Mr. Yuxiao Ye

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Research Interests: Deep Reinforcement Learning; LLM Agent; Text-to-SQL

EDUCATION

Beijing Institute of Technology   (985 & 211 project university)   **2022.09-Present**
MSc in Computer Science and Technology   Supervisor: Prof. Chi (Harold) Liu, *FIET, FBCS*   GPA: 3.6/4.0
Core Courses: Language Information Processing, Artificial Intelligence, Statistical Pattern Recognition, Information Retrieval
Beijing Institute of Technology   **2018.09-2022.06**
BSc in Computer Science and Technology   Average Score: 88.6   GPA: 3.6/4.0 (rank: 7/56)
Core Courses: Mathematical Analysis (93/100), Probability and Statistics (96/100), Algorithm Design and Analysis (95/100),
Methods and Practice of Program Design (98/100), Data Structure (92/100), C Programming (94/100)

PUBLICATIONS

- **[CCF A - ICDE]** **Yuxiao Ye**, Chi Harold Liu, et al., "Exploring both Individuality and Cooperation for Air-Ground Spatial Crowdsourcing by Multi-Agent Deep Reinforcement Learning," in *IEEE ICDE*, 2023.
- **[CCF A - JSAC]** **Yuxiao Ye***, Hao Wang*, Chi Harold Liu, et al., "QoI-Aware Mobile Crowdsensing for Metaverse by Multi-Agent Deep Reinforcement Learning," in *IEEE Journal on Selected Areas in Communications (JSAC)*, 2024.
- **[CCF A - INFOCOM]** Zipeng Dai, Chi Harold Liu, **Yuxiao Ye**, et al., "AoI-minimal UAV Crowdsensing by Model-based Graph Convolutional Reinforcement Learning," in *IEEE INFOCOM*, 2022.
- **Yuxiao Ye***, Yuxuan Tian*, et al., "AoI-aware Air-Ground Mobile Crowdsensing by Multi-Agent Curriculum Learning with Collaborative Observation Augmentation," Submitted to *IEEE INFOCOM*, 2024.
- Bin Zhang*, **Yuxiao Ye***, et al., "SQLBench: A Comprehensive Evaluation for Text-to-SQL Capabilities of Large Language Models," Submitted to *NeurIPS 2024*. Rebuttal period ended. **Score: 86554**
- Zhishuai Li*, Xiang Wang*, Jingjing Zhao*, Sun Yang*, Guoqing Du*, Xiaoru Hu*, Bin Zhang*, **Yuxiao Ye***, et al., "PET-SQL: A Prompt-enhanced Two-stage Text-to-SQL Framework with Cross-consistency," *Arxiv Preprint*.

HONORS and AWARD

Grand Prize in "China Collegiate Computing Contest - AI Innovation Contest" **(awarded 4/3400+)**   **2022**
National Scholarship   **2023**
Outstanding Graduate Student, Beijing Institute of Technology   **2023**
Outstanding Undergraduate Student, Beijing Institute of Technology   **2022**
First-Class Academic Scholarship, Beijing Institute of Technology   **2022, 2023**

RESEARCH EXPERIENCES

Research Assistant, Mobile Crowdsensing by Deep Reinforcement Learning   **2021.06-Present**
- Proposed a multi-agent DRL framework, which consists of an intrinsic reward driven exploitation of agent's individuality, enabling the accurate division of work, and a meta-learning based policy optimization, facilitating flexible cooperation modeling among agents.
- Proposed a multi-agent DRL framework, with a traffic flow prediction mechanism based on spatial-temporal transformer, and a graph-based inter-agent communication method, to achieve efficient path planning for agents.

Intern, SenseTime Large Language Model Group   **2023.12-2024.05**
- Constructed a new Text-to-SQL benchmark to mitigate overfitting in LLMs, conducted comprehensive evaluations on five Text-to-SQL sub-tasks across six LLMs, identified the distinct capabilities and limitations of LLMs, and proposed optimal in-context learning solutions tailored to each sub-task.
- Proposed an LLM-based Text-to-SQL framework, consisting of an enhancement of in-context learning and schema linking, and a cross-consistency mechanism across different models, which **achieves new SOTA results on the Spider benchmark with an accuracy of 87.6%.**

COMPUTER SKILLS

Programming: Python, SQL, C/C++/C#, Java, Matlab
Software: Pytorch, Tensorflow, Hugging Face Transformers, DeepSpeed