Zach (Pufan) Zuo

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Education

The University of Utah *Aug 2026 – Present*
Ph.D. in Computer Science *Salt Lake City, UT, USA*
Advised by Prof. Mu Zhang

Northeastern University (985/211 Project, Double First-Class) *Sep 2022 – Jul 2026*
B.E. in Computer Science & Technology *Shenyang, China*
Advised by Prof. Yanfeng Zhang

Research Interests

- AI/LLM/VLM agent security, especially security risks in AI workflows where models are tightly intertwined with code logic.
- Attack surfaces in LLM/VLM-powered agents (web-based agents, tool-using agents); adversarial manipulation of perception, reasoning, memory, and action pipelines.
- Security risks of AI-enabled applications and AI-driven software development processes; preventing harmful or unintended agent behaviors in real-world tasks.

Industry Experience

CelerData Inc. *Feb. 2025 – Nov. 2025*
Technical Ecological Construction Engineer *Menlo Park, CA, USA*

- Designed ecosystem-specific data integration solutions with kernel-level optimizations for StarRocks database engine
- Led Apache Arrow & RPC framework integration achieving 20× general query speedup (peak 160×), with open-source contributions : github.com/StarRocks/starrocks/pull/57956
- Developed official BI connectors: StarRocks Tableau JDBC Connector and dbt-starrocks adapter

Beijing Dajia Internet Information Technology Co., Ltd (Kuaishou) *Jul. 2024 – Dec. 2024*
R&D Performance Platform Intern *Beijing, China*

- Contributed to the development of KDev, Kuaishou's in-house API testing platform, including task scheduling for KAPI (Kuaishou's internal API platform) to support automated data migration between versions and the cleanup of empty directories generated by the platform.
- Participated in the design of the HTTP API Swagger parsing framework, enabling the parsing of Swagger 3.0 specifications via OpenAPI to extract low-level data types and enumerated values.
- Implemented support for file upload types in the API mocking and proxy forwarding module, and introduced dynamic Kconf configuration with upload size limits of up to 200MB.

Beijing Sankuai Network Technology Co., Ltd (Meituan) *Mar. 2024 – Jul. 2024*
Java Software Development Intern *Beijing, China*

- Participated in the foundational development of Strategy Analysis Tool 2.0, a Meituan in-house ToB platform for business strategy evaluation and optimization.
- Utilized Lion, Meituan's distributed configuration management system, to dynamically adjust the UI layout of the 1.0 version and conduct A/B testing for strategy optimization, comparing different matching strategies across adjacent data slices to improve overall service quality.
- Mitigated the risk of large-scale data growth (250GB per table) by implementing sharding and tiered

storage using MySQL for hot data and Blade (an internal storage system built on TiDB) for cold data management.

Research Experience

iDC-NEU Research Group *Jul. 2024 – Mar. 2025*
Research Intern *Prof. Yanfeng Zhang and Prof. Shufeng Gong*

- Software-Hardware Cooperative Optimization
- Researched SPANN and SPFresh, and optimized vector database system I/O using SPDK.

Artificial Intelligence Lab of NEU *Mar. 2023 – Jul. 2023*
Research Intern *Prof. Miao Fang*

- Learned deep learning fundamentals such as logistic regression, regularization, and CNN.

Awards & Open Source

StarRocks Active Contributor Feb. 2025 – Nov. 2025
Core maintainer for 10K+ star MPP database project

National Prize Jul. 2024 - Nov. 2024
National Computer System Capability Competition

Technical Skills

Languages	C/C++, Python, Java, Golang, SQL, CUDA, C#, MATLAB, HTML, CSS, JavaScript
Databases	StarRocks, MySQL, TiDB, MongoDB, Redis, Databricks
Frameworks	PyTorch, Spring (MVC/Boot/Cloud/Security) , Flask, Apache Arrow, MyBatis, Dubbo
Systems	Linux/Unix, Docker, Distributed Systems, MPP
Tools	Git, LaTeX, Spark, Kafka, Selenium, DBT, Tabular, FIO, SPDK, Maven, Nginx, Drools