Zeyu Leo Liu

CONTACT INFORMATION

Email: leo.liuzeyu@gmail.com
`https://leo-liuzy.github.io/`

EDUCATION

The University of Texas at Austin August 2023 — June 2028 (Expected)
Ph.D. in Computer Science
Advisor: { Eunsol Choi, Greg Durrett }

University of Washington, Seattle September 2017 — March 2023
B.S./M.S. in Computer Science
Advisor: Noah A. Smith and Shane Steinert-Threlkeld

RESEARCH INTEREST

Natural Language Processing, specifically focusing on **Continual Learning, Pretraining, Code Generation, and Reasoning**.

INDUSTRY EXPERIENCE

Salesforce AI, Research Internship May – August 2025
Host: Yingbo Zhou
- Efficient and Structured Reasoning: Propose a new reasoning format and build a parser to turn R1-style reasoning trace into directed-acyclic graph. Supervised finetuning the model to output structured reasoning trace, improving the interpretability and monitor-ability of reasoning.

Meta AI, FAIR Accelerator, AI Resident September 2021 – September 2022
Host: Xian Li, Ves Stoyanov
- Pretraining Mixture-of-Expert LLM: Analyze existing sparsely activated memory and propose a new architectural design to enable more efficient pretraining of Sparse MoE LLMs.

Allen Institute for Artificial Intelligence (AI2), Software Engineer January – March 2021
Host: Pete Walsh

FIRST-AUTHORED PUBLICATIONS

***** = equal contribution, α = sorted alphabetically or randomly

[1] Reasoning Parser: Extracting Reasoning Structure for Efficient and more Interpretable LLM Thinking
Zeyu Leo Liu, Jiacheng Xu, Bo Pang, Haizhou Shi, Wenting Zhao, Shafiq Rayhan Joty, Yingbo Zhou
Patent under review.

[2] `PropMEND`*: Hypernetworks for Knowledge Propagation in LLMs*
Zeyu Leo Liu, Greg Durrett, Eunsol Choi
arXiv 2025.

[3] `CodeUpdateArena`*: Benchmarking Knowledge Editing on API Updates*
Zeyu Leo Liu, Shrey Pandit, Xi Ye, Eunsol Choi, Greg Durrett
arXiv 2024.

[4] *Towards A Unified View of Sparse Feed-Forward Network in Transformer*
Leo Z. Liu, Tim Dettmers, Xi Victoria Lin, Veselin Stoyanov, Xian Li
The 2023 Conference on Empirical Methods in Natural Language Processing(EMNLP), 2023.

[5] *Probing Across Time: What Does RoBERTa Know and When?*
Leo Z. Liu*, Yizhong Wang*, Jungo Kasai, Hannaneh Hajishirzi, Noah A. Smith
EMNLP Finding and EMNLP BlackboxNLP Workshop (Poster), 2021.

[6] *Linguistically-Informed Transformations (LIT): A Method for Automatically Generating Contrast Sets*
Chuanrong Li$^{\alpha}$, Lin Shengshuo$^{\alpha}$, **Leo Z. Liu**$^{\alpha}$, Xinyi Wu$^{\alpha}$, Xuhui Zhou$^{\alpha}$, Shane Steinert-Threlkeld
EMNLP BlackboxNLP Workshop (Poster), 2020.

Other Refereed Publications

* = equal contribution, α = sorted alphabetically or randomly

[1] `SSR`: Socratic Self-Refine for Large Language Model Reasoning
Haizhou Shi, Ye Liu, Bo Pang, **Zeyu Leo Liu**, Hao Wang, Silvio Savarese, Caiming Xiong, Yingbo Zhou, Semih Yavuz
ICLR 2026 submission.

[2] Learning Composable Chains-of-Thought
Fangcong Yin, **Zeyu Leo Liu**, Liu Leqi, Xi Ye, and Greg Durrett
NeurIPS 2025 Foundations of Reasoning in Language Models (FoRLM) Workshop
arXiv 2025.

[3] `ChartMuseum`*: Testing Visual Reasoning Capabilities of Large Vision-Language Models*
Liyan Tang, Grace Kim, Xinyu Zhao, Thom Lake, Wenxuan Ding, Fangcong Yin, Prasann Singhal, Manya Wadhwa, **Zeyu Leo Liu**, Zayne Sprague, Ramya Namuduri, Bodun Hu, Juan Diego Rodriguez, Puyuan Peng, and Greg Durrett
Proceedings of NeurIPS Datasets and Benchmarks Track 2025

[4] *OpenAgents: An Open Platform for Language Agents in the Wild*
Tianbao Xie, Fan Zhou, Zhoujun Cheng, Peng Shi, Luoxuan Weng, Yitao Liu, Toh Jing Hua, Junning Zhao, Qian Liu, Che Liu, **Leo Z. Liu**, Yiheng Xu, Hongjin Su, Dongchan Shin, Caiming Xiong, Tao Yu
ICLR 2024 Workshop on Large Language Model (LLM) Agents
COLM 2024.

[5] *Learning to translate by learning to communicate*
C.M. Downey*, Xuhui Zhou*, **Leo Z. Liu**, Shane Steinert-Threlkeld
The 3rd Workshop on Multilingual Representation Learning @ EMNLP, 2023.

[6] *Emergent Communication Fine-tuning (EC-FT) for Pretrained Language Models*
Shane Steinert-Threlkeld, Xuhui Zhou, **Leo Z. Liu**, C. M. Downey
ICLR EmeCom Workshop ***(Runner-up Best Paper)***, 2022.

Academic Research Experience

XLANG Lab 2023
Research Assistant, with Tao Yu

USC Information Science Institute, Natural Language Group Summer 2021
Research Intern, with Xuezhe Ma (Max) and Jonathan May

University of Washington, Noah's Ark 2019 – 2023
Research Assistant, with Noah A. Smith, Yizhong Wang, and Jungo Kasai

University of Washington, CLMBR 2020 – 2023
Research Assistant, with Shane Steinert-Threlkeld

Professional Service

Program Committee Member:

- International Conference on Learning Representations (ICLR): 2025, 2026
- Conference on Neural Information Processing Systems (NeurIPS): 2025
- Association for Computational Linguistics (ACL): 2025(Demo)
- Conference on Language Modeling (COLM): 2024, 2025
- Conference on Empirical Methods in Natural Language Processing (EMNLP): 2022, 2023
- Transactions on Machine Learning Research (TMLR): 2024
- Workshop on Simple and Efficient Natural Language Processing (SustaiNLP): 2021
- Instruction Workshop @ NeurIPS: 2023

Student Volunteer:

- Conference on Empirical Methods in Natural Language Processing (EMNLP): 2020
- Annual Meeting of the Association for Computational Linguistics (ACL): 2020

Awards & Honors

UTCS Graduate Research Assistant (GRA) Fellowship 2023 — 2028
Runner-up Best Paper, ICLR Workshop on EmeCom Workshop, 2022 [6]
Citadel UW Datathon 2nd Place $2500, 2018

Dean's List, 2017 — 2020

Departmental Service

UTCS DiRP mentor, The University of Texas at Austin — Spring 2024
Lead weekly reading group and introduce modern (post transformer) Natural Language Processing techniques to undergraduate students.

Teaching

CSE 447: Natural Language Processing, University of Washington — Winter 2023

CSE 447: Natural Language Processing, University of Washington — Autumn 2022

CSE 5/446: Machine Learning, University of Washington — Spring 2021

CSE 5/446: Machine Learning, University of Washington — Autumn 2020

CSE 5/446: Machine Learning, University of Washington — Spring 2020

CSE 5/446: Machine Learning, University of Washington — Autumn 2019

CSE 446: Machine Learning, University of Washington — Spring 2019