

# Xiaomai (Mia) Hu

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Personal Website: <https://xiaomaihu.github.io/portfolio/>

Incoming GISer | Passionate about Infrastructure, Mobility, and Environmental Applications of Spatial Data

## EDUCATION

University of California at Berkeley, Master of Architecture (GPA: 3.88/4.0) Expected Dec 2025

Graduate Certificate: Applied Data Science & Geographic Information Science and Technology

Coursework: Geographic Information Science; Urban Informatics and Visualization; Principles and Techniques of Data Science; Research Design and Applications for Data and Analysis; Applied Machine Learning; Data Science for Smart Cities; CS61A; CS61B.

Huazhong University of Science and Technology, Bachelor of Architecture (GPA: 3.88/4.0) June 2022

Coursework: Measurement and Cartography; Principles of Microeconomics; Methods of Social Investigate and Research

## SKILLS

Programming: Python (Pandas, Geopandas, NumPy, Scikit-learn, TensorFlow, NetworkX), SQL, JavaScript, HTML/CSS

Geospatial Data Analysis: ArcGIS Pro (Network analysis, GTFS transit analysis, spatial statistics, raster analysis), ArcGIS Online; QGIS

Visualization & Mapping: Tableau, Python (Matplotlib, Plotly, Seaborn), Adobe Suite (PS, AI, ID), Web Mapping

## PROFESSIONAL EXPERIENCE

Geospatial Data Analyst Intern | Shanghai Tongji Urban Planning & Design Institute June 2024 - Aug 2024

- Conducted spatiotemporal & socio-economic analyses as foundational research for multiple urban planning studies.
- Managed and updated multi-source geospatial datasets to maintain database integrity and spatial accuracy.
- Built an LLM-powered code retrieval tool using Graph-RAG to enable efficient access to local planning regulations.

Research & Design Intern | Perkins Eastman Apr 2023 - July 2023

- Conducted site research and feasibility analysis for large-scale bids, synthesizing findings into presentation reports and videos.
- Led the interior design for an international school, prepared high-quality drawings sets for weekly client updates and design reviews.

Research & Design Intern | URBANUS July 2022 - Dec 2022

- Performed spatial analysis using ArcGIS to support a regional development proposal, integrating terrain and land use data.
- Supported academic publishing and competition proposals through research editing, graphics production, and layout design.

## RELEVANT PROJECT

Public Restroom Accessibility and Suitability Analysis in San Francisco | Python & ArcGIS Dec 2024

- Cleaned and processed 311 feces complain reports and analyzed seasonal and spatial patterns.
- Used Random Forest and SHAP to identify key built environment and land use factors influencing feces report density.
- Created a suitability map to propose new restroom locations based on both demand prediction and walk-time accessibility gaps.

Automated Disaster Types and Damage Levels Classifier | Python Nov 2024 - Dec 2024

- Built ML pipelines to classify natural disaster events and assess post-disaster building damage using satellite imagery dataset.
- Extracted and engineered features (e.g. LBP, Gabor, RGB histograms) to boost classification accuracy and model interpretability.

Transportation Accessibility and Impact Analysis in the Greater Bay Area, China | Python & ArcGIS Jun 2024 - Aug 2024

- Collected and cleaned multi-source traffic data (road, airport, and port), socio-economic indicators, and facility locations.
- Applied buffer and cost surface analysis to evaluate transportation coverage and spatial equity across Zhuhai City.
- Built and visualized a population projection model to assess labor force demand and infrastructure investment priorities.

Urbanization Patterns and Mechanisms in a High-Density Chinese Province | Python & ArcGIS Jun 2024 - Aug 2024

- Integrated environmental and socio-economic datasets for spatial cluster analysis and regional typology mapping.
- Used spatial statistics and policy metrics to evaluate urban coordination and inform planning recommendations.

LLM-Powered Urban Code Retrieval Tool | Python & FastAPI Jun 2024 - Aug 2024

- Developed a localized document-to-query pipeline using LLMs and knowledge graphs to retrieve urban code interpretations.
- Fine-tuned and evaluated multiple LLMs to improve accuracy.
- Built a FastAPI backend for a WeChat-integrated chatbot providing searchable Q&A for planning regulations.

Del Norte BART Station Area Affordable Housing Proposal | Interdisciplinary Studio Jan 2024 - May 2024

- Developed a mixed-income housing strategy with financial modeling, feasibility evaluation, site planning and design.
- Engaged with the City of El Cerrito and AC Transit to align design proposals with real-world planning priorities. The project received first place in the James R. Boyce Affordable Housing Studio Competition.