

Zhengliang Shi

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EDUCATION

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- M.S. at Shandong University** *Sep. 2023 – Jun. 2026*
- Computer Science and Technology; GPA Rank 1 / 41
 - Supervised by Prof. *Zhaochun Ren*
 - Core Modules: Machine Learning (99), Advanced Algorithms (98)
- B.E. at Shandong University** *Sep. 2019 – Jun. 2023*
- Computer Science and Technology; GPA: 93.46 / 100, Rank: 2 / 182
 - Supervised by Prof. *Zhaochun Ren*
 - Core Modules: Advanced Mathematics (98), Discrete Mathematics (100)

RESEARCH INTERESTS

My research envisions the evolution of LLMs (and other foundation models) into autonomous research agents. To achieve this, I aim to enable LLMs to first *seek relevant information*, then *reason over the acquired knowledge*, and ultimately *accomplish complex real-world tasks*.

Part I: Tool Learning for Information Seeking

- Teaching LLMs to use diverse external tools, thereby extending their action space to acquire reliable and useful information.

Part II: Reasoning with Verifiable Information

- Enabling LLMs to flexibly reason with the information they gather from external tools, solving long-horizon reasoning tasks such as multi-hop question answering and web exploration.

Part III: Deep Research Agents

- Building LLM-based agents as independent researchers, capable of forming hypotheses, running experiments, and generating scientific reports autonomously.

> *I am also highly enthusiastic about other areas, e.g., RL, Multimodality or Agents for Social Good.*

ACADEMIC SERVICES

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- **Area Chair** for ACL Rolling Review (ARR, e.g., ACL, EMNLP and NAACL)
 - **Program Committee** for SIGIR, TheWebConf (WWW), AAAI and IJCAI
 - **Reviewer** for ARR, ICLR, ECIR, IPM (journal), TKDD (journal), TORS (journal)

RESEARCH INTERNSHIPS

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- Tencent, TEG Group, HunYuan Multimodal Model Department** *Apr. 2025 – Jun. 2025*
- Research Internship; Supervised by Dr. *Zhaopeng Tu*
 - Research Topic: Deep Research Agent; Agents for Social Science
- Leiden University (Netherlands), Institute of Computer Science** *Mar. 2025 – Apr. 2025*
- Visiting Student; Supervised by Prof. *Zhaochun Ren*, *Suzan Verberne* and *Maarten de Rijke*
 - Research Topic: Deep Research Agent
- Baidu, Search Science Team** *Sep. 2023 – Sep. 2025*
- Research Internship; Supervised by Dr. *Lingyong Yan* and Dr. *Dawei Yin*
 - Research Topic: LLM-based Agent, Retrieval-augmented generation

- Research Assistant; Supervised by Prof. *Zhaochun Ren*
- Research Topic: Retrieval-augmented Generation

PUBLICATIONS (selected; * equal contribution)

I have published 15+ papers in top-tier AI conferences that align with my research interests, such as tool-use agent and Deep Research. Below are **selected** papers. See the full list in **[Google Scholar]**.

Tool-use LLM / Tool-use Agent

- [1] Tool Learning in the Wild: Empowering Language Models as Automatic Tool Agents; **WWW** 2025
Zhengliang Shi, Shen Gao, Lingyong Yan, Yue Feng, Xiuyi Chen, Haibo Shi, Dawei Yin, Zhumin Chen, Suzan Verberne, Zhaochun Ren;
- [2] Retrieval Models Aren't Tool-Savvy: Benchmarking Tool Retrieval for Large Language Models; **ACL** 2025
Zhengliang Shi, Yuhan Wang, Lingyong Yan, Pengjie Ren, Shuaiqiang Wang, Dawei Yin, Zhaochun Ren;
- [3] Learning to Use Tools via Cooperative and Interactive Agents; **EMNLP** 2024
Zhengliang Shi, Shen Gao, Xiuyi Chen, Lingyong Yan, Haibo Shi, Dawei Yin, Zhumin Chen, Pengjie Ren, Suzan Verberne, Zhaochun Ren
- [4] Iterative Tool Learning from Introspection Feedback by Easy-to-Difficult Curriculum; **AAAI** 2024
Shen Gao*, **Zhengliang Shi***, Minghang Zhu, Bowen Fang, Xin Xin, Pengjie Ren, Zhumin Chen, Jun Ma, Zhaochun Ren;

Reasoning with Verifiable Information

- [1] Iterative Self-incentivization Empowers Large Language Models as Agentic Searchers; **NeurIPS** 2025
Zhengliang Shi, Lingyong Yan, Dawei Yin, Suzan Verberne, Maarten de Rijke, Zhaochun Ren
- [2] Generate-then-Ground in Retrieval-Augmented Generation for Multi-hop Question Answering; **ACL** 2024
Zhengliang Shi, Shuo Zhang, Weiwei Sun, Shen Gao, Pengjie Ren, Zhumin Chen, Zhaochun Ren

TEACHING ASSISTANCE

I have served as a Teaching Assistant for courses including *Social Network and Public Opinion Analysis* (2023), *Operating Systems* (2022), and *Databases* (2022). I also spent time organizing research activities for undergraduate students and helping them in completing their theses and research projects.

HONORS (SELECTED)

National Scholarship, Ministry of Education, China (M.S.)	2025
Dean's Scholarship, Department of Computer Science (M.S.)	2024
Outstanding Graduate (B.E.)	2023
Academic Scholarship (B.E.)	2021, 2022, 2023
Presidential Scholarship (B.E.)	2023
Dean's Scholarship, Department of Computer Science (B.E.)	2023
National Scholarship, Ministry of Education, China (B.E.)	2022