ZHENGJIE JI

Ph.D. Student, Department of Computer Science, Virginia Tech

zhengjie@vt.edu ⋄ Homepage ⋄ Google Scholar Profile

RESEARCH INTERESTS

My research focuses on operating systems, with an emphasis on eBPF and verification. I am currently working on operating system verification, investigating formal methods to enhance reliability and correctness of OS components. My previous work explored system auditing, cyber threat intelligence (CTI), and the application of large language models (LLMs) to enhance cybersecurity practices, particularly in generating security tests.

EDUCATION

Ph.D. in Computer Science, Virginia Tech	2022 - present
M.S. in Computer Science and Engineering, KTH Royal Institute of Technology	2020 - 2023
B.E. in Electrical and Computer Engineering, Shanghai Jiao Tong University	2017 - 2021

HONORS AND AWARDS

Bitshares Fellowship, Virginia Tech	2023
CCI SWVA Cyber Innovation Scholarship, Virginia Tech	2023
KTH Covid-19 Financial Aid Scholarship, KTH Royal Institute of Technology	2021
Hattrick Award, KTH Royal Institute of Technology	2020

PUBLICATIONS

CONFERENCE PAPERS

1. Eliminating eBPF Tracing Overhead on Untraced Processes
   Milo Craun, Khizar Hussain, Uddhav Gautam, Zhengjie Ji, Tanuj Rao, Dan Williams. *Workshop on eBPF and Kernel Extensions*, 2024.

2. How well does LLM generate security tests?
   Ying Zhang, Wenjia Song, Zhengjie Ji, Daphne Yao, Na Meng. *CoRR arXiv*, 2023.

3. PrivMon: A Stream-Based System for Real-Time Privacy Attack Detection for Machine Learning Models
   Myeongseob Ko, Xinyu Yang, Zhengjie Ji, Hoang Anh Just, Peng Gao, Anoop Kumar, Ruoxi Jia. *International Symposium on Research in Attacks, Intrusions and Defenses*, 2023.

4. ThreatKG: A System for Automated Open-Source Cyber Threat Knowledge Gathering and Management
   Peng Gao, Xiaoyuan Liu, Edward Choi, Sibo Ma, Xinyu Yang, Zhengjie Ji, Zilin Zhang, Dawn Song. *CoRR arXiv*, 2022.

5. A Hybrid Queuing Model for Coordinated Vehicle Platooning on Mixed-Autonomy Highways: Training and Validation
   Haoran Su, Zhengjie Ji, H. Johansson, Li Jin. *CoRR arXiv*, 2021.

DEMO PAPERS

1. A Knowledge Base Question Answering System for Cyber Threat Knowledge Acquisition
   Zhengjie Ji, Edward Choi, Peng Gao. *IEEE International Conference on Data Engineering*, 2022.

POSTERS

1. Poster: ThreatKG - A System for Automated Cyber Threat Knowledge Gathering and Management
   Zhengjie Ji*, Xiaoyuan Liu* (* equal contribution), Edward Choi, Sibo Ma, Xinyu Yang, Dawn Song, Peng Gao. *IEEE Symposium on Security and Privacy*, 2023.

PROFESSIONAL SERVICES

External Reviewer, *Journal of Complex Networks*	2023
External Reviewer, *IEEE Transactions on Dependable and Secure Computing*	2023
External Reviewer, *ACM Conference on Computer and Communications Security*	2023
Conference Volunteer, *ACM Conference on Computer and Communications Security*	2022

TEACHING EXPERIENCE

Teaching Assistant, CS2114 Software Design and Data Structures, Virginia Tech	2024
Teaching Assistant, CS5560 Fundamentals of Info Security, Virginia Tech	2024
Teaching Assistant, CS5594 Blockchain Technologies, Virginia Tech	2023
Teaching Assistant, VE492 Intro to Artificial Intelligence, Shanghai Jiao Tong University	2021

SKILLS

Languages: English / Mandarin
Programming: C / C++ / Rust / Python / Java / JavaScript / SQL
Technical Experience: eBPF / QEMU / Docker / Kubernetes / PostgreSQL / Neo4j / Elasticsearch / Splunk

ENTRACURRICULAR ACTIVITIES

President, Shanghai Jiao Tong University Small Animal Protection Association (SJTUSAPA)	2018 - 2020