Johnny Yutian Zhang

Shenzhen, China | zhangyt85@mail2.sysu.edu.cn | https://thunderzh99.github.io/

Short Bio.

Yutian Zhang is a graduate student pursuing an M.S. degree in the School of Intelligent Systems Engineering at Sun Yat-sen University, under the supervision by Prof. Haipeng Zeng. His research interests include visual analytics, interpretable artificial intelligence, and urban big data.

Education

Sun Yat-sen University, Postgraduate   Sept 2022 – Present
- GPA: 3.96/5.0 (Rank 1/18)
- **Research Interests:** Visual Analytics, Interpretable Artificial Intelligence, Urban Big Data

Sun Yat-sen University, B.S. in Traffic Engineering   Sept 2018 – June 2022
- GPA: 3.98/5.0 (Rank 5/69)
- **Coursework:** Traffic Big Data, Machine Learning, Internet of Vehicles, Image Processing and Computer Vision

Publications

CSLens: Towards Better Deploying Charging Stations via Visual Analytics ——   July 2024
A Coupled Networks Perspective

Yutian Zhang, Liwen Xu, Shaocong Tao, Quanxue Guan, Quan Li, Haipeng Zeng

IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2024)

MARLens: Understanding Multi-agent Reinforcement Learning for Traffic   April 2024
Signal Control via Visual Analytics

Yutian Zhang, Guohong Zheng, Zhiyuan Liu, Quan Li, Haipeng Zeng

IEEE Transactions on Visualization and Computer Graphics

EVCSeer: An Exploratory Study on Electric Vehicle Charging Stations   April 2024
Utilization via Visual Analytics

Yutian Zhang, Shuxian Gu, Quan Li, Haipeng Zeng

IEEE Computer Graphics and Applications

Projects

Human-Controllable Image Generation in Autonomous Driving   Sept 2023 - Present
- Developed an interactive interface to assist users in generating test samples for autonomous driving, including extreme weather, light conditions and adding objects

Charging Station Location Problem based on Visual Analytics   Jan 2022 - Present
- Applied data mining and machine learning techniques to analyze key factors, such as traffic hotspots, points of interest and charging price
- Developed visual analytics systems to support the decision-making process for charging station deployment
- One prototype system won 3rd prize in the 17th National Competition of Transport Science and Technology for Students (July 2022)

Interpretability of Reinforcement-learning-based Traffic Signal Control   Jan 2023 - April 2024
- Utilized novel visual design and model-agnostic algorithms to understand agents' policies and reveal the decision-making process
- Developed visual analytics systems to explore reinforcement-learning-based traffic signal control models
- One prototype system won 2rd prize in the 18th National Competition of Transport Science and Technology for Students (July 2023)

ChinaVis 2023 Visual Analytics Challenge   May 2023 - June 2023
- Designed and developed a visual analytics system to explore the spatial-temporal patterns of a road network
- Tools Used: Python, QGIS, D3.js, Vue.js

Cellular Data Analysis   Oct 2022 - Dec 2022
- Preprocessed raw cellular data and analyzed city-level mobility
- Tools Used: Python

Honors and Awards

2021: National Scholarship, Ministry of Education of China

2018 - 2021 Excellent Student Scholarship, Sun Yat-sen University

2019 - 2021 Traffic Education Scholarship, School of Intelligent Systems Engineering, Sun Yat-sen University

Invited Talk

CSLens: Towards Better Deploying Charging Stations via Visual Analytics ——   Oct 2024
A Coupled Networks Perspective

the 2024 IEEE Visualization and Visual Analytics Conference (VIS 2024)

Tampa, Florida, US

CSLens: Towards Better Deploying Charging Stations via Visual Analytics ——   July 2024
A Coupled Networks Perspective

the 11th China Visualizationand Visual Analytics Conference (ChinaVis 2024)

Hong Kong, China

MARLens: Understanding Multi-agent Reinforcement Learning for Traffic   May 2024
Signal Control via Visual Analytics

GAMES Webinar Vol.332: Human-AI Collaboration & Forum for Graduate Student Growth

Online

Teaching Assistant Experience

Visualization and Visual Analytics   Feb 2024 - July 2024
- Prepared code examples for D3.js and web development, designed assignments and projects

Software Engineering   Feb 2023 - July 2023
- Refined course materials and designed quizzes

Skills

Coding: Python, JavaScript, SQL

Data Analysis: Pandas, Matplotlib, Numpy

Machine Learning: Scikit-learn, PyTorch

Web Development/Design: D3.js, Vue.js, Bootstrap, Flask/Django, Figma

Other: Photography, Piano