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EDUCATION

Hong Kong University of Science and Technology (HKUST)，Superviser：Prof. Xiaofang Zhou   HK, China
Visiting Ph.D. Student, in Computer Science and Engineering   *May 2024 - now*
University of Science and Technology of China (USTC)，Superviser：Prof. Enhong Chen   Hefei, China
Ph.D., in Data Science - Computer Science and Technology, GPA: 3.90/4.3   *Sep. 2019 - now*
University of Science and Technology of China (USTC)   Hefei, China
B.E., in Electronic Information Engineering, GPA: 3.78/4.3   *Sep. 2015 - June 2019*

RESEARCH INTEREST

My research interests encompass a wide range of subjects within the fields of Knowledge-aware Natural Language Processing (NLP), focusing on two main areas: (1) Knowledge Acquisition and (2) Knowledge Application. Recently, I am exploring a focused research direction of Knowledge-enhanced Large Language Models (LLMs):

- **Knowledge Acquisition**: Acquisition of knowledge concept, knowledge relation, knowledge linking and alignment using information extraction, crowd-sourcing, and LLM In-Context Learning (ICL) techniques.

- **Knowledge Application**: Application of extracted knowledge in various NLP downstream tasks, including but not limited to: Hierarchical Text Classification (HTC), Multimodal Summarization with Multimodal Output (MSMO), Question Answering (QA), etc.

- **Knowledge-enhanced LLMs**: Mitigate the hallucination problem and elicit complex reasoning ability of LLMs with the integration of internal/external knowledge, mainly through the approaches such as pre-training and Retrieval-Augmented Generation (RAG).

INTERNSHIP EXPERIENCE

ByteDance - AI LAB   Beijing, China
Algorithm Intern   *Feb. 2023 - Aug. 2023*
- Job Description: RLHF for Large Language Models, especially focusing on SFT and Reward Model.
Huawei - Cloud & AI   Hangzhou, China
Algorithm Intern   *Feb. 2019 - Aug. 2019*
- Job Description: Text Generation, BERT-based Applications.

HONORS

- 2023, CICAI Finalist of Best Paper Award (Top-3)

- 2019, 2020, 2022, 2023, Graduate Student First-class Academic Scholarship

- 2021, Graduate Student Second-class Academic Scholarship

- 2016, National Scholarship

TEACHING

- COMP6110P.02: Machine Learning and Knowledge Discovery (Fall 2021)

- CS1001A.13: Computer Programming A (Fall 2020)

- 011X3001: Introduction to Data Science (Fall 2019)

- 011164.01: Computer Programming I (Fall 2018)

ACADEMIC SERVICE

- **Reviewer:** ACL, ICLR, IEEE TKDE, IEEE TBD.

Mentoring

- **Xukai Liu**: USTC UG → USTC Ph.D. Worked on knowledge alignment and linking (Findings of ACL 2023, ACL ARR 2024 June under review).

- **Yanghai Zhang**: USTC UG → USTC Ph.D. Worked on knowledge-enhanced multimodal summarization (Findings of ACL 2024).

- **Aoran Gan**: USTC UG → USTC Ph.D. Relational triple extraction (ACL ARR 2024 June under review).

- **Haoyu Tang**: USTC UG → Renmin University of China MS. Worked on machine unlearning for large language models (NeurIPS 2024 under review).

Reference

- **Dr. Enhong Chen:**
  Professor at USTC. Ph.D. Supervisor. Email: cheneh@ustc.edu.cn.

- **Dr. Xiaofang Zhou:**
  Professor at HKUST. Supervisor of my visit in HKUST. Email: zxf@ust.hk.

- **Dr. Qi Liu:**
  Professor at USTC. Close coauthor of my research in USTC. Email: qiliuql@ustc.edu.cn.

Preprints

[1]. <u>**Ye Liu**</u>, Jiajun Zhu, Kai Zhang, Haoyu Tang, Yanghai Zhang, Xukai Liu, Qi Liu, Enhong Chen. Detect, Investigate, Judge and Determine: A Novel LLM-based Framework for Few-shot Fake News Detection. AAAI 2025 (Under Review).

[2]. Haoyu Tang (equal contribution), <u>**Ye Liu (equal contribution)**</u>, Xukai Liu, Kai Zhang, Yanghai Zhang, Qi Liu, Enhong Chen. Learn while Unlearn: An Iterative Unlearning Framework for Generative Language Models. NeurIPS 2024 (Under Review).

[3]. Xukai Liu, <u>**Ye Liu**</u>, Kai Zhang, Kehang Wang, Qi Liu, Enhong Chen. OneNet: A Fine-Tuning Free Framework for Few-Shot Entity Linking via Large Language Model Prompting. ACL ARR 2024 June (Under Review).

[4]. Aoran Gan, <u>**Ye Liu**</u>, Hongbo Gang, Kai Zhang, Qi Liu, Guoping Hu. Discover rather than Memorize: A Novel Benchmark for Relational Triple Extraction. ACL ARR 2024 June (Under Review).

[5]. Feng Hu, Kai Zhang, <u>**Ye Liu**</u>, Meikai Bao, Xukai Liu, Junyu Lu, Linbo Zhu, Qi Liu. Learnable Relational Knowledge Distillation Through Orthogonal Projection. AAAI 2025 (Under Review).

Publications

[1]. <u>**Ye Liu**</u>, Kai Zhang*, Zhenya Huang, Kehang Wang, Yanghai Zhang, Qi Liu, Enhong Chen*. Enhancing Hierarchical Text Classification through Knowledge Graph Integration. Findings of the 61st annual meeting of the Association for Computational Linguistics (ACL-Findings), 2023.

[2]. <u>**Ye Liu**</u>, Han Wu, Zhenya Huang, Hao Wang, Yuting Ning, Jianhui Ma, Qi Liu, Enhong Chen*. TechPat: Technical Phrase Extraction for Patent Mining. ACM Transactions on Knowledge Discovery from Data (ACM TKDD), 2023.

[3]. <u>**Ye Liu**</u>, Kai Zhang, Aoran Gan, Linan Yue, Feng Hu, Qi Liu, Enhong Chen. Empowering Few-Shot Relation Extraction with The Integration of Traditional RE Methods and Large Language Models. The 29th International Conference on Database Systems for Advanced Applications (DASFAA), 2024.

[4]. <u>**Ye Liu**</u>, Han Wu, Zhenya Huang, Hao Wang, Jianhui Ma, Qi Liu, Enhong Chen*, Hanqing Tao and Ke Rui. Technical Phrase Extraction for Patent Mining: A Multi-level Approach. The 2020 IEEE International Conference on Data Mining (ICDM), 2020.

[5]. Yanghai Zhang, <u>**Ye Liu**</u>, Shiwei Wu, Kai Zhang*, Xukai Liu, Qi Liu, Enhong Chen. Leveraging Entity Information for Cross-Modality Correlation Learning: The Entity-Guided Multimodal Summarization. Findings of the 62nd annual meeting of the Association for Computational Linguistics (ACL-Findings), 2024.

[6]. Linan Yue, Qi Liu, **Ye Liu**, Weibo Gao, et al. Cooperative Classification and Rationalization for Graph Generalization. The ACM Web Conference, 2024 (WWW), 2024.

[7]. Linan Yue, Qi Liu, Weibo Gao, **Ye Liu**, Kai Zhang, Yichao Du, Li Wang, et al. Federated Self-Explaining GNNs with Anti-shortcut Augmentations. The 41st International Conference on Machine Learning (ICML), 2024.

[8]. Kehang Wang, **Ye Liu**, Kai Zhang, Qi Liu, Yankun Ren, Xinxing Yang, Longfei Li, Jun Zhou. QoMRC: Query-oriented Machine Reading Comprehension Framework for Aspect Sentiment Triplet Extraction. The 29th International Conference on Database Systems for Advanced Applications (DASFAA), 2024.

[9]. Zhijun Dong, Likang Wu, Kai Zhang, **Ye Liu**, Yanghai Zhang, Zhi Li, Hongke Zhao and Enhong Chen. FZR: Enhancing Knowledge Transfer via Shared Factors Composition in Zero-Shot Relational Learning. The 33rd ACM International Conference on Information and Knowledge Management (CIKM), 2024

[10]. Linan Yue, Qi Liu, Yichao Du, Weibo Gao, **Ye Liu**, et al. FedJudge: Federated Legal Large Language Model. The 29th International Conference on Database Systems for Advanced Applications (DASFAA), 2024.

[11]. Xukai Liu, Kai Zhang*, **Ye Liu**, Enhong Chen, Zhenya Huang, , Linan Yue, Jiaxian Yan. RHGH: Relation-gated Heterogeneous Graph Network for Entity Alignment in Knowledge Graphs. Findings of the 61st annual meeting of the Association for Computational Linguistics (ACL-Findings), 2023.

[12]. Meikai Bao, Qi Liu*, Kai Zhang, **Ye Liu**, Linan Yue, longfei li, Jun Zhou. Keep Skills in Mind: Understanding and Implementing Skills in Commonsense Question Answering. The 32nd International Joint Conference on Artificial Intelligence (IJCAI), 2023.

[13]. Kehang Wang, Qi Liu*, Kai Zhang, **Ye Liu**, Hanqin Tao, Zhenya Huang, Enhong Chen. Class-Dynamic and Hierarchy-Constrained Network for Entity Linking. The 28th International Conference on Database Systems for Advanced Applications (DASFAA), 2023.

[14]. Xin Jin, Qi Liu*, Linan Yue, **Ye Liu**, Lili Zhao, Weibo Gao, Zheng Gong, Kai Zhang, Haoyang Bi. Diagnosis then Aggregation: An Adaptive Ensemble strategy for Keyphrase Extraction. CAAI International Conference on Artificial Intelligence (CICAI), 2023. (Finalist of Best Paper Award!)

[15]. Huijie Liu, Han Wu, Le Zhang, Runlong Yu, **Ye Liu**, Chunli Liu, Minglei Li, Qi Liu, Enhong Chen. A Hierarchical Interactive Multi-channel Graph Neural Network for Technological Knowledge Flow Forecasting. Knowledge and Information Systems (KAIS), 2022.

[16]. Guanqi Zhu, Hanqing Tao, Han Wu, Liyi Chen, **Ye Liu**, Qi Liu, Enhong Chen*. Text Classification via Learning Semantic Dependency and Association. The 2022 IEEE World Congress on Computational Intelligence - IJCNN (IJCNN), 2022.

[17]. Yixiao Ma, Shiwei Tong, **Ye Liu**, Likang Wu, Qi Liu, Enhong Chen*, Wei Tong, Zi Yan. Enhanced Representation Learning for Examination Papers with Hierarchical Document Structure. The 44th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), 2021.

[18]. Songtao Fang, Zhenya Huang*, Ming He, Shiwei Tong, Xiaoqing Huang, **Ye Liu**, Jie Huang, Qi Liu. Guided Attention Network for Concept Extraction. The 30th International Joint Conference on Artificial Intelligence (IJCAI), 2021.

[19]. Huijie Liu, Han Wu, Le Zhang, Runlong Yu, **Ye Liu**, Chunli Liu, Qi Liu, Enhong Chen. Technological Knowledge Flow Forecasting through A Hierarchical Interactive Graph Neural Network. IEEE International Conference on Data Mining (ICDM), 2021.

[20]. Yuting Ning, **Ye Liu**, Zhenya Huang, Haoyang Bi, Qi Liu, Enhong Chen*, Dan Zhang. Stable and Diverse: A Unified Approach for Computerized Adaptive Testing. The 7th IEEE International Conference on Cloud Computing and Intelligence Systems (CCIS), 2021.

[21]. Lili Zhao, Linan Yue, Yanqing An, **Ye Liu**, Kai Zhang, Weidong He, Yanmin Chen, Qi Liu*. Legal Judgment Prediction with Multiple Perspectives on Civil Cases. The 1st CAAI International Conference on Artificial Intelligence (CICAI), 2021.