

# Yucheng Shi

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## Education

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- **University of Georgia**

*Ph.D. in Computer Science (Advisor: [Ninghao Liu](#))*

*Jan 2022 - Dec 2025 (Expected)*

- Outstanding Graduate Student Award - 2025.
- Dissertation Completion Award Fellowship - 2025.

- **North China Electric Power University**

*B.Eng. and M.S. in Electrical Engineering*

*Sep 2014 - Jun 2021*

- China National Scholarship - 2020.

## Experience

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- **Netflix**

*Machine Learning Research Intern*

*Sep 2025 - Dec 2025 (Upcoming)*

- Will work on leveraging **large reasoning model** to enhance video recommendation performance.

- **Tencent AI Lab (Seattle)**

*Research Scientist Intern (Mentor: [Wenhao Yu](#))*

*May 2025 - Aug 2025*

- Developed **mobile GUI agents** through reinforcement learning (**MobGRPO**) in an **online environment**.

- **Harvard Medical School**

*Student Researcher (Mentor: [Xiang Li](#))*

*May 2024 - Sept 2024*

- Developed a 70B Radiology LLM by further pre-training on **6.5M+** radiology reports with **DeepSpeed**.

## Selected Publications ([Full List](#))

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My research focuses on empowering general **foundation models** to achieve effective real-world deployment through the integration of **dynamic, domain-specific knowledge**. To this end, I first enrich models with external information, both dynamically at inference-time using **RAG** [5,6,7] and permanently through **post-training** [2,3]. However, knowledge alone is insufficient: a model must learn to act. I therefore use **RL** to guide these models in mastering interactive tasks, such as **GUI agents** [1]. Believing that **high-quality data** is the cornerstone of powerful AI, I am interested in **synthetic data generation** to create knowledge-rich [2], safe [10] assets for this process.

### Multimodal Post-Training & Agentic AI

[1] "MobileGUI-RL: Advancing Mobile GUI Agent through Reinforcement Learning in Online Environment."

– **Yucheng Shi\***, Wenhao Yu\*, Zaitang Li, Yonglin Wang, Hongming Zhang, Ninghao Liu, Haitao Mi, Dong Yu.

• (Preprint, 2025).

[2] "Enhancing Cognition and Explainability of Multimodal Foundation Models with Self-Synthesized Data."

– **Yucheng Shi**, Quanzheng Li, Jin Sun, Xiang Li, Ninghao Liu.

• (ICLR 2025), International Conference on Learning Representations, 2025.

[3] "MGH Radiology Llama: A Llama 3 70B Model for Radiology."

– **Yucheng Shi**, Peng Shu, Zhengliang Liu, Zihao Wu, Tianming Liu, Ninghao Liu, Quanzheng Li, Xiang Li.

• (Preprint, 2024).

[4] "Towards Trustworthy GUI Agents: A Survey."

– **Yucheng Shi**, Wenhao Yu, Wenlin Yao, Wenhui Chen, Ninghao Liu.

• (Preprint, 2025).

## Retrieval-Augmented Generation (RAG)

- [5] "SearchRAG: Can Search Engines Be Helpful for LLM-based Medical Question Answering?"  
– **Yucheng Shi**, Tianze Yang, Canyu Chen, Quanzheng Li, Tianming Liu, Xiang Li, Ninghao Liu.  
• (Preprint, 2025).
- [6] "Retrieval-enhanced Knowledge Editing for Multi-hop Question Answering in Language Models."  
– **Yucheng Shi**, Qiaoyu Tan, Xuansheng Wu, Shaochen Zhong, Kaixiong Zhou, Ninghao Liu.  
• (CIKM 2024), The Conference on Information and Knowledge Management, 2024.
- [7] "MKRAG: Medical Knowledge Retrieval Augmented Generation for Medical Question Answering."  
– **Yucheng Shi**, Shaochen Xu, Tianze Yang, Zhengliang Liu, Tianming Liu, Quanzheng Li, Xiang Li, Ninghao Liu.  
• (AMIA 2024), American Medical Informatics Association Annual Symposium, 2024,  
★ [Distinguished Paper Award](#).

## Trustworthy Foundation Models

- [8] "CORTEX: Concept-Centric Token Interpretation for Vector-Quantized Generative Models."  
– Tianze Yang\*, **Yucheng Shi**\*(co-first author), Mengnan Du, Xuansheng Wu, Qiaoyu Tan, Jin Sun, Ninghao Liu.  
• (ICML 2025), International Conference on Machine Learning, 2025.
- [9] "Usable XAI: 10 Strategies Towards Exploiting Explainability in the LLM Era."  
– Xuansheng Wu\*, Haiyan Zhao\*, Yaochen Zhu\*, **Yucheng Shi**\*(co-first author), Fan Yang, Tianming Liu, Xiaoming Zhai, Wenlin Yao, Jundong Li, Mengnan Du, Ninghao Liu.  
• (Preprint, 2024).
- [10] "Black-box Backdoor Defense via Zero-shot Image Purification."  
– **Yucheng Shi**, Mengnan Du, Xuansheng Wu, Zihan Guan, Jin Sun, Ninghao Liu.  
• (NeurIPS 2023), Conference on Neural Information Processing Systems, 2023.

## Graph Learning & Data Augmentation

- [11] "GiGaMAE: Generalizable Graph Masked Autoencoder via Collaborative Latent Space Reconstruction."  
– **Yucheng Shi**, Yushun Dong, Qiaoyu Tan, Jundong Li, Ninghao Liu.  
• (CIKM 2023), Conference on Information and Knowledge Management, 2023.
- [12] "ENGAGE: Explanation Guided Data Augmentation for Graph Representation Learning."  
– **Yucheng Shi**, Kaixiong Zhou, Ninghao Liu.  
• (ECML-PKDD 2023), European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, 2023.
- [13] "Chatgraph: Interpretable Text Classification by Converting Chatgpt Knowledge to Graphs."  
– **Yucheng Shi**\*, Hehuan Ma\*, Wenliang Zhong\*, Qiaoyu Tan, Xiang Li, Tianming Liu, Junzhou Huang.  
• (ICDMW 2023), International Conference on Data Mining, Data Mining Workshops, 2023.

## Technical Skills

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- **Programming:** Python, PyTorch, JAX, Shell Scripting, MySQL.
- **LLMs/LMMs Development:** Transformers, PEFT, TRL, vLLM, VERL.
- **ML Infrastructure:** Linux, Git, Docker, Slurm, Distributed Training (DeepSpeed, Ray, Accelerate).