Di Zhang

Architecture and Design Institute
Harbin Institute of Technology

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Education Background

Harbin Institute of Technology (Recommended), Master of Engineering, Architecture**(85.2/100)** 2022.9-2025.3
Harbin Institute of Technology (QS 51-100), Bachelor of Architecture, Architecture**(88.11/100)** 2018.9-2022.6

Research Experience

Master's project: Personalized adaptive façade control — Harbin

Research director, at Harbin Institute of Technology 2023.9 - 2025.3

Activities: Proposed dual deep learning models for automated glare detection (expression recognition) and occupant-centric visual field analysis. Designed zonal adaptive facade control system integrating real-time gaze tracking and glare intensity metrics. Built parametric facade prototype with Arduino motor control and validated via testing.

Outcome: Completed master dissertation draft, and resulting paper as the first author accepted in **Building Simulation (JCR Q1, IF=5.7)**. Second manuscript's abstract accepted in **CAADRIA 2026**.

LLM-enhanced Building Data Management System — Hong Kong

Remote research assistant, at HKUST 2024.12 - 2025.7

Activities: Developed a tool-augmented LLM agent framework for automating time-series data management in building systems. Engineered a rule-based methodology to generate domain-specific datasets for construction data task. Developed a multi-agent LLM framework (Planner–Coder–Verifier) for complex task decomposition, code generation, and error-tolerant execution.

Outcome: Demonstrated practical expertise in building LLM agentic systems, including task orchestration, tool augmentation, and benchmarking for real-world data automation tasks. Resulting paper as the first author accepted in **Journal of Building Engineering (JCR Q1, IF=7.6)**. Second manuscript in preparation.

Automated Layout Generation Based on LLM — Beijing

Summer camp, at AIR of Qsinghua University 2024.7 - 2024.9

Activities: Developed an architecture for LLM-based automated layou generation agents integrating spatial reasoning capabilities. Engineered a hybrid dataset generation methodology for construction layout tasks.

Outcome: Highlighting the proposed novel prompt engineering techniques for construction domain adaptation.

Teaching Experience

Architecture and Urban Design, Teaching Assistant, with Prof. Hsin-Hsien Chiu, at HIT Spring,2022

Honors and Awards

Excellent Prize, Asian Design Education Award, Asia Architecture and Urbanism Alliance **(Top30/2000+)** 2023
Excellent Prize, Asian Design Education Award, Asia Architecture and Urbanism Alliance **(Top20/2000+)** 2022
Special Grade Scholarship, Harbin Institute of Technology **(Top5%, among department)** 2023
Outstanding Student Leader, Harbin Institute of Technology **(Top3%, among school)** 2019,2021
National Encourage Scholarship, China's Ministry of Education **(Top15%, three consecutive years)** 2019-2021
Second Prize, Energy Saving and Emission Reduction Competition, Harbin Institute of Technology**(Top5%)** 2021
Second prize, Tongji University International Building Festival, Tongji University **(Top5%)** 2019
First Prize, International Collegiate Snow Structure Building Festival, Harbin Institute of Technology**(Top3%)** 2019
S Prize, Mathematical Contest in Modeling, COMAP**(Top68%)** 2019

Publications and Conference

Refereed Journal Articles

1. Yuxiao Wang, Xiaoyue Yan, Xin Zhang*, **Di Zhang**. (2025). A Multi-objective Optimization Framework for Designing Residential Green Space between Buildings Considering Outdoor Thermal Comfort, Indoor Daylight and Green View Index.*Sustainable Cities and Society*, vol. 119, pp. 106045, Feb 2025, doi: 10.1016/j.scs.2024.106045 (Top, JCR Q1, IF=10.3) *Accepted*

2. **Di Zhang**, Mingchen Li, Zhe Wang*. (2025). PV-GPT: query the PV data using natural language. *Journal of Building Engineering*,link:https://doi.org/10.1016/j.jobe.2025.114535(Top, JCR Q1, IF=7.6) *Accepted*

3. **Di Zhang**, Yuxiao Wang, Xu Min, Hsin-Hsien Chiu, Yunsong Han*. (2025). An adaptive façade control strategy based on real-time evaluation of light comfort by integrating gaze estimation and expression recognition, link: Available at SSRN 5343489. *Building Simulation* (Top, JCR Q1, IF=5.7) *Accepted*

Refereed Conference Articles

4. **Di Zhang**, Hsin-Hsien Chiu*. (2024). Application of human activity recognition in smart homes for elderly care: a literature review. *International Conference on Environment-Behavior Studies, Committee on Environment-Behavior of Architectural Society of China (CEB-ASC 2024)*, Nov 2024, link:2024/ceb.asc.11 *Accepted as oral reporter*

5. Yuheng Zhou, Hank Zhang, Yuxiao Wang*, Bo Pang, **Di Zhang**, Jianhao Chen. (2025). Real-Time Multi-Objective Optimization Control of Partitioned Electrochromic Windows Using Neural Network. *Proceedings of the 30th International Conference of the Association for Computer-Aided Architectural Design Research in Asia, CAADRIA 2025*, Vol. 3, pp. 193-202, Mar 2025, link:2025/caadria.vol3.193-202 *Accepted*

6. **Di Zhang**, Yunsong Han*. (2026). A Vision-Perception-Based Adaptive Building Facade: Research and Prototype Validation. *Proceedings of the 30th International Conference of the Association for Computer-Aided Architectural Design Research in Asia, CAADRIA 2026* *Abstract accepted*

7. Jiayue Yu, Yilei Li, Pengqi Sun, Teng Fei*, **Di Zhang**. (2025). Adaptive Multi-objective Retrofit Decision Framework For Residential Buildings In Severe Cold Regions Under Future Climatic Uncertainty *Proceedings of the 61th ISOCARP World Planning Congress, ISOCARP 2025* *Abstract accepted*

Manuscript

8. **Di Zhang**, Zhe Wang*. PV-GPT2.0: a multi-agent chat bot to query PV data. *Manuscript in preparation*

9. **Di Zhang**, Xianyue Tang*. LLM-Enhanced Semantic Graph Framework for OD Flow Prediction of Leisure Cycling in Shenzhen. *Manuscript in preparation*

Skills

Technology: **Python** (Deep learning, Computer vision, Multi-objective Optimization, Mathematical Modeling), **Ladybug & Honeybee** (Energy Simulation), **Arduino** (Automated control), **C#** (Software development)

Design: **Unity, Revit, Grasshopper & Rhino** (BIM Design), **Adobe Photoshop & Illustrator & InDesign** (Graphic Design), **Figma** (UI&UX Design)

Language: Mandarin **Chinese** (native), **English** (IELTS 7, S6, W6, R8, L7), **French** (Basic)

Employment Experience

EasyBIM module development — Chengdu

Programming Intern, at China Southwest Architectural Design and Research Institute Corp 2022.6 - 2022.8

Activities: On the in-house EasyBIM platform (developed by CSWADI Digital Innovation Center), independently built the Grid Drawing module using C# and WPF, designing the frontend UI and implementing backend logic. Integrated a graphics engine to parse and structure inputs, powering floating-panel interactions and actual graphical rendering inside the EasyBIM editor.

Outcome: Delivered automated, visualized grid generation that significantly improved modeling/output efficiency and interaction quality, providing precise references for downstream component alignment and model construction.

Workshops and Certificate

Outstanding Presentation Award, Society hub summer camp at HKUST(GZ) Summer,2024
Computational Design Workshop, Harbin Insitute of Technology Summer,2022
Unity Game Jam, Unity Community Winter,2024
University Students' Innovation and Entrepreneurship Training Program, HIT 2020

Volunteer Experience

Graphic Designer, Humanoid Companion Robot Company 2024
Exhibition Design and on-site setup, HIT Exhibition Pavilion at Nanjing Zijin Award 2023
Logo Designer, Hsin-Hsien Chiu Design Team at HIT(SZ) 2022
Host Team, Student Service Support, HIT 2018