

FENGYAN ZHANG

MSc Geomatics student from TU Delft.

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Delft 2628PZ, Netherlands

zfengyan



About Me

Date of birth: March 20, 1999.

A motivated and dedicated master's graduate in geomatics with a good foundation in programming and modeling skills, including C++, Python, 3D modeling, etc. Possessing a solid foundation in leveraging these skills to develop efficient algorithms and software solutions tailored to geospatial applications. Additionally, adept at utilizing advanced 3D modeling techniques to visualize and analyze various data effectively. With a keen enthusiasm for continuous learning and professional development, I am eager to leverage my academic background and practical skills in the industry and I am excited about the opportunity to contribute to innovative projects and collaborate with interdisciplinary teams to tackle complex geospatial challenges.

MAIN PROJECTS

- **BIMConvertToGeo**: Convert a building information modeling (BIM) model, specifically an industry foundation classes (IFC) file, into a CityJSON file.
- **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**.
- **Reconstruct 3D Geometry**: 3D geometry reconstruction based on the open-source project - **Easy3D**.
- **Spatial interpolation**: Implementation of Nearest Neighbor (NN) / Inverse Distance Weighting (IDW) / Triangulated Irregular Network (TIN) and Laplace interpolation.
- **LCP Runoff modeling**: Implementation of the least cost path algorithm (LCP) for calculating flow direction and flow accumulation.
- **Camera Calibration**: Implementation of performing camera calibration based on the open-source project - **Easy3D**.
- **Kmeans clustering**: Implementation of K-means clustering classification based on the point cloud data.
- **Ground Filtering**: Implementation of Cloth Simulation Filter algorithm (also with verlet integration) based on the point cloud data.
- **CityJSON**: Implementation of calculating building volumes, number of building floors, area, and orientation of roof surfaces based on CityJSON files.
- **Generalized Map**: A possible implementation of generalized map.

EXTRACURRICULAR EXPERIENCES

Operation Management Department Intern

Northwest Regional Corporation, Radiance Group

Jul. 2020 – Sep. 2020

Xi'an, China

- Participated in the supervision and coordination of each section of projects.
- Was responsible for the statistics of the company's land reserves, resources, fiscal year plan and other related information.
- Followed up on the main rate of progress of major projects, analyzed risks, completed, and submitted the final reports.

WORK EXPERIENCE

Research assistant

Chair of Building Informatics and Geoinformation Systems and Geodetic Institute (gia), RWTH Aachen

Nov 2023 – present Aachen, Germany

EDUCATION

MSc in Geomatics

Technische Universiteit Delft

Sep 2021 – Jun 2023 Delft, Netherlands

Exchange student in Geographic Information Science and Cartography

University of Minnesota

Jul 2019 – Aug 2019 Minneapolis, USA

BSc in Geographic Information Science

Southeast University

Sep 2017 – Jun 2021 Nanjing, China

High School

The First Senior High School of Jinchuan Company

Sep 2014 – Jun 2017 Gansu, China

Gaokao: 601/750

STRENGTHS

Programming skills

Skillful in C++ and Python; familiar with Java, JavaScript, Vue.js, Nuxt.js, HTML and SQL. Experienced in using CGAL(The Computational Geometry Algorithms Library), GDAL(Geospatial Data Abstraction Library), and other widely-used libraries such as LASTools (for point cloud), nlohmann-json (JSON for Modern C++), etc. Experienced with making cross-platform projects, such as programming under Windows Subsystem for Linux (WSL) using CMake.

Trnasport Office Specialist Intern

Gansu Jinchang Transportation Authority

📅 Mar. 2019 – Jun. 2019 📍 Jinchang, China

- Wrote daily materials, concluded, and analyzed survey data.
- Coordinated with other government departments, including Land Resources Bureau and Forestry Bureau, and arranged meetings.
- Assisted the department to organize the large speech competition “Building Civilized Jinchang”, and wrote relevant scripts.

Project Manager - Research on Travel Safety at University Campuses in Nanjing

Southeast University

📅 Sept. 2018 – Dec. 2019 📍 Nanjing, China

- Compared and analyzed traffic management mode in various university campuses in Nanjing.
- Was responsible for the external contacts and communicated with campus security offices in universities in Nanjing.
- Collected information about campus traffic management rules.
- Designed survey questionnaires and distributed them in other universities.
- Processed and analyzed collected data using Python, and drew significant conclusions according to the analysis.
- Provided feasible suggestions about campus traffic management for other universities based on the results.

Project Manager - Survey and Analysis of Passenger Flow on Nanjing Metro Lines

Southeast University

📅 Sept. 2018 – Dec. 2019 📍 Nanjing, China

- Designed investigation questionnaires and collected relevant data.
- Communicated with Nanjing Metro Corporation to obtain highly accurate passenger flow volume data.
- Analyzed and summarized various data using Python and wrote the research report, and presented the final presentation.

Student Volunteer

Young Volunteers Association, School of Economics & Management, Southeast University

📅 Mar. 2019 – Jul. 2019 📍 Nanjing, China

- Led the volunteer group to regularly conduct classroom communication in Nanjing Chengxian Primary School.
- Planned and presented the speech content, and communicated the speech time and approach with staff at the primary school.
- Awarded as the “Outstanding Volunteer”.

Student Union Member

Students' Union, School of Transportation, Southeast University

📅 Sep. 2017 – Jul. 2018 📍 Nanjing, China

- Was responsible for the statistics and management of event materials and ensured the materials were in place.
- Reviewed the event process and summarized problems after events.
- Awarded as the “Student Union Outstanding Officer”.

Computer software

Visual Studio, Visual Studio Code, CLion, QGIS, ArcGIS, Google Earth Engine (online), MeshLab, CloudCompare, PostgreSQL, etc.

Communication skills

Fluent and skilful in **English**, Native in **Chinese**, **Dutch** and **German** beginner.

REFEREES

Hugo Ledoux (Associate Professor)

@ 3D geoinformation research group

✉ h.ledoux@tudelft.nl

BG.West.550

Faculty of Architecture and the Built Environment

Delft University of Technology

Julianalaan 134, Delft 2628BL, Netherlands

Liangliang Nan (Associate Professor)

@ 3D geoinformation research group

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Ken Arroyo Ohori (Lecturer and Researcher)

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BG.West.550

Faculty of Architecture and the Built Environment

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QUALITIES

Committed

Diligent

self-motivated

Teamwork

Enthusiasm

Stress-resistance

HOBBIES

Piano

Sports

Reading

Music

Writing novels