Zichuan Liu

☺ Aspiring Data Scientist

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🎓 Education

Nanjing University Master of Electronic Engineering 09/2022 - 06/2025

- I received a First-Class School Scholarship in 2022 & 2023, Grade Point Average (GPA): 89.38/100.
- My researchs focus on Multi-Agent Reinforcement Learning, supervised by Prof. Chunlin Chen.

Wuhan University of Technology Bachelor of Software Engineering 09/2018 - 06/2022

- GPA: 90.71/100, Overall Ranking: 2/279, Grade Ranking: 15/279, and Passed CET-6.
- I won many honours, including First-Class Scholarship, Outstanding Student, and Top-up Scholarship.
- I was a research assistant in Spatial-Temporal Data Mining areas, advised by A/Prof. Rui Zhang.

♡ RESEARCH INTERESTS

My research interests focus on time-series data mining, reinforcement learning, and explainable artificial intelligence, especially with applications in multiple sequences, offline models, and dynamic environments, allowing them to explicitly adapt to the non-stationary task distributions in real-world.

Noting that I've recently been *getting started* with LLMs, and am interested in Understanding Your LLM-Agent!

📖 Publications AND SUBMISSIONS

Accepted Paper (*ICML**1, *ICLR**1, *etc.*)

- **Zichuan Liu**, Yingying Zhang, Tianchun Wang, Zefan Wang, Dongsheng Luo, Mengnan Du, Min Wu, Yi Wang, Chunlin Chen, Lunting Fan, Qingsong Wen. Explaining Time Series via Contrastive and Locally Sparse Perturbations. In *International Conference on Learning Representations (ICLR'24)*, Vienna, Austria, 2024: 1-21. (CCF-A)
- **Zichuan Liu**, Yuanyang Zhu, Chunlin Chen. NA^2Q: Neural Attention Additive Model for Interpretable Multi-Agent Q-Learing. In *International Conference on Machine Learning (ICML'23)*, Honolulu, Hawaii, USA, 2023: 22539-22558. (CCF-A)
- **Zichuan Liu**, Rui Zhang, Chen Wang, Zhu Xiao, Hongbo Jiang. Spatial-Temporal Conv-sequence Learning with Accident Encoding for Traffic Flow Prediction. *IEEE Transactions on Network Science and Engineering (TNSE)*, 2022, 9(3): 1765-1775. (SCI, JCR-Q1, IF=6.6)
- **Zichuan Liu**, Zhaoyang Wu, Meng Wang, Rui Zhang. Multi-View Spatial-Temporal Model for Travel Time Estimation. In *International Conference on Advances in Geographic Information Systems (SIGSPATIAL'21)*, Beijing, China, 2021: 646–649. (CCF-C)

Under Review

- One paper regarding sampling efficiency was submitted to IEEE COG'24.
- **Three papers** were submitted to ICML'24 (one of the first author)!
- Zefan Wang, **Zichuan Liu**, Yingying Zhang, Aoxiao Zhong, Lunting Fan, Lingfei Wu, Qingsong Wen. RCAgent: Cloud Root Cause Analysis by Autonomous Agents with Tool-Augmented Large Language Models. *arXiv preprint* arXiv:2310.16340, 2023. (Submitted to VLDB'24)
- **Zichuan Liu**, Yuanyang Zhu, Zhi Wang, Yang Gao, Chunlin Chen. MIXRTs: Toward Interpretable Multi-Agent Reinforcement Learning via Mixing Recurrent Soft Decision Trees. *arXiv preprint* arXiv:2209.07225, 2022. (Rejected by NeurIPS'22, Ratings 5/6/6/8, Submitted to TPAMI)
- Yuanyang Zhu, Qingpeng Zhao, **Zichuan Liu**, Zhi Wang, Chunlin Chen. Boosting Value Decomposition via Unit-Wise Attentive State Representation for Cooperative Multi-Agent Reinforcement Learning. *arXiv preprint* arXiv:2305.07182, 2023. (Rejected by IJCAI'23, Ratings 4/5/6, Submitted to TNNLS brief paper)

💼 INTERNSHIPS

Microsoft   Microsoft Research Asia   Reseach Intern   11/2023 - Present

- I am currently as a research intern at MSRA Machine Learning Area, where I am advised by Dr. Lei Song and managed by Dr. Jiang Bian.
- Three new papers were submitted to ICML'24, one of which I was the first author. Another paper has been submitted to IEEE COG'24.
- I'm working on a project to prevent jailbreaks of large language models.

Alibaba Group   DAMO & Alibaba Cloud   Reseach Intern   06/2023 - 11/2023

- I was a research intern in XAI for Time Series and AIOps, where I was advised by Dr. Qingsong Wen at DAMO Academy (Seattle), also worked close with Dr. Tianchun Wang at Pennsylvania State University and A/Prof. Dongsheng Luo at Florida International University.
- I submitted a paper to the *International Conference on Learning Representations* on expaining time series predictions using contrastive and locally sparse perturbations (ContraLSP), which was accepted.
- I have involved in writing a paper on tool-augmented LLMs for cloud root cause analysis, which has been submitted to the *International Conference on Very Large Data Bases*.

Wuhan Token Group   Tech. Dept.   Android Engineer   03/2019 - 11/2019

- As a core member of the class schedule client, I was independently responsible for the development of seven pages, including schedule service, dialog interface, url redirection, and related interfaces, etc. The daily activity number of its product reached 20000+.
- A personal github project with a maximum of 112 stars and 33 forks.

🏆 COMPETITIONS

🏆 **Kaggle**: Kaggle Expert, Highest Ranking: 757th/213,123

- *2019 Data Science Bowl* **TOP 1% & UP2ND, DSB Student Award 3,000$**, 01/2020
- *University of Liverpool - Ion Switching* **TOP 1% & SOLO Silver**, 04/2020
- *M5 Forecasting - Uncertainty* **TOP 4% & Silver**, 07/2020

🏆 **Data Mining**:

- *ACM SIGSPATIAL 2021 GISCUP* **TOP 4th/1295, Second Runner-up, Award 2,500$**, 08/2021
- *China Collegiate Computing Contest* **TOP 2nd/4133, Award 10,000￥**, 08/2020
- *CCF Big Data & Computing Intelligence Contest* **TOP 1% & 3rd/2703**, 12/2019

🏆 **Mathematica Contest**:

- *China Undergraduate Mathematical Contest in Modeling* (CUMCM 2020) **National Second Prize**, 10/2020
- *Mathematica Contest in Modeling* (MCM 2020) **Honorable Mention**, 03/2020

👁 SERVICES

- Reviewer, IEEE Transactions on Network Science and Engineering (TNSE), 2022.
- External reviewer, International Conference on Artificial Neural Networks (ICANN), 2022.
- External reviewer, IEEE Transactions on Computational Social Systems (TCSS), 2022.

🎮 MISCELLANEOUS

- I love first person shooter (FPS) games like Overwatch, and my goal is to combine sequence modeling with offline reinforcement learing to create a self-aware AI agent for FPS cheats.
- Swimming is my primary form of exercise. I once achieved sixth place in the freestyle event at the university swimming competition in Hubei Province, and also successfully swam across the Yangtze River in 2019.
- I'm working hard to prepare for the IELTS exam, but my spoken English is not very good. I'll do my best!
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