Fengyan Zhang

20 March 1999
Geospatial & Data

Contact

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Rotterdam, The Netherlands

Education

Master's Degree

TU Delft | Geomatics
Thesis: *Snap rounding polygons with a triangulation*
Sep. 2021 – Jun. 2023

Bachelor's Degree

Southeast University (Project 985)
Geographic Information Science
Thesis: *Pedestrian travel trajectory generation based on Fréchet distance*
Sep. 2017 – Jun. 2021

Exchange Program

University of Minnesota
Geographic Information Science, transport planning and Cartography
Jul. 2019 – Aug. 2019

Technical & Soft Skills

C++ / Python / JavaScript / SQL
CGAL (Computational Geometry), GDAL (Geospatial Data), LASTools (point cloud), nlohmann-json (JSON for modern C++), CMake, Linux (Ubuntu, WSL), LaTeX, QGIS, ArcGIS, PostgreSQL/PostGIS,
English (working proficiency), Dutch (beginner), German (beginner)

Passions

Snowboarding, piano, jogging
reading, writing

Summary

Former Research Assistant at RWTH Aachen and MSc graduate in Geomatics from TU Delft. I work with software and data systems, with experience in Python and C++ for building data processing pipelines, geometric algorithms, and distributed sensor-based applications. My work has involved system integration, real-time data ingestion, and applied research in spatial and urban contexts. I enjoy working with a structured and pragmatic approach to problem-solving, focusing on reliability, clarity, and maintainability. I am interested in roles where engineering, data, and domain knowledge come together in real-world systems.

Professional Experience – Research Assistant

Geoinformation and Geodetic Institute, RWTH Aachen | Nov. 2023 – Oct. 2025

- Developed and maintained interfaces for real-time data transmission and visualization via OGC SensorThings API and MQTT protocol; authored a conference paper: *Real-Time Sensor Data Integration for BIM-Based Hydraulic Structure*.
- Integrated monitoring data into a Building Information Modeling (BIM) environment using linked data models.
- Collaborated with industry partners to refine workflows and optimize software extensions for hydraulic structure monitoring.
- Integrated OGC API – Processes into web portals.
- Supported teaching activities in Distributed & Web GIS and Geodatabase courses, prepared exam questions, exercises, and solutions.

Relevant Projects (Public Access)

- snapoly: Algorithm implementation of my master thesis: *Snap rounding polygons with a triangulation*.
- CityJSON: Implementation of calculating building volumes, number of building floors, area, and orientation of roof surfaces.
- geoCFD: Preprocess the geometry for CFD simulation - remove internal faces between adjacent buildings. This is developed as the Nef Polyhedra method for the MSc Geomatics Synthesis Project *facesBgone*.
- BIMConvertToGeo: Convert a building information modeling (BIM) model, specifically an IFC file, into a CityJSON file.
- Reconstruct 3D Geometry: 3D geometry reconstruction based on the open-source project - Easy3D.
- LCP Runoff modeling: Implementation of the least cost path algorithm (LCP) for calculating flow direction and flow accumulation.
- Spatial interpolation: Implementation of Nearest Neighbor (NN) / Inverse Distance Weighting (IDW) / Triangulated Irregular Network (TIN) and Laplace Interpolation.

Extracurricular

Operation Management Department Intern, Radiance Group. Jul. – Sep. 2020.