

YING LU – Geo Data Engineer

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📍 Munich, Germany



Summary

Master's student at Technical University of Munich with practical experience in geospatial data processing, AI-enhanced services, and spatial data integration. Skilled in building data pipelines, designing spatial metadata catalogs, and developing interactive geospatial tools and deploying services on cloud platforms such as Azure and Heroku. Experienced in building APIs and spatial models to support decision-making and data accessibility. Adept at connecting geospatial technologies with real-world applications through a strong interdisciplinary mindset.

Educational Background

Master of Science in Information Technologies for the Built Environment (ITBE) **GPA: 1.4**

Oct 2022 - Sep 2025

Technical University of Munich

- **Key Course:** Engineering Databases (SQL), Distributed and Cloud-Based Systems, GeoSensor Networks and the Internet of Things (IoT), BIM.fundamentals, Object-Oriented Programming (Python), Professional Software Engineering (C#), Geospatial Information Science (GIS).

Bachelor of Engineering in Urban and Rural Planning **GPA: 1.45 (Top 15%)**

Sep 2017 - Jun 2022

Tianjin University

Tianjin, China

Working Experience

Allianz

Working Student | Munich, Germany

Jan 2025 - Present

- Delivered a Voronoi-based location intelligence model improving geocoding accuracy by 28%, supporting insurance pricing strategies in Python.
- Developed an API to translate natural language to SQL queries using LLM frameworks, streamlining data querying for non-technical users.
- Enriched property features by integrating governmental, open-source, and proprietary data to support country-specific pricing models and strategies.
- Validated and tested Azure AI Foundry functionalities through agent-based workflows. Developed unit tests to enable the reusability and scalability of the AI package across teams.
- Collaborated cross-functionally with data scientists and product teams to align engineering deliverables with business goals.

Technical University of Munich

Research Assistant | Munich, Germany

Oct 2023 - Oct 2024

Chair of Energy Efficient and Sustainable Design and Building (ENPB)

- Created GIS-based empirical models for optimal urban tree planting based on spatial data analysis across Munich.
- Developed and deployed an interactive multi-page web application using Dash and Plotly on Heroku.
- Conducted spatial data comparisons in QGIS to validate and synchronize geospatial sources.

Oct 2023 - Mar 2024

Chair of Travel Behavior

- Calibrated the SILO urban simulation model to improve 2% forecasting accuracy for development scenarios using QGIS and Java.
- Generated public transport skims and supported the setup of a MATSim simulation pipeline, including GTFS data conversion and network integrity checks.

General Institute of Architectural Design, Planning and Research of Tianjin University

Aug 2021 - Mar 2022

Assistant Planner | Tianjin, China

- Analyzed public service facility distribution in Haicheng using ArcGIS to define 53 "15-minute life circles" according to national guidelines.
- Led the development of a comprehensive bid plan, covering the full design-to-operation cycle for a public infrastructure project.

Publications

Urban Tree Placement Analysis: A GIS-Based Approach for Identifying Suitable Planting Locations in Munich

Oct 2024

- Applied GIS-based spatial modeling to identify optimal urban tree planting zones using aboveground environmental data.

- Demonstrated data-driven urban planning methods that can be transferred to risk assessment and spatial decision-making domains.

Project

Master Thesis - Manage Digital Twins in the Construction Sector with an Extended Catalog Service.

Apr 2025 - Oct 2025

Chair of Geoinformatics

- Designed and implemented a metadata schema and open-source catalog platform to manage heterogeneous Digital Twin data.
- Applied schema design, CKAN customization, and cloud deployment to support scalable data access and cross-project collaboration.
- Aligned solution with enterprise data architecture principles, enabling reuse for spatial risk assessment and smart infrastructure planning.

Fusion Lab - Donnersbergerbrücke Interactive Design Project

Oct 2023 - Feb 2024

- Built public participation platform for urban redevelopment.

IoT-Based Urban Gardening

Apr 2023 - Sep 2023

- Monitored environmental metrics and guided urban planting decisions.

Core Competencies

Geographic Information Systems (GIS): QGIS • ArcGIS Pro • PostGIS

Programming & Data Tools: Python • C# • SQL • JavaScript • SQL • HTML/CSS • ReactJS Library

Cloud Platforms & APIs: Azure • Heroku • REST APIs

Modeling & Design: AutoCAD • Revit • Rhino/rasshopper

Language

Chinese (first language), English (C1), German (B1), French (B2)