Zimo Wang

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EDUCATION

Zhejiang University — Hangzhou, China
Bachelor of Science - Geographical Information Science; GPA: 3.97/4.00, Rank 1st — *Sep 2019 - Present*

Courses: C Programming, Data Structures, Databases, Spatial Data Analysis, Computer Graphics, Lectures on Programming, RS Digital Image Processing, GIS Application, Scientific Computing, Geographic Information System, GIS Programming.

Zhejiang University — Hangzhou, China
Double Major - Statistics; Minor - Computer Science and Technology — *Sep 2019 - Present*

Statistics Courses: Mathematical Analysis (I, II, and III), Advanced Algebra, Mathematical Statistics, Probability Theory, Stochastic Processes, Regression Analysis, Ordinary Differential Equations, Computer Simulation, Complex Variable Functions, Time Series.
Computer Science and Technology Courses: Advanced Data Structure & Algorithm Analysis, Object-Oriented Programming, Advances in Computer Graphics, JAVA Programming, Artificial Intelligence, Data Mining, Operating Systems.

SKILLS SUMMARY

- **Programming Languages:**   C/C++, JAVA, Python (numpy, pandas, scikit-learn, tensorflow, pytorch), SQL, LaTex
- **Technical**:   Matlab, ArcGIS, Git, Linux, PostgreSQL

INTERNSHIP

IDEA Lab of University of Illinois at Urbana-Champaign — Remote
Student Summer Research — *June 2022 - Present*
- **Spatial-Temporal Data Mining - Supervised by Prof. Hanghang Tong**: Predicted the traffic flow pattern.
- **Transformer Modeling with PyTorch**: Integrated cutting-edge models including Informer as well as Autoformer, and tried to learn graph information implicitly and dynamically without prior.

State Key Laboratory of CAD & CG of Zhejiang University — On-Site
Student Research Assistant (Part-Time) — *Aug 2021 - Aug 2022*
- **Depth Estimation - Supervised by Prof. Zhaopeng Cui**: Reconstructed depth with RGB and polarization stereo.

Zhejiang Key Laboratory of Resources and Environmental Information System — On-site
Student Research Assistant (Part-Time) — *Mar 2021 - Apr 2022*
- **A House Price Valuation Model Based on Geographic Neural Network Weighted Regression - Supervised by Prof. Sensen Wu and Zhenhong Du**: Implemented a case study of Shenzhen and achieved state-of-the-art.

PROJECTS

- **NYC Spatial Partitioning Index Visualization and Parallel Acceleration**: A C++ course project of Advances in Computer Graphics. It is a reappearance of the paper *Real-Time KD-Tree Construction on Graphics Hardware* on SIGGRAPH Asia 2008. As a combination of KD-Tree data structure, parallel algorithm, CG and GIS application, I finished it alone with about 3k lines of code, and then received 100/100 from the course Advances in Computer Graphics, which is taught and evaluated by Prof. Kun Zhou, a top-level expert in CG realm.

- **3D Maze Game**: A C++ course project of Computer Graphics. It is built by OpenGL framework with GLAD library, and can render static and dynamic 3D objects with different kinds of shaders and flexible illumination models.

- **Mini Shakespeare Search Engine**: A C++ course project of Advanced Data Structure & Algorithm Analysis. As the leader, I instructed the other group members to implement stop filter, sentence query threshold, and an inverted file index with B+ tree structures. For large datasets, our B+ tree index has also been extended to the term-partitioned one.

- **Nonlinear Equations Solver for Camera Calibration**: A C course project of Contemporary Surveying. It is about 600 lines of code and applies numerical differentiation method and Newton method to solve the equations. All of the basic matrix operators are implemented by myself independently, including inverse, multiplication and linear equation solver. Actually, I used my library for 3 different tasks including space resection, camera relative orientation, and absolute orientation.

PUBLICATIONS

- **House Price Valuation Model Based on Geographically Neural Network Weighted Regression: The Case Study of Shenzhen, China**: As the first author, I published a paper on ISPRS International Journal of Geo-Information. (August 2022)

- **DPS-Net: Deep Polarimetric Stereo Depth Estimation**: As the third author, I generated the visual trainset, designed illusions, collected stereo data, ran the baseline, and wrote related work section of the paper. (Under review)

HONORS AND AWARDS

- National Scholarship 2019-2020, Ministry of Education of P.R. China
- Zhejiang University Scholarship 2019-2020 - First Prize
- National Geographical Information Science Application Competition 2021 - Outstanding Winner
- Chinese National Astronomy Olympiad 2018 - Silver Award