Yujian Liu

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Research Interests

Large language model trustworthiness and reasoning, diffusion models

Education

University of California, Santa Barbara, Santa Barbara, CA   Sep 2022 - Now
Ph.D. student in Computer Science, advised by **Prof. Shiyu Chang**

University of Michigan, Ann Arbor, Ann Arbor, MI   Sep 2018 - May 2022
M.S. in Computer Science, advised by **Prof. Lu Wang** and **Prof. Rada Mihalcea**
B.S. in Computer Science, Minor in Mathematics
GPA: 4.00/4.00

Shanghai Jiao Tong University, Shanghai, China   Sep 2016 - Aug 2018
B.S. in Electrical and Computer Engineering
GPA: 3.75/4.00

Work Experience

MIT-IBM Watson AI Lab, Cambridge, MA   Jun 2024 - Sep 2024
Research Intern
Primary mentor: Dr. Yang Zhang

Adobe Research, San Jose, CA   Jun 2023 - Sep 2023
Research Intern
Primary mentor: Dr. Tong Yu

Publications

* co-first author
Conference Publications

[1] **Yujian Liu**, Shiyu Chang, Tommi Jaakkola, and Yang Zhang. "Fictitious Synthetic Data Can Improve LLM Factuality via Prerequisite Learning". **ICLR, 2025.** [paper] [code].

[2] **Yujian Liu**, Yang Zhang, Tommi Jaakkola, and Shiyu Chang. "Revisiting Who's Harry Potter: Towards Targeted Unlearning from a Causal Intervention Perspective". **EMNLP, 2024, Oral.** [paper] [code].

[3] Jiabao Ji, **Yujian Liu**, Yang Zhang, Gaowen Liu, Ramana Rao Kompella, Sijia Liu, and Shiyu Chang. "Reversing the Forget-Retain Objectives: An Efficient LLM Unlearning Framework from Logit Difference". **NeurIPS, 2024.** [paper] [code].

[4] Bairu Hou, **Yujian Liu**, Kaizhi Qian, Jacob Andreas, Shiyu Chang, and Yang Zhang. "Decomposing Uncertainty for Large Language Models through Input Clarification Ensembling". **ICML, 2024, Oral** [paper] [code].

[5] **Yujian Liu**, Yang Zhang, Tommi Jaakkola, and Shiyu Chang. "Correcting Diffusion Generation through Resampling". **CVPR, 2024, Highlight.** [paper] [code].

[6] Qiucheng*, **Yujian Liu***, Handong Zhao, Trung Bui, Zhe Lin, Yang Zhang, and Shiyu Chang. "Harnessing the Spatial-Temporal Attention of Diffusion Models for High-Fidelity Text-to-Image Synthesis". **ICCV, 2023.** [paper] [code].

[7] Qiucheng Wu, **Yujian Liu**, Handong Zhao, Ajinkya Kale, Trung Bui, Tong Yu, Zhe Lin, Yang Zhang, and Shiyu Chang. "Uncovering the Disentanglement Capability in Text-to-Image Diffusion Models". **CVPR, 2023.** [paper] [code].

[8] **Yujian Liu**, Xinliang Frederick Zhang, Kaijian Zou, Ruihong Huang, Nicholas Beauchamp, and Lu Wang. "All Things Considered: Detecting Partisan Events from News Media with Cross-Article Comparison". **EMNLP, 2023.** [paper].

[9] **Yujian Liu***, Laura Biester*, and Rada Mihalcea. "Improving Mental Health Classifier Generalization with Pre-Diagnosis Data". **ICWSM, 2023.** [paper]

[10] **Yujian Liu***, Xinliang Frederick Zhang*, David Wegsman, Nicholas Beauchamp, and Lu Wang. "POLITICS: Pretraining with Same-story Article Comparison for Ideology Prediction and Stance Detection". **NAACL-Findings, 2022.** [paper] [code].

Preprints

[1] **Yujian Liu**, Jiabao Ji, Tong Yu, Ryan Rossi, Sungchul Kim, Handong Zhao, Ritwik Sinha, Yang Zhang, and Shiyu Chang. "Augment before You Try: Knowledge-Enhanced Table Question Answering via Table Expansion". **arXiv, 2024.** [paper] [code].

[2] Chung Hoon Hong, Yuan Liang , Sagnik Sinha Roy, Arushi Jain, Vihang Agarwal, Ryan Draves, Zhizhuo Zhou, William Chen, **Yujian Liu**, Martha Miracky, Lily Ge, Nikola Banovic, and David Jurgens. "Audrey: A Personalized Open-Domain Conversational Bot". **arXiv, 2020.** [paper].

TEACHING AND MENTORSHIP

Teaching

- **Teaching Assistant** at University of California, Santa Barbara — Fall 2024, 2023
  Introduction to Deep Learning (CMPSC 190I)
- **Teaching Assistant** at University of California, Santa Barbara — Fall 2022
  Machine Learning (CMPSC 165B)
- **Teaching Assistant** at University of Michigan, Ann Arbor — Winter 2022
  Introduction to Natural Language Processing (EECS 487)
- **Teaching Assistant** at University of Michigan, Ann Arbor — Winter 2021
  Applied Machine Learning for Affective Computing (EECS 498)

Mentorship

- Early Research Scholars Program (University of California, Santa Barbara) — Fall 2023-Spring 2024
  Undergraduate students: Lindsey Wen, Riya Gupta, Peiyang Song, Ethan Solomon
  Project: Uncertainty in large language models
- Early Research Scholars Program (University of California, Santa Barbara) — Fall 2022-Spring 2023
  Undergraduate students: Liliana Nguyen, Hugo Lin, Shamita Gurusu, Edwin Yee, Wesley Truong
  Project: Automatic prompt generation for diffusion models
- Yifan Ke (Undergraduate at University of California, Santa Barbara) — Fall 2022-Spring 2023
  Project: Pruning for vision transformers

SELECTED AWARDS

James B. Angell Scholar, University of Michigan: March 2020
University Honors, University of Michigan: Fall 2018 - Winter 2020
University of Michigan College of Engineering Dean's Honor List: Fall 2018 - Winter 2020
SJTU Undergraduate Scholarship: Dec 2017