**Mr. Yuxiao Ye**

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**Research Interests:** (Multi-Agent) Deep Reinforcement Learning;

LLM-based Agents (Code Generation, Text-to-SQL, computer/GUI interaction);

**EDUCATION**

[**Beijing**](file:///D:/youdao/Dict/8.9.4.0/resultui/html/index.html#/javascript:;)[**Institute**](file:///D:/youdao/Dict/8.9.4.0/resultui/html/index.html#/javascript:;)[**of**](file:///D:/youdao/Dict/8.9.4.0/resultui/html/index.html#/javascript:;)[**Technology**](file:///D:/youdao/Dict/8.9.4.0/resultui/html/index.html#/javascript:;) (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

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*BSc in Computer Science and Technology* Average Score: 88.6GPA: 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.
* Bin Zhang\*, **Yuxiao Ye\***, et al., “SQLBench: A Comprehensive Evaluation for Text-to-SQL Capabilities of Large Language Models,” Submitted to *NeurIPS 2024*. **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 and Combinatorial Optimization by (MA)DRL 2021.06-Present**

* Proposed a MADRL framework, consisting of an intrinsic reward driven exploitation of individuality, enabling the accurate division of work, and a meta-learning based policy optimization, facilitating flexible agent’s cooperation.
* Proposed a MADRL 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.
* Utilize transformer-based reinforcement learning to solve combinatorial optimization problems (particularly the two-echelon VRP), enhanced by a curriculum learning mechanism to mitigate non-stationarity among 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