

Shikang Wen

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Shanghai

Research Interests

- Deep learning in building/city
- Generative design
- Building performance optimization

EDUCATION EXPERIENCE

Bachelor of Architecture, Shanghai Jiao Tong University
Overall GPA: 85.7 / 100

2018.09 – 2023.06

ACADEMIC PUBLICATIONS

1. **S. Wen**, X. Hu, G. Hua, P. Xue, and D. Lai, Comparing the Performance of Four Shading Strategies Based on a Multi-Objective Genetic Algorithm: A Case Study in a University Library, **Journal of Building Engineering** (2022, Accepted, **IF: 6.4**)
2. **S. Wen**, J. Xue, G. Hua, and D. Lai, Reconstructing Fisheye Luminance Maps with a Two-step Network from a Single LDR image, 2024. (Accept, **Automation in construction**, **IF: 10.3**)
3. **S. Wen** and H. Sun, Temporal Prediction of Building Energy Consumption in Urban Areas based on Spatio-Temporal Graph Convolutional Networks: A Case Study of a Waterfront High-Density TOD City, 2023. (Manuscript in preparation)

RESEARCH EXPERIENCE

1. Optimization of Building daylight space

Mar 2021 - Jun 2022

Under the guidance of Prof. Dr. Dayi Lai, I contributed to an academic project aimed at optimizing daylight building spaces. We developed a framework to compare various shading strategies, incorporating a performance curve generated from a multi-objective genetic algorithm. This experience sharpened my research, simulation, optimization, and academic writing skills.

Contribution: Conceptualization, Data curation, Methodology, Software, Visualization, Writing – original draft.

2. Real-time glare detection

Jul 2022 - Mar 2023

An academic project, supervised by Prof. Dr. Lai and Prof. Dr. Xue, I developed a machine learning approach to reconstruct luminance maps from single-exposure images, honing my skills in generative adversarial networks (GANs) and high dynamic range (HDR) photo analysis.

Contribution: Conceptualization, Data curation, Methodology, Software, Visualization, Writing – original draft.

3. Forecasting building energy consumption in high-density urban region

Feb 2023 - Jun 2023

Under Prof. Dr. Sun's supervision in my undergraduate project, I mastered utilizing graph neural networks for quick and accurate predictions of urban building energy consumption, accounting for complex interactions like shading and airflow, alongside gaining proficiency in energy simulation tools.

Contribution: Conceptualization, Data curation, Methodology, Software, Visualization, Writing – original draft.

WORK EXPERIENCE

My previous experience in architectural design can help me determine whether the optimization of the built environment has the potential to be applied to future architectural design.

1. Shanghai Liben Architectural Design Office

Dec 2020 - Feb 2021

Intern

As an assistant architect, I supported the lead designer in shaping the school's design and independently handled the interior design of the cafeteria and dormitory during my internship.

2. East China Architectural Design and Research Institute

Dec 2020 - Feb 2021

Intern

I actively participated in two major projects: the design of the Urumqi Airport Terminal Building and the Huhehaote Airport Terminal. Under the guidance of my lead instructor, I successfully designed the corridor bridge connecting the terminal building to the parking lot.

HONORS & AWARDS

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| National Inspirational Scholarship | 2022/12 |
| Shanghai Jiao Tong University Scholarship | 2022/12 |
| National Inspirational Scholarship | 2021/12 |
| Shanghai Jiao Tong University Scholarship | 2021/12 |
| Third Prize in Shanghai Jiao Tong University Structure Competition | 2020/12 |
| Second Prize in the 2020 Li Zhengdao Science and Art Competition | 2020/11 |
| Third Prize in Shanghai Jiao Tong University Structure Competition | 2019/11 |
| First Prize in the 2019 Li Zhengdao Science and Art Competition | 2019/11 |
| Second Prize in Tongji University Wooden Structure Competition | 2019/05 |

PROFESSIONAL SERVICE

External reviewer

Journal of Building Engineering (since 2022)

PROGRAM LANGUAGES

- Python (TensorFlow / Pytorch)
- Linux (shallow)
- Grasshopper

LANGUAGES

- English
- Chinese