

Yuyang Bai

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Research Interests

My research interests include interpreting and enhancing the knowledge & reasoning ability of Large Language Models, and NLP & social network analysis for fairness and common good.

Education

Xi'an Jiaotong University, Xi'an, Shaanxi, China (member of the C9 league in China) 2021.09 - present

Artificial Intelligence Experimental Class

GPA: 91.2/100 [transcript]

Thesis Advisor: Prof. Minnan Luo

University of Notre Dame, Notre Dame, IN, United States

2023.08 - 2023.12

Non-degree Undergraduate (Exchange Student)

GPA: 3.92/4.00 [transcript]

Thesis Advisor: Prof. Meng Jiang

Publications (* indicates equal contribution)

1. **KGQuiz: Evaluating the Generalization of Encoded Knowledge in Large Language Models**
Yuyang Bai*, Shangbin Feng*, Vidhisha Balachandran, Zhaoxuan Tan, Shiqi Lou, Tianxing He, Yulia Tsvetkov
In Proceedings of TheWebConf(WWW), 2024 (oral)
2. **Chain-of-Layer: Iteratively Prompting Large Language Models for Taxonomy Induction from Limited Examples**
Qingkai Zeng*, Yuyang Bai*, Zhaoxuan Tan, Shangbin Feng, Zhenwen Liang, Zhihan Zhang, Meng Jiang
In Proceedings of CIKM, 2024
3. **CodeTaxo: Enhancing Taxonomy Expansion with Limited Examples via Code Language Prompts**
Qingkai Zeng*, Yuyang Bai, Zhaoxuan Tan, Zhenyu Wu, Shangbin Feng, Meng Jiang
Arxiv preprint, 2024
4. **Knowledge Card: Filling LLMs' Knowledge Gaps with Plug-in Specialized Language Models**
Shangbin Feng, Weijia Shi, Yuyang Bai, Vidhisha Balachandran, Tianxing He, Yulia Tsvetkov.
In Proceedings of ICLR, 2024 (oral)
5. **FactKB: Generalizable Factuality Evaluation using Language Models Enhanced with Factual Knowledge**
Shangbin Feng, Vidhisha Balachandran, Yuyang Bai, Yulia Tsvetkov.
In Proceedings of EMNLP, 2023
6. **Detecting Spoilers in Movie Reviews with External Movie Knowledge and User Networks**
Heng Wang, Wenqian Zhang, Yuyang Bai, Zhaoxuan Tan, Shangbin Feng, Qinghua Zheng, Minnan Luo.
In Proceedings of EMNLP, 2023
7. **TwBot-22: Towards Graph-Based Twitter Bot Detection.**
Shangbin Feng, ... Yuyang Bai, ... Minnan Luo.
In Proceedings of the NeurIPS, Datasets and Benchmarks Track, 2022.

Research Experience

Research Assistant, Luo lab Undergraduate Division (LUD) @ Xi'an Jiaotong University 2022.02 - present

- Worked on addressing the challenges in Twitter bot detection, by introducing a new, comprehensive graph-based benchmark.
- Worked on improving spoiler detection in online movie reviews by integrating external movie knowledge and user behavior.
- Authored 1**NeurIPS*'22, 1**EMNLP*'23.

Advisor: Prof. Minnan Luo

Research Assistant, TsuetShop @ University of Washington 2022.10 - present

- Worked on evaluating the factual consistency of summaries generated by automatic summarization systems, focusing on improving the ability to detect erroneous entities and relations.
- Worked on enhancing large language models with current, domain-specific knowledge without the need for frequent retraining.
- Worked on evaluating the knowledge generalization abilities of large language models across various domains and task complexities.
- Authored 1**EMNLP*'23, 1**ICLR*'24, 1**WWW*'24.

Advisor: Ph.D. student Shangbin Feng, Prof. Yulia Tsvetkov

Research Assistant, DM² Lab @ University of Notre Dame 2023.8 - present

- Worked on designing an iterative prompting framework that also includes a ranking filter to induce taxonomies from limited examples and reduce hallucinations in the output taxonomies.
- Worked on crafting an iterative taxonomy expansion framework, CodeTaxo, using code language prompts and a similarity-based filter to integrate emerging concepts into existing taxonomies.
- Authored 1**CIKM*'24.

Advisor: Ph.D. student Qingkai Zeng, Prof. Meng Jiang

Research Assistant, OSU NLP group @ Ohio State University 2024.6 - present

- Working on creating a new long-context LLM QA benchmark, introducing new types of questions.

Advisor: Ph.D. student Bernal Jiménez Gutiérrez, Prof. Yu Su

Services

- Director of the LUD lab 2024
- Reviewer for KDD 2025 August 2024
- Reviewer for ACL ARR 2024 June 2024
- Reviewer for COLM 2024 2024
- Reviewer for KDD 2024 2024

Skills

- Programming Skills: C/C++, Python, PyTorch, MATLAB, \LaTeX , Git
- Language Skills: Mandarin (native), English (TOFEL 109: R 30, L 29, S 23, W 27)