### PUBLICATIONS[Google Scholar]

---

Zhongzhong Zeng and **Zichen Liang**, *The Effect of the Front Porch and Loft on Natural Ventilation of the Main House in Beijing Courtyard*. 2023. Published. [doi.org/10.1007/978-3-031-36316-0\\_10](https://doi.org/10.1007/978-3-031-36316-0_10) (UIA 2023 CPH World Congress)

Zhongzhong Zeng, **Zichen Liang** and Zhang bo, *Natural Ventilation in Beijing Courtyard Primary Room: A Comparison of Isolated and Non-Isolated Buildings*. 2023. Published. [doi.org/10.52202/074123-0022](https://doi.org/10.52202/074123-0022) (EDRA54 Mexico City)

### LANGUAGES & PROGRAMMING SKILLS

---

**Languages:** Mandarin (native), English (C1 Academic Communication Profession).

**Data Analysis:** Python for basic machine learning applications, big data analysis for comfort prediction

**Programming language:**

Fluent Scripting: Automation using Journal files and TUI commands for CFD simulations

Data Analysis Software: SPSS, Excel, **Python**

CFD Simulation: Fluent, Meshing, **Ansys R21**, CFD-based airflow and urban microclimate assessment

Environmental Simulation: **EnergyPlus**, OpenStudio

Spatial Analysis: Rhino, Grasshopper

Field Research: On-site environmental data collection, occupant comfort surveys

**INTERPERSONAL**

---

**Team Leadership:** Led research and technical training teams

**Cross-disciplinary Collaboration:** Architects, engineers, consultants, industry panteries

**Academic Communication:** Seminar presentations, interdisciplinary coordination

**Teaching and Mentoring:** Fluent software training, research guidance

**REFERENCES**

---

i. Prof. Zhongzhong Zeng

Associate Professor, Deputy Head of the Architecture Department, Beijing Jiaotong University

[zzzeng@bjtu.edu.cn](mailto:zzzeng@bjtu.edu.cn)

Shangyuan Village 3, Haidian District, Beijing

ii. Yunfei Tao

Senior Engineer, China Architecture Design & Research

No.19 Chegongzhuang Street, Xicheng District, Beijing

[taoyf@cadg.cn](mailto:taoyf@cadg.cn)