Zheyuan Liu

PERSONAL INFORMATION

Zheyuan Liu
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EDUCATION

09/2019–05/2023   **B.S Computer Science**
B.S Applied Mathematics (double-major)
Brandeis University, Waltham, MA, USA
Cumulative GPA: 3.87

09/2023– Current   **PhD Computer Science**
University of Notre Dame, Notre Dame, IN, USA
Cumulative GPA: 3.92
Advisor: Prof. Meng Jiang

RESEARCH INTEREST

Trustworthy Generative AI: (Multimodal) Large Language Models (LLMs and MLLMs) Safety, LLMs fairness, Machine Unlearning, Data Privacy

Knowledge-based Model Editing (KME): Knowledge Update, Knowledge Conflict, Model Editing

Data-Centric Problem and Learning: Data Augmentation, Data Generation

PUBLICATIONS

1. **LIU, ZHEYUAN**, DOU, G., JIA, M., TAN, Z., ZENG, Q., YUAN, Y., AND JIANG, M. Protecting privacy in multimodal large language models with mllmu-bench. *arXiv preprint arXiv:2410.22108* (2024)

2. **LIU, ZHEYUAN**.ET AL. Disentangling biased knowledge in large language model from reasoning through machine unlearning. *Amazon Internal Patent (In Submission of ARR)* (2024)

3. **LIU, ZHEYUAN**, DOU, G., TAN, Z., TIAN, Y., AND JIANG, M. Machine unlearning in generative ai: A survey. *arXiv preprint arXiv:2407.20516 (In Submission of CSUR)* (2024)

4. **LIU, ZHEYUAN**, DOU, G., TAN, Z., TIAN, Y., AND JIANG, M. Towards safer large language models through machine unlearning. In *ACL Findings* (2024)

5. **LIU, ZHEYUAN**, HE, X., TIAN, Y., AND CHAWLA, N. Can we soft prompt llms for graph learning tasks? In *The Web Conference (WWW) Short Paper* (2024)

6. **LIU, ZHEYUAN**, DOU, G., TIAN, Y., ZHANG, C., CHIEN, E., AND ZHU, Z. Breaking the trilemma of privacy, utility, efficiency via controllable machine unlearning. In *The Web Conference (WWW)* (2024)

7. **LIU, ZHEYUAN**, ZHANG, C., TIAN, Y., ZHANG, E., HUANG, C., YE, Y., AND ZHANG, C. G-FAME: Fair graph representation learning via diverse mixture of experts. In *The Web Conference (WWW)* (2023)

8. YANG, T., DAI, L., **LIU, ZHEYUAN**, WANG, X., JIANG, M., TIAN, Y., AND ZHANG, X. Cliperase: Efficient unlearning of visual-textual associations in clip. *arXiv preprint arXiv:2410.23330* (2024)

9. DOU, G., **LIU, ZHEYUAN**, LYU, Q., DING, K., AND WONG, E. Avoiding copyright infringement via machine unlearning. *arXiv preprint arXiv:2406.10952* (2024)

10. TAN, Z., **LIU, ZHEYUAN**, AND JIANG, M. Personalized pieces: Efficient personalized large language models through collaborative efforts. *The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP)* (2024)

11. LIANG, Z., LIU, G., **LIU, ZHEYUAN**, CHENG, J., HAO, T., LIU, K., REN, H., SONG, Z., LIU, J., YE, F., AND SHI, Y. Graph learning for parameter prediction of quantum approximate optimization algorithm. In *Design Automation Conference (DAC)* (2024)

12. TAN, Z., ZENG, Q., TIAN, Y., **LIU, ZHEYUAN**, YIN, B., AND JIANG, M. Democratizing large language models via personalized parameter-efficient fine-tuning. *The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP)* (2024)

13. TIAN, Y., ZHANG, C., KOU, Z., **LIU, ZHEYUAN**, ZHANG, X., AND CHAWLA, N. Ugmae: A unified framework for graph masked autoencoders. *arXiv preprint arXiv:2402.08023* (2024)

14. ZHANG, C., TIAN, Y., JU, M., **LIU, ZHEYUAN**, YE, Y., CHAWLA, N., AND ZHANG, C. Chasing all-round graph representation robustness: Model, training, and optimization. In *ICLR* (2023)

15. WU, J., ZHANG, C., **LIU, ZHEYUAN**, ZHANG, E., WILSON, S., AND ZHANG, C. Graph-BERT: Bridging graph and text for malicious behavior detection on social media. In *ICDM* (2022)

16. WANG, Y., PENG, H. M., SHA, L., **LIU, ZHEYUAN**, AND HONG, P. State-level covid-19 trend forecasting using mobility and policy data. *medRxiv* (2021)

INDUSTRY EXPERIENCE

05/2024 – 08/2024 **Amazon**, Seattle, WA
Applied Scientist Intern

- Worked on addressing fairness/bias issues in Large Language Models via Machine Unlearning techniques.

Teaching Experience

09/2021 – 05/2023   **Brandeis University**, Waltham, MA
Teaching Assistant

- Acted as teaching assistant for **COSI 10a** (Python), **COSI 12b** (JAVA), **COSI 103a** (Fundamentals of Software Engineering) and **COSI 131a** (Operating System class).

09/2023 – Current   **University of Notre Dame**, Notre Dame, IN
Teaching Assistant

- Acted as teaching assistant for **CSE-40923** (Case Studies in Computing-Based Entrepreneurship class) and **CSE-30353** (Signals Processing Fundamentals).

Honors, Awards & Scholarships

03/2024	Conference Presentation Grant (300 dollars)
03/2024	Zahm Professional Development Fund (1250 dollars)
05/2023	Molly W. and Charles K. Schiff Memorial Award (Top 3 %)
06/2022	Provost's Research Fellowship (5000 dollars)
12/2019	Dean's List (Every semester)
09/2017	Patent of a new type of packing tool

Service

Journals

IEEE Transactions on Big Data Reviewer
IEEE Transactions on Neural Networks and Learning Systems (TNNLS) Reviewer
TKDE Reviewer (2023, 2024)

Conferences

ICDM 2024 MLoG Workshop Reviewer
ACL 2024 Workshop KnowledgeNLP Reviewers
Program Committee of CIKM'2024 (Applied Research Track)
ARR Reviewer
NeurIPS 2024 Dataset and Benchmark Track Reviewer