Yang Yu

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Education

University of Science and Technology of China Sept. 2021 – Jun. 2024 (expected)

- *Master of Science* in Computer Science. Advisor: Prof. Qi Liu.
- Research Interest: Recommender System, Natural Language Processing, Federated Learning.
- GPA: 4.06 / 4.3.

University of Science and Technology of China Sept. 2017 – Jun. 2021

- *Bachelor of Engineering* in Computer Science.
- GPA: 3.97 / 4.3, Rank: 3 / 253.

Research Experience

Graduate Research Assistant, University of Science and Technology of China Sept. 2021 – Present

- Anhui Province Key Laboratory of Big Data Analysis and Application (BDAA). Advisor: Prof. Qi Liu.
- Working on recommender systems, federated learning, and natural language processing.
- Designed an effective clustering-based untargeted attack method against federated recommendation systems and a general uniformity-based defense mechanism (AAAI'23).

Research Intern, OPPO Research Institute Feb. 2023 – Present

- Working on empowering various user-oriented services (e.g., user profiling, personalized recommendation) by pre-training the user model with users' app-related behaviors.
- Designed a new user model pre-training method (the corresponding work is under review).

Research Intern, Microsoft Research Asia Sept. 2020 – May. 2021

- Social Computing Group. Mentor: Dr. Fangzhao Wu and Dr. Xing Xie.
- Mainly worked on news understanding and recommendation.
- Developed multilingual news recommendation models for MSN online services.
- Designed a self-supervised domain-specific post-training method and a two-stage multi-teacher knowledge distillation framework for effective and efficient PLM-based news recommendation (EMNLP'22).

Joint Research Program, Huawei Mar. 2020 – Dec. 2020

- Worked on the compression of generative models for edge devices.
- Implemented several methods for image super-resolution and model compression (e.g., pruning, quantization, knowledge distillation).

Publications

1. **Yang Yu**, Qi Liu, Likang Wu, Runlong Yu, Sanshi Lei Yu, Zaixi Zhang. Untargeted Attack against Federated Recommendation Systems via Poisonous Item Embeddings and the Defense. In *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI)*, 2023. [Paper] [Code] [Video]
2. **Yang Yu**, Fangzhao Wu, Chuhan Wu, Jingwei Yi, Qi Liu. Tiny-NewsRec: Effective and Efficient PLM-based News Recommendation. In *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2022. [Paper] [Code]
3. Tao Qi, Fangzhao Wu, Chuhan Wu, Peiru Yang, **Yang Yu**, Xing Xie, Yongfeng Huang. HieRec: Hierarchical User Interest Modeling for Personalized News Recommendation. In *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2021. [Paper]
4. Chuhan Wu, Fangzhao Wu, **Yang Yu**, Tao Qi, Yongfeng Huang, Qi Liu. NewsBERT: Distilling Pre-trained

Language Model for Intelligent News Application. In *Findings of the Association for Computational Linguistics: EMNLP*, 2021. [Paper]

5. Jingwei Yi, Fangzhao Wu, Bin Zhu, **Yang Yu**, Chao Zhang, Guangzhong Sun, Xing Xie. UA-FedRec: Untargeted Attack on Federated News Recommendation. *arXiv preprint*, 2022. [Paper]
6. Chuhan Wu, Fangzhao Wu, **Yang Yu**, Tao Qi, Yongfeng Huang, Xing Xie. UserBERT: Contrastive User Model Pre-training. *arXiv preprint*, 2021. [Paper]

Projects

Intelligent Educational Knowledge Graph (LUNA) May. 2021 – Feb. 2023

- Aiming to gather, standardize, and analyze massive multi-modal educational resources on the Internet and provide various intelligent education services for students and teachers.
- In charge of the educational resources search system and the test paper analysis service.
- Empowered the recall and ranking pipeline of the search system with pre-trained language models.

Federated Recommendation Apr. 2022 – Aug. 2022

- Implemented various attack methods and defense mechanisms for federated recommendation systems in a unified framework.

News Recommendation Jul. 2021

- Implemented several deep learning-based news recommendation methods in PyTorch, with the support of multi-GPU training and evaluation.

Selected Honors and Awards

Huawei Scholarship (Top 2%), University of Science and Technology of China 2019, 2022

First Prize Academic Scholarship, University of Science and Technology of China 2021, 2022

"Stars of Tomorrow" Internship Award of Excellence, Microsoft Research Asia 2021

China National Scholarship (Top 1%), Ministry of Education of the People's Republic of China 2020

Skills

Programming Languages: Python, Shell, Markdown, SQL, C, HTML, JavaScript

Frameworks: PyTorch, Flask, Django, Vue.js

Tools: LaTeX, Git, Docker

Languages: Mandarin (native), English (TOEFL: 105)