ZERU SHI

(Last updated: July 23, 2026)

CONTACT INFORMATION

Ph.D. Student, Department of Computer Science, Rutgers University
HOMEPAGE: Zeru_Shi homepage
PHONE: (+1)(732)354-2576 EMAIL: zeru.shi@rutgers.edu

RESEARCH INTERESTS

- **LLM/VLM Reasoning and Post-training**: I am highly interested in post-training for LLMs and VLMs. My focus is on developing more effective reinforcement learning algorithms, as well as leveraging simple and interpretable methods, to improve reasoning capabilities through post-training.
- **Agentic AI:**: I am also interested in Agentic AI, with a particular focus on empowering local language models to solve complex long-horizon tasks, such as coding and web search, at low cost. My research interests include developing effective agent harnesses with principled memory systems, designing routing strategies that optimize the trade-off between model invocation cost and task performance, and improving communication and collaboration among multiple models. Ultimately, I aim to build efficient and capable agent systems that enable local models to perform complex real-world tasks with minimal reliance on large cloud models.

EDUCATION

Rutgers University, New Brunswick, USA *September 2025 - May 2030(Expected)*
Ph.D. in Computer Science
Department of Computer Science Advisor: Dr. Ruixiang Tang

Dalian University of Technology, Liaoning, China *September 2021 - June 2025*
Bachelor of Science in Software Engineering
Department of Software Engineering Advisor: Dr. Risheng Liu

INTERNSHIP EXPERIENCE

Research Scientist Intern, NVIDIA *June 2026 - August 2026*
Research Scientist Intern, Shanghai AI Laboratory *November 2024 - April 2025*

SELECTED PUBLICATIONS

* denotes an equal contribution.

[ICML' 26] **Zeru Shi**, Zhenting Wang, Fan Yang, Qifan Wang, Ruixiang Tang. "A Single Layer to Explain Them All: Understanding Massive Values in Large Language Models" In *The International Conference on Machine Learning*

[ICLR' 25] **Zeru Shi***, Kai Mei*, Mingyu Jin, Yongye Su, Chaoji Zuo, et al. "From Commands to Prompts: LLM-based Semantic File System" In *The International Conference on Learning Representations*

[IEEE TCSVT] **Zeru Shi**, Zengxi Zhang, Kemeng Cui, Ruizhe An, Jinyuan Liu, Zhiying Jiang. "SeFENet: Robust Deep Homography Estimation via Semantic-Driven Feature Enhancement" In *IEEE Transactions on Circuits and Systems for Video Technology (IF = 11.1)*

[Under Review] **Zeru Shi**, Yingjia Wan, Zhenting Wang, Qifan Wang, Fan Yang, Elisa Kreiss, Ruixiang Tang. "Meaningless Tokens, Meaningful Gains: How Activation Shifts Enhance LLM Reasoning". In submission.

[Under Review] **Zeru Shi***, Minghao Guo*, Qingyue Jiao*, Yihao Quan, et al. "MemEye: A Visual-Centric Evaluation Framework for Multimodal Agent Memory". In submission.

[Under Review] **Zeru Shi***, Kai Mei*, Yihao Quan, Dimitris N Metaxas, Ruixiang Tang. "Improving Visual Reasoning with Iterative Evidence Refinement". In submission.

[Under Review] **Zeru Shi**, Zhenting Wang, Yongye Su, Weidi Luo, Hang Gao, et al. "Auto-Prompt Generation is Not Robust: Prompt Optimization Driven by Pseudo Gradient". In submission.

[COLM' 26] Yihao Quan, **Zeru Shi**, Jinman Zhao, Ruixiang Tang "Reinforcing Consistency in Video MLLMs with Structured Rewards" In *The Conference of Language Modeling.*

[EMNLP' 25] Yongye Su, Yucheng Zhang, **Zeru Shi**, Bruno Ribeiro, Elisa Bertino "Castle: Causal Cascade Updates in Relational Databases with Large Language Models" In *Empirical Methods in Natural Language Processing (Main)*

[ECCV' 26] Liwei Che, Zhiyu Xue, Yihao Quan, Benlin Liu, **Zeru Shi**, et al. "Counting Circuits: Mechanistic Interpretability of Visual Reasoning in Large Vision-Language Models" In *The European Conference on Computer Vision*

[IEEE TCSVT] Zengxi Zhang, **Zeru Shi**, Jinyuan Liu, Zhiying Jiang. "SeFENet: Robust Deep Homography Estimation via Semantic-Driven Feature Enhancement" In *IEEE Transactions on Circuits and Systems for Video Technology (IF = 11.1)*

SELECTED HONORS AND AWARDS

- Dalian excellent undergraduate graduates, China
- National Scholarship, China
- Special scholarship of NOK Corporation, Japan

MISCS

Services:

Conference Reviewers: ICLR 2026 · ICML 2026 · NeurIPS 2026 · ACL 2026 · EMNLP 2026 · AAAI 2027

Journal Reviewers: TOIS

Language: English, Chinese, Japanese