Jiali Cheng

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RESEARCH INTEREST

- Trustworthy AI (debiasing, fairness, faithfulness)
- Multimodal Learning
- AI Alignment
- AI for Science (esp Biomedical)
- Privacy & Security in AI (Unlearning, Differential Privacy)
- Controlled Generation

EDUCATION

UMass Lowell, USA Ph.D. in Computer Science — 2023 - present

Northeastern University, Boston, USA M.S. in Computer Engineering — 2017 - 2019

Beijing University of Posts and Telecom, China B.Eng. in ECE — 2013 - 2017
- Exchange: Instituto Superior Técnico, Portugal, Master in ECE, Fall 2015

RESEARCH EXPERIENCE

Computational Language Understanding Lab, UMass Lowell — 2023 - Present
Research Assistant Advised by: Hadi Amiri

Zitnik Lab, Harvard University — 2022 - 2023
Research Assistant Advised by: Marinka Zitnik

THUNLP Lab, Tsinghua University, China — 2020 - 2022
Research Assistant Advised by: Zhiyuan Liu

Barabasi Lab, Network Science Institute — 2018 - 2020
Research Associate Advised by: Albert-Laszlo Barabasi

SERVICE

Reviewer: ARR since 2024, WACV 2023, EMNLP 2022, NAACL 2022, IEEE Vis 2021, 2022

ONGOING PROJECTS

Building Expert-Level LLMs
· Design and build pipelines to retrieve and construct expert-level clean data for training LLMs
· Train LLMs that achieve higher performances across a wide range of benchmarks and hallucinate less

Security and Privacy in GenAI
· Design novel, efficient, auditable machine unlearning techniques for LLMs & Multimodal LLMs, across various settings including on the edge
· Design new evaluation benchmarks and metrics, Membership Inference Attacks

Controlled Multimodal Generation
· Build novel multimodal generative models that is controllable at a granular level

PUBLICATIONS

[1] FairFlow: Mitigating Dataset Biases through Undecided Learning for Natural Language Understanding
Jiali Cheng, Hadi Amiri
To Appear in EMNLP2024 arXiv

[2] MU-Bench: A Multi-task Multi-modal Benchmark for Machine Unlearning
Jiali Cheng, Hadi Amiri
Preprint arXiv

[3] Multilingual & Multimodal Medical Answer Generation
Jiali Cheng, Mohamed Elgaar, Nidhi Vakil, Hadi Amiri

[4] MultiDelete for Multimodal Machine Unlearning
Jiali Cheng, Hadi Amiri
ECCV 2024 arXiv

[5] MedDec: A Dataset for Extracting Medical Decisions from Discharge Summaries
Mohamed Elgaar, **Jiali Cheng**, Nidhi Vakil, Hadi Amiri, Leo Anthony Celi
Findings of ACL 2024 (Long) arXiv

[6] CogniVoice: Multimodal and Multilingual Fusion Networks for Mild Cognitive Impairment Assessment from Spontaneous Speech
Jiali Cheng, Mohamed Elgaar, Nidhi Vakil, Hadi Amiri
Interspeech 2024 arXiv

[7] Exploring Practices Surrounding Total Parenteral Nutrition After Bariatric Surgery Using Natural Language Processing Via Large Language Models
Thomas H. Shin, Hadi Amiri, **Jiali Cheng**, Jerry T. Dang, Eric G Sheu, Pourya Medhati, Vasundhara Mathur, Abdelrahman Nimeri, Ali Tavakkoli
ASMBS Annual Meeting arXiv

[8] Language-Specific Representation of Emotion-Concept Knowledge Causally Supports Emotion Inference
Ming Li, Yusheng Su, Hsiu-Yuan Huang, **Jiali Cheng**, Xin Hu, Xinmiao Zhang, Huadong Wang, Yujia Qin, Xiaozhi Wang, Zhiyuan Liu, Dan Zhang
Preprint arXiv

[9] Exploring the Impact of Model Scaling on Parameter-Efficient Tuning
Yusheng Su, Chi-Min Chan, **Jiali Cheng**, Yujia Qin, Yankai Lin, Shengding Hu, Zonghan Yang, Ning Ding, Xingzhi Sun, Guotong Xie, Zhiyuan Liu, Maosong Sun
EMNLP 2023 arXiv

[10] GNNDelete: A General Strategy for Unlearning in Graph Neural Networks
Jiali Cheng, George Dasoulas, Huan He, Chirag Agarwal, Marinka Zitnik
ICLR 2023 arXiv

[11] Lesion Search with Self-supervised Learning
Kristin Qi, **Jiali Cheng**, Daniel Haehn
ICLR 2023 Tiny Paper arXiv

[12] Jupiter: a modern federated learning platform for regional medical care
Ju Xing, Jiadong Tian, Zexun Jiang, **Jiali Cheng**, Hao Yin
Science China Information Sciences, 2021/10 arXiv

TEACHING

Computing I & II (C Programming) 2023 - 2024
Teaching Assistant, at UML

Introduction to HPC Cluster with SLURM 2018 - 2019
Lecturer, at Research Computing, NU

Introduction to Python 2018 - 2019
Lecturer, at Research Computing, NU