Enshan Chen

PhD candidate

CONTACT

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EDUCATION

PhD in Urbanism
TU Delft
2021–Sep., 2025

Master of Architecture
Tongji University
2018–2021

Bachelor of Architecture
Chongqing University
2011–2016

SKILLS

Programming: Python, C#, R, HTML+CSS, LaTex

Research skills: Statistical analysis and modeling (linear regression, spatial regression, discrete choice modeling, etc.), qualitative research methods, quantitative research methods, research design

Proficient Software:
(*Analytics*) QGIS, MassMotion, SPSS;
(*Design*) Rhino, Grasshopper, Unreal Engine; V-Ray, Enscape; ArchiCAD; Photoshop, Illustrator; Figma;

RESEARCH INTERESTS

- Incorporate AI to analyze user experience/behavior/psychology; and to model, simulate, and design complex urban+building systems
- Relevant technologies: VR, biometrics (for data collection); diffusion model (for generating synthetic data); agent-based simulation, computer vision, machine/deep learning (for simulation); Reinforcement learning, generative AI (for computational design)

RESEARCH EXPERIENCE

PhD project: Addressing overcrowding and underutilization in railway station areas: problems, assessment, and design Sep 2021 - Sep 2025

——— *Computer science related content:*

- Built an *assessment framework* for assessing ***user experience*** in station areas, based on *simulations* of pedestrian movement and visual experience; Published it in Q1 journal of *Environmental Impact Assessment Review*; and as a software plugin – *PandaAnalytics*.
- Simulated ***pedestrian movement*** using algorithms including *social forces* and *Dijkstra's* algorithm.
- Built ***machine learning models*** (incl. linear regression, neural networks of classification and regression) for pedestrian visual simulation.
- Extracting features from street images by ***image segmentation*** and manual annotation.
- Removed ***spatial autocorrelation*** in data by conducting spatial regression.
- Automated pedestrian counting, by deploying ***object detection and tracking*** algorithms – YOLO and Deepsort, utilizing the supercomputer DelftBlue.
- Others: Published two more software plugins *PandaModeling* (for using LLMs to create Rhino models) and *PandaMeasuring* (for analyzing urban blocks' density); Built *a website* to show design principles for railway stations.

——— *Social science related content*:

- Conducted on-site user observations and surveys, to understand the problems in the stations.
- Conducted expert interviews, to evaluate my design principles.
- Organized design workshop (focused group method), to apply my design principles.

Master's project: Urban form of railway station areas Sep 2018 - Sep 2021

- Extracted data of 50+ stations from Open Street Map using QGIS; analyzed the density and function diversity; published as *a journal article*.
- Analyzed visibility (Isovist) in the Utrecht Central Station area, by coding in Python and Grasshopper; published as *a journal article*.

MISCELLANEOUS

- **Working experiences**: 2016-2017, Shanghai Tianhua Architectural Design Co., architect; 2018-2021 (part-time), Tongji Architectural Design and Research Institute, urban designer. I am a licensed architect (一级注册建筑师) (China). I have won multiple awards in architectural design competitions.
- **Design portfolios** during the master's degree, and the bachelor's degree time.
- For a full list of **publications** (about design, not necessarily about computer science), see my CV.