# Yaxin Fan

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## EDUCATION

**Soochow University**, Jiangsu, China                                  2021/09 – 2025/06 (Expected)

*PhD.Candidate* in Software Engineering (Master-PhD Combined Program)

- **Supervisor**: Prof. Peifeng Li
- **Research Interest**: Natural Language Processing, Discourse Analysis In Dialogue, Application of Discourse to Dialogue Systems

**Soochow University**, Jiangsu, China                                              2019/09 – 2021/06

*M.S.Candidate* in Computer Science and Technology (Master-PhD Combined Program), advised by Prof. Peifeng Li.

**Zhengzhou University**, Henan, China                                             2015/09 – 2019/06

*B.S.* in Computer Science and Technology

## RESEARCH FIELD

Before June 2021, my primary focus was on Chinese macro discourse parsing. Since then, I have shifted my attention to multi-party dialogue discourse parsing and have actively explored applying discourse structures to downstream tasks, such as multi-party dialogue generation. Additionally, I have closely collaborated with partners on topic shift detection, query rewriting, proactive dialogue, and applications of LLMs. Currently, my main focus is on leveraging LLMs to enhance dialogue discourse parsing.

## SELECTED PUBLICATIONS

Dialogue Discourse Parsing

- **Yaxin Fan**, Feng Jiang, Peifeng Li, and Haizhou Li. 2024. Uncovering the Potential of ChatGPT for Discourse Analysis in Dialogue: An Empirical Study. In Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING'2024).
- **Yaxin Fan**, Feng Jiang, Peifeng Li, Fang Kong, and Qiaoming Zhu. 2023. Improving Dialogue Discourse Parsing via Reply-to Structures of Addressee Recognition. In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP'2023).
- **Yaxin Fan**, Peifeng Li, Fang Kong, and Qiaoming Zhu. A Distance-Aware Multi-Task Framework for Conversational Discourse Parsing. 2022. In Proceedings of the 29th International Conference on Computational Linguistics (COLING'22).

Multi-Party Dialogue Generation

- **Yaxin Fan**, Peifeng Li, and Qiaoming Zhu. 2024. Improving Multi-party Dialogue Generation via Topic and Rhetorical Coherence. In Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP'2024).

Applications of LLMs

- **Yaxin Fan**, Feng Jiang, Peifeng Li, and Haizhou Li. GrammarGPT: Exploring Open-Source LLMs for Native Chinese Grammatical Error Correction with Supervised Fine-Tuning. 2023. In Proceedings of the 12th CCF International Conference on Natural Language Processing and Chinese Computing (NLPCC'23).
- Chuyi Kong, **Yaxin Fan**, Xiang Wan, Feng Jiang, and Benyou Wang. 2024. PlatoLM: Teaching LLMs in Multi-Round Dialogue via a User Simulator. In Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics. (ACL'2024).

Query Rewriting

- Zhiyu Cao, Peifeng Li, **Yaxin Fan**, and Qiaoming Zhu. 2024. Incomplete Utterance Rewriting with Editing Operation Guidance and Utterance Augmentation. In Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP'2024).

Topic Shift Detection

- Jiangyi Lin, **Yaxin Fan**, Xiaomin Chu, Peifeng Li, and Qiaoming Zhu. 2023. Multi-granularity Prompts for Topic Shift Detection in Dialogue. In Proceedings of the 2023 International Conference on Intelligent Computing and Control (ICIC'2023).
- Jiangyi Lin, **Yaxin Fan**, Feng Jiang, Xiaomin Chu, and Peifeng Li. 2023. Topic Shift Detection in Chinese Dialogues: Corpus and Benchmark. In Proceedings of the 17th International Conference on Document Analysis and Recognition (ICDAR'2023).

Chinese Macro Discourse Parsing

- Feng Jiang, **Yaxin Fan**, Xiaomin Chu, Peifeng Li, and Qiaoming Zhu. 2021. Not Just Classification: Recognizing Implicit Discourse Relation on Joint Modeling of Classification and Generation. In Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP'2021).
- Feng Jiang, **Yaxin Fan**, Xiaomin Chu, Peifeng Li, Qiaoming Zhu, and Fang Kong. 2021. Hierarchical Macro Discourse Parsing Based on Topic Segmentation. In Proceedings of the Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI'21).
- **Yaxin Fan**, Feng Jiang, Xiaomin Chu, Peifeng Li, and Qiaoming Zhu. 2021. Chinese Macro Discourse Parsing on Dependency Graph Convolutional Network. In Proceedings of the 12th CCF International Conference on Natural Language Processing and Chinese Computing (NLPCC'21).
- **Yaxin Fan**, Feng Jiang, Peifeng Li, and Qiaoming Zhu. 2021. Macro Discourse Relation Recogniztion Based on Micro Discourse Structure and Self-Interactive Attention Network. In Proceedings of the 2021 International Joint Conference on Neural Networks (IJCNN'2021).
- **Yaxin Fan**, Feng Jiang, Xiaomin Chu, Peifeng Li, and Qiaoming Zhu. 2020. Combining Global and Local Information to Recognize Chinese Macro Discourse Structure. In Proceedings of the 19th Chinese National Conference on Computational Linguistics (CCL'2020).

## EXPERIENCE

**The Chinese University of Hong Kong, Shenzhen** Guangdong, China          2023/03 – 2023/11
*Visiting Student*

- Advisor: Prof. Haizhou Li
- work on Evaluation of Chinese medical LLMs, application of discourse to open-domain LLMs

## HONORS & AWARDS

- Third Place in 2023 NLPCC Shared Task 1                                    2023/05
- Second Place in Track 1, 2022 NLPCC Shared Task 6.                         2022/05
- Third Place in Legal Summarization Track, 2021 Challenge of AI in Law (CAIL).   2021/10
- National Scholarship for Graduate Student                                  2019/11

## TECHNICAL SKILLS

- Language: Chinese (Native), English (Fluent)
- Coding: Python, C/C++, Java, SQL
- Tools: PyTorch, Git, LaTeX, Markdown