Shangbin Feng

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Research Interests

Multi-model collaboration, knowledge and factuality, social NLP, networks and structures.

Education

University of Washington. Seattle, WA, USA 2022.9-present
PhD student in Computer Science and Engineering

University of Washington. Seattle, WA, USA 2022.9-2024.3
M.S. in Computer Science and Engineering

Xi'an Jiaotong University. Xi'an, Shaanxi, China 2018.9-2022.7
B.E. in Computer Science and Technology

Selected Publications (= indicates equal contribution)

Don't Hallucinate, Abstain: Identifying LLM Knowledge Gaps via Multi-LLM Collaboration
Shangbin Feng, Weijia Shi, Yike Wang, Wenxuan Ding, Vidhisha Balachandran, and Yulia Tsvetkov.
In *Proceedings of ACL 2024*
Outstanding Paper Award (top 1%); Area Chair Award, QA Track (1/∼200)

Knowledge Card: Filling LLMs' Knowledge Gaps with Plug-in Specialized Language Models
Shangbin Feng, Weijia Shi, Yuyang Bai, Vidhisha Balachandran, Tianxing He, and Yulia Tsvetkov.
In *Proceedings of ICLR 2024*
Oral (top 1.2%)

Can Language Models Solve Graph Problems in Natural Language?
Heng Wang=, Shangbin Feng=, Tianxing He, Zhaoxuan Tan, Xiaochuang Han, and Yulia Tsvetkov.
In *Proceedings of NeurIPS 2023*
Spotlight (top 3.4%)

From Pretraining Data to Language Models to Downstream Tasks: Tracking the Trails of Political Biases Leading to Unfair NLP Models
Shangbin Feng, Chan Young Park, Yuhan Liu, and Yulia Tsvetkov.
In *Proceedings of ACL 2023*
Best Paper Award (3/4864)
[**Washington Post article**] [**MIT Technology Review article**]

Publications

2024

Model Swarms: Collaborative Search to Adapt LLM Experts via Swarm Intelligence
Shangbin Feng, Zifeng Wang, Yike Wang, Sayna Ebrahimi, Hamid Palangi, Lesly Miculicich, Achin Kulshrestha, Nathalie Rauschmayr, Yejin Choi, Yulia Tsvetkov, Chen-Yu Lee, and Tomas Pfister.
In *arxiv*

Varying Shades of Wrong: Aligning LLMs with Wrong Answers Only
Jihan Yao=, Wenxuan Ding=, Shangbin Feng=, Lucy Lu Wang, and Yulia Tsvetkov.
In *arxiv*

Biased AI can Influence Political Decision-Making
Jillian Fisher, Shangbin Feng, Robert Aron, Thomas Richardson, Yejin Choi, Daniel W. Fisher, Jennifer Pan, Yulia Tsvetkov, and Katharina Reinecke.
In *arxiv*

Know Your Limits: A Survey of Abstention in Large Language Models
Bingbing Wen, Jihan Yao, Shangbin Feng, Chenjun Xu, Yulia Tsvetkov, Bill Howe, and Lucy Lu Wang.
In *Proceedings of TACL 2024*

MEDIQ: Question-Asking LLMs for Adaptive and Reliable Clinical Reasoning
Shuyue Stella Li, Vidhisha Balachandran, Shangbin Feng, Jonathan Ilgen, Emma Pierson, Pang Wei Koh, and Yulia Tsvetkov.
In *Proceedings of NeurIPS 2024*

Teaching LLMs to Abstain across Languages via Multilingual Feedback
Shangbin Feng, Weijia Shi, Yike Wang, Wenxuan Ding, Orevaoghene Ahia, Shuyue Stella Li, Vidhisha Balachandran, Sunayana Sitaram, and Yulia Tsvetkov.
In *Proceedings of EMNLP 2024*

Modular Pluralism: Pluralistic Alignment via Multi-LLM Collaboration
Shangbin Feng, Taylor Sorensen, Yuhan Liu, Jillian Fisher, Chan Young Park, Yejin Choi, and Yulia Tsvetkov.
In *Proceedings of EMNLP 2024*

Can LLM Graph Reasoning Generalize beyond Pattern Memorization?
Yizhuo Zhang=, Heng Wang=, Shangbin Feng=, Zhaoxuan Tan, Xiaochuang Han, Tianxing He, and Yulia Tsvetkov.
In *Proceedings of EMNLP 2024, findings*

CodeTaxo: Enhancing Taxonomy Expansion with Limited Examples via Code Language Prompts
Qingkai Zeng, Yuyang Bai, Zhaoxuan Tan, Zhenyu Wu, Shangbin Feng, and Meng Jiang.
In *arxiv*

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, and Meng

Jiang.
In *Proceedings of CIKM 2024*

Resolving Knowledge Conflicts in Large Language Models
Yike Wang=, Shangbin Feng=, Heng Wang, Weijia Shi, Vidhisha Balachandran, Tianxing He, and Yulia Tsvetkov.
In *Proceedings of COLM 2024*

Don't Hallucinate, Abstain: Identifying LLM Knowledge Gaps via Multi-LLM Collaboration
Shangbin Feng, Weijia Shi, Yike Wang, Wenxuan Ding, Vidhisha Balachandran, and Yulia Tsvetkov.
In *Proceedings of ACL 2024*
Outstanding Paper Award (top 1%); Area Chair Award, QA Track (1/∼200)

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, and Yulia Tsvetkov.
In *Proceedings of ACL 2024*

Stumbling Blocks: Stress Testing the Robustness of Machine-Generated Text Detectors Under Attacks
Yichen Wang, Shangbin Feng, Abe Bohan Hou, Xiao Pu, Chao Shen, Xiaoming Liu, Yulia Tsvetkov, and Tianxing He.
In *Proceedings of ACL 2024*

Knowledge Crosswords: Geometric Reasoning over Structured Knowledge with Large Language Models
Wenxuan Ding=, Shangbin Feng=, Yuhan Liu, Zhaoxuan Tan, Vidhisha Balachandran, Tianxing He, and Yulia Tsvetkov.
In *Proceedings of ACL 2024, findings*

DELL: Generating Reactions and Explanations for LLM-Based Misinformation Detection
Herun Wan=, Shangbin Feng=, Zhaoxuan Tan, Heng Wang, Yulia Tsvetkov, and Minnan Luo.
In *Proceedings of ACL 2024, findings*

P^{3}SUM: Preserving Author's Perspective in News Summarization with Diffusion Language Models
Yuhan Liu=, Shangbin Feng=, Xiaochuang Han, Vidhisha Balachandran, Chan Young Park, Sachin Kumar, and Yulia Tsvetkov.
In *Proceedings of NAACL 2024*

KGQuiz: Evaluating the Generalization of Encoded Knowledge in Large Language Models
Yuyang Bai=, Shangbin Feng=, Vidhisha Balachandran, Zhaoxuan Tan, Shiqi Lou, Tianxing He, and Yulia Tsvetkov.
In *Proceedings of The Web Conference 2024*

Knowledge Card: Filling LLMs' Knowledge Gaps with Plug-in Specialized Language Models
Shangbin Feng, Weijia Shi, Yuyang Bai, Vidhisha Balachandran, Tianxing He, and Yulia Tsvetkov.
In *Proceedings of ICLR 2024*

Oral (top 1.2%)

2023

FactKB: Generalizable Factuality Evaluation using Language Models Enhanced with Factual Knowledge
Shangbin Feng, Vidhisha Balachandran, Yuyang Bai, and Yulia Tsvetkov.
In *Proceedings of EMNLP 2023*

BotPercent: Estimating Bot Populations in Twitter Communities
Zhaoxuan Tan=, Shangbin Feng=, Melanie Sclar, Herun Wan, Minnan Luo, Yejin Choi, and Yulia Tsvetkov.
In *Proceedings of EMNLP 2023, findings*

Detecting Spoilers in Movie Reviews with External Movie Knowledge and User Networks
Heng Wang, Wenqian Zhang, Yuyang Bai, Zhaoxuan Tan, Shangbin Feng, Qinghua Zheng, and Minnan Luo.
In *Proceedings of EMNLP 2023*

Can Language Models Solve Graph Problems in Natural Language?
Heng Wang=, Shangbin Feng=, Tianxing He, Zhaoxuan Tan, Xiaochuang Han, and Yulia Tsvetkov.
In *Proceedings of NeurIPS 2023*
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From Pretraining Data to Language Models to Downstream Tasks: Tracking the Trails of Political Biases Leading to Unfair NLP Models
Shangbin Feng, Chan Young Park, Yuhan Liu, and Yulia Tsvetkov.
In *Proceedings of ACL 2023*
Best Paper Award (3/4864)

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

BIC: Twitter Bot Detection with Text-Graph Interaction and Semantic Consistency
Zhenyu Lei=, Herun Wan=, Wenqian Zhang, Shangbin Feng, Zilong Chen, Jundong Li, Qinghua Zheng, and Minnan Luo.
In *Proceedings of ACL 2023*

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

AHEAD: A Triple Attention Based Heterogeneous Graph Anomaly Detection Approach
Shujie Yang, Binchi Zhang, Shangbin Feng, Zhaoxuan Tan, Qinghua Zheng, Jun Zhou, and Minnan Luo.
In *Proceedings of CIAC 2023*

KRACL: Contrastive Learning with Graph Context Modeling for Sparse Knowledge Graph Completion

Zhaoxuan Tan, Zilong Chen, Shangbin Feng, Qingyue Zhang, Qinghua Zheng, Jundong Li, and Minnan Luo.
In *Proceedings of The Web Conference 2023*

2022

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

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, and Minnan Luo.
In *Proceedings of NeurIPS 2022, Datasets and Benchmarks Track*

GraTo: Graph Neural Network Framework Tackling Over-Smoothing with Neural Architecture Search.
Xinshun Feng, Herun Wan, Shangbin Feng, Hongrui Wang, Qinghua Zheng, Jun Zhou, and Minnan Luo.
In *Proceedings of CIKM 2022*

Datavoidant: An AI System for Addressing Political Data Voids on Social Media.
Claudia Flores-Saviaga, Shangbin Feng, and Saiph Savage.
In *Proceedings of CSCW 2022*

KCD: Knowledge Walks and Textual Cues Enhanced Political Perspective Detection in News Media.
Wenqian Zhang=, Shangbin Feng=, Zilong Chen=, Zhenyu Lei, Jundong Li, and Minnan Luo.
In *Proceedings of NAACL 2022*

Heterogeneity-aware Twitter Bot Detection with Relational Graph Transformers.
Shangbin Feng, Zhaoxuan Tan, Rui Li, and Minnan Luo.
In *Proceedings of AAAI 2022*

2021

Knowledge Graph Augmented Political Perspective Detection in News Media.
Shangbin Feng=, Zilong Chen=, Wenqian Zhang=, Qingyao Li, Qinghua Zheng, Xiaojun Chang, and Minnan Luo.
In *arxiv*

PPSGCN: A Privacy-Preserving Subgraph Sampling Based Distributed GCN Training Method.
Binchi Zhang, Minnan Luo, Shangbin Feng, Ziqi Liu, Jun Zhou, and Qinghua Zheng.
In *arxiv*

BotRGCN: Twitter Bot Detection with Relational Graph Convolutional Networks.
Shangbin Feng, Herun Wan, Ningnan Wang, and Minnan Luo.
In *Proceedings of ASONAM 2021, Short Paper*

TwiBot-20: A Comprehensive Twitter Bot Detection Benchmark.
Shangbin Feng, Herun Wan, Ningnan Wang, Jundong Li, and Minnan Luo.
In *Proceedings of CIKM 2021, Resource Track*

SATAR: A Self-supervised Approach to Twitter Account Representation Learning and its Application in Bot Detection.
Shangbin Feng, Herun Wan, Ningnan Wang, Jundong Li, and Minnan Luo.
In *Proceedings of CIKM 2021, Applied Track*

Research Internship

Student Researcher, Google, Los Angeles, CA, USA 2024.6-2024.9
Host: Zifeng Wang

Honors and Awards

Outstanding Reviewer, *EMNLP 2024* 2024
Outstanding Paper Award, *ACL 2024* 2024
Area Chair Award, QA Track, *ACL 2024* 2024
Best Paper Award, *ACL 2023* 2023
Top Reviewer, *Leaning on Graphs Conference 2022* 2022
Top Reviewer, *NeurIPS 2022* 2022
Excellent Undergraduate Dissertation, Xi'an Jiaotong University 2022
Excellent Graduate Student, Xi'an Jiaotong University 2022

Service

Action Editor for *ACL Rolling Review* 2024
Reviewer for *AISTATS* 2025
Reviewer for *COLING* 2025
Reviewer for *AAAI* 2025
Reviewer for *IJCAI* 2024
Reviewer for *COLM* 2024
Reviewer for *WebConf* 2024, 2025
Reviewer for *EMNLP* 2023
Reviewer for *ACL* 2023
Reviewer for *ICCV* 2023
Reviewer for *ICML* 2022, 2023, 2024
Reviewer for *CVPR* 2023, 2024
Reviewer for *ICLR* 2023, 2024, 2025
Reviewer for *ICWSM* 2023, 2024
Reviewer for *ACL Rolling Review* 2022, 2023, 2024
Reviewer for *Learning on Graphs Conference* 2022, 2024
Reviewer for *NeurIPS, Datasets and Benchmarks Track* 2022, 2023, 2024
Reviewer for *ECCV* 2022, 2024
Reviewer for *NeurIPS* 2022, 2023, 2024

Reviewer for *CSCW* 2022
Reviewer for *Social Network Analysis and Mining* 2021
Founder and Director of the LUD Lab, Xi'an Jiaotong University 2021, 2022

Talks

From Pretraining Data to Language Models to Downstream Tasks: Tracking the Trails of Political Biases Leading to Unfair NLP Models
ACL 2023 Best Paper Award Plenary Session. July, 2023.
2023 NYU Disinformation Symposium. June, 2023.

Selected Media Coverage

ChatGPT leans liberal, research shows.
Washington Post. Gerrit De Vynck. Aug 16, 2023.

AI language models are rife with different political biases.
MIT Technology Review. Melissa Heikkilä. Aug 7, 2023.

Funding

Google Gift: Teaching LLMs to say "I don't know"
Source of Support: Google
Total Award Amount: $30,000 unrestricted gift
Period of Performance: From July 2024

OpenAI Researcher Access Program
Source of Support: OpenAI
Total Award Amount: $10,000 for OpenAI API credits
Period of Performance: March 2024 to September 2024

Accelerate Foundation Models Academic Research Initiative
Source of Support: Microsoft Research
Total Award Amount: $20,000 for Azure OpenAI credits
Period of Performance: February 2024 to June 2024