Yuanbang Liu

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Education

BS **South China University of Technology**, Major: Software Engineering, Minor: Business Administration — Sep 2021 to Present

- GPA: 3.8/4.0 (Transcript, Certificate)
- **Coursework:** Advanced C++ Programming(4.0), Machine Learning(4.0), Data Mining(4.0), Engineering Mathematical Analysis(I 3.7, II 4.0), Linear Algebra(3.7), Probability Theory(4.0)

Awards

Provincial Third Prize, China Undergraduate Mathematical Contest in Modeling — Sep 2022

- Developed a model to perform inductive classification for small-batch ore feature data.
- Participated as a team captain.

Bronze Medal, The 2022 ICPC Asia Shenyang Regional Contest — Nov 2022

- Used C++ and Python.

Provincial Second Prize, China Undergraduate Mathematical Contest in Modeling — Sep 2023

- Developed a model for automated layout of efficient heliostat fields in solar power plants.
- Participated as a team captain.

Third Prize, CCF Big Data & Computing Intelligence Contest — Dec 2023

- Constructed a predictive model for urban population estimation based on Long Short-Term Memory (LSTM).

Research Experience

TexiGIS: Visualizing the mobility data of taxis within a city. — Aug 2023

- Using the Vue2 and Flask frameworks, a system was developed within one week to display the trajectory of taxi operations in Hangzhou City.
- The system utilizes color coding to represent the traffic volume and vehicle speed on different road segments. By combining a heat map with a traffic map, it dynamically showcases the vehicle density in various regions at different time intervals.

TraSculptor: Interactive Decision-Making for Road Traffic Planning — Nov 2023 to Mar 2024

- Supervised by Professor Zikun Deng, we developed an interactive web-based road network editing system called TraSculptor.
- We designed a set of user interactions that enables road network modifications directly on the map, corresponding to real-world traffic planning countermeasures.
- We design the comparison view that facilitates the comparison among multiple road network states during the iterative planning process.
- Submitted to IEEE Vis 2024.

Technologies

Programming Languages: C++, Java, Python, Web(Vue, Flask)