Zhaoxuan Tan

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Research Interests

My primary research interests lie at the intersection of natural language processing and graph mining (especially knowledge graphs and social networks), with a particular focus on language model+graph and computation for social good.

Education

University of Notre Dame, Notre Dame, IN, United States 2023.08 - present
Ph.D. in Computer Science and Engineering
Advisor: Prof. Meng Jiang

Xi'an Jiaotong University, Xi'an, Shaanxi, China 2019.08 - 2023.07
B.E. in Computer Science and Technology
Advisor: Prof. Minnan Luo

Publications (* indicates equal contribution)

[21] **Democratizing Large Language Models via Personalized Parameter-Efficient Fine-tuning.**
Zhaoxuan Tan, Qingkai Zeng, Yijun Tian, Zheyuan Liu, Bing Yin, Meng Jiang.
arXiv preprint 2024.

[20] **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.
arXiv preprint 2024.

[19] **DELL: Generating Reactions and Explanations for LLM-Based Misinformation Detection.**
Herun Wan*, Shangbin Feng*, Zhaoxuan Tan, Heng Wang, Yulia Tsvetkov, Minnan Luo.
arXiv preprint 2024.

[18] **What Does the Bot Say? Opportunities and Risks of Large Language Models in Social Media Bot Detection.**
Shangbin Feng, Herun Wan, Ningnan Wang, Zhaoxuan Tan, Minnan Luo, Yulia Tsvetkov.
arXiv preprint 2024.

[17] **Towards Safer Large Language Models through Machine Unlearning.**
Zheyuan Liu, Guangyao Dou, Zhaoxuan Tan, Yijun Tian, Meng Jiang.
arXiv preprint 2024.

[16] **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 The Web Conference (WWW) 2024.*

[15] **User Modeling in the Era of Large Language Models: Current Research and Future Directions**
Zhaoxuan Tan, Meng Jiang.
In *Proceedings of IEEE Data Engineering Bulletin 2023.*

[14] **LMBot: Distilling Graph Knowledge into Language Model for Graph-less Deployment in Twitter Bot Detection**

Zijian Cai, Zhaoxuan Tan, Zhenyu Lei, Zifeng Zhu, Hongrui Wang, Qinghua Zheng, Minnan Luo.
In *Proceedings of WSDM 2024.*

[13] **GADY: Unsupervised Anomaly Detection on Dynamic Graphs**
Shiqi Lou, Qingyue Zhang, Shujie Yang, Yuyang Tian, Zhaoxuan Tan, Minnan Luo.
arXiv preprint 2023.

[12] **Knowledge Crosswords: Geometric Reasoning over Structured Knowledge with Large Language Models.**
Wenxuan Ding*, Shangbin Feng*, Yuhan Liu, Zhaoxuan Tan, Vidhisha Balachandran, Tianxing He, Yulia Tsvetkov. *arXiv preprint 2023.*

[11] **BotPercent: Estimating Twitter Bot Populations from Groups to Crowds.**
Zhaoxuan Tan*, Shangbin Feng*, Melanie Sclar, Herun Wan, Minnan Luo, Yejin Choi, Yulia Tsvetkov
In *Proceedings of EMNLP-Findings 2023.*

[10] **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.*

[9] **Can Language Models Solve Graph Problems in Natural Language?**
Heng Wang, Shangbin Feng, Tianxing He, Zhaoxuan Tan, Xiaochuang Han, Yulia Tsvetkov.
In *Proceedings of NeurIPS 2023 (spotlight).*

[8] **HOFA: Twitter Bot Detection with Homophily-Oriented Augmentation and Frequency Adaptive Attention**
Sen Ye, Zhaoxuan Tan, Zhenyu Lei, Ruijie He, Hongrui Wang, Qinghua Zheng, Minnan Luo.
arXiv preprint 2023.

[7] **KALM: Knowledge-Aware Integration of Local, Document, and Global Contexts for Long Document Understanding.**
Shangbin Feng, Zhaoxuan Tan, Wenqian Zhang, Zhenyu Lei, Yulia Tsvetkov.
In *Proceedings of ACL 2023.*

[6] **BotMoE: Twitter Bot Detection with Community-Aware Mixtures of Modal-Specific Experts.**
Yuhan Liu, Zhaoxuan Tan, Heng Wang, Shangbin Feng, Qinghua Zheng, Minnan Luo.
In *Proceedings of SIGIR 2023.*

[5] **KRACL: Contrastive Learning with Graph Context Modeling for Sparse Knowledge Graph Completion.**
Zhaoxuan Tan, Zilong Chen, Shangbin Feng, Qingyue Zhang, Qinghua Zheng, Jundong Li, Minnan Luo.
In Proceedings of The Web Conference (WWW) 2023.

[4] **TwiBot-22: Towards Graph-Based Twitter Bot Detection.**
Shangbin Feng*, Zhaoxuan Tan*, Herun Wan*, Ningnan Wang*, Zilong Chen*, Binchi Zhang*, Qinghua Zheng, Wenqian Zhang, Zhenyu Lei, Shujie Yang, Xinshun Feng, Qingyue Zhang, Hongrui Wang, Yuhan Liu, Yuyang Bai, Heng Wang, Zijian Cai, Yanbo Wang, Lijing Zheng, Zihan Ma, Jundong Li, Minnan Luo.
In *Proceedings of the NeurIPS, Datasets and Benchmarks Track 2022.*

[3] **PAR: Political Actor Representation Learning with Social Context and Expert Knowledge.**
Shangbin Feng, Zhaoxuan Tan, Zilong Chen, Peisheng Yu, Qinghua Zheng, Xiaojun Chang, Minnan Luo.
In *Proceedings of EMNLP 2022.*

[2] **Heterogeneity-Aware Twitter Bot Detection with Relational Graph Transformers.**
Shangbin Feng, Zhaoxuan Tan, Rui Li, Minnan Luo.

In *Proceedings of AAAI 2022.*

[1] **AHEAD: A Triple Attention Based Heterogeneous Graph Anomaly Detection Approach.**
Shujie Yang, Binchi Zhang, Shangbin Feng, Zhaoxuan Tan, Qinghua Zheng, Ziqi Liu, Minnan Luo.
In *Proceedings of CIAC 2023*, honorable mentioned for best paper.

Honors and Awards

Excellent Bachelor Thesis (rank 1/172), XJTU	2023
AAAI Student Scholarship	2022
National Second Prize, CUMCM	2021
Dean's List, XJTU	2020, 2021, 2022

Services

Reviewer for KDD	2024
Reviewer for AGI Workshop @ ICLR	2024
Reviewer for ACL Rolling Review	2023 Dec -
Reviewer for GCLR Workshop @ AAAI	2024
Reviewer for Transactions on Networking	2023
Reviewer for The Web Conference	2024
Reviewer for Temporal Graph Learning Workshop @ NeurIPS	2023
Reviewer for ICLR	2024
Reviewer for TKDE	2023 -
Reviewer for TNNLS	2023 -
Reviewer for ICWSM	2023 -
Reviewer for NeurIPS	2023
Virtual Volunteer for EMNLP	2022, 2023
Reviewer for NeurIPS Datasets and Benchmarks Track	2022
Reviewer for Learning on Graphs Conference	2022, 2023
Director of the LUD lab	2022, 2023

Teaching

Teaching Assistant of "Intro to AI", University of Notre Dame	2023 Fall
Teaching Assistant of "Algorithm", University of Notre Dame	2024 Spring

Skills

- Programming Skills: Python, PyTorch, MATLAB, C/C++, bash, HTML/CSS, LaTeX
- Language Skills: Mandarin (native), English (TOEFL 107: R 29, L 29, S 22, W 27), Cantonese (native)