ZHAOYU WANG

Room 1524, Academic Building, HKUST, Sai Kung, Hong Kong SAR
(+852) 66894639 ⋄ zwangjz@connect.ust.hk ⋄ https://wangzhaoyu07.github.io

EDUCATION

HKUST — **Hong Kong SAR**
Ph.D. in Computer Science and Engineering — *September 2023 - now*

Tongji University — **Shanghai, China**
B.Eng. in Data Science and Technology — *September 2019 - June 2023*

RESEARCH INTERESTS

- Privacy-preserving and trustworthy data management
- Verifiable computation and zero-knowledge proofs

PUBLICATIONS

(Co-first author)*

1. Zhantong Xue, Pingchuan Ma, **Zhaoyu Wang**, Yuguang Zhou, Huaijin Wang, and Shuai Wang. "Sound Debloating of Redundant Checks in Zero-Knowledge Machine-Learning Circuits." *ACM Conference on Computer and Communications Security* (**CCS 2026**). Forthcoming.
2. **Zhaoyu Wang**, Pingchuan Ma, Zhantong Xue, Yanbo Dai, Zhenlan Ji, and Shuai Wang. "Privacy-preserving and Verifiable Causal Prescriptive Analytics." *ACM SIGMOD International Conference on Management of Data* (**SIGMOD 2026**).
3. Pingchuan Ma, **Zhaoyu Wang**, Zhenlan Ji, Zongjie Li, Ao Sun, and Shuai Wang. "Guardrail: Automated Integrity Constraint Synthesis From Noisy Data." *ACM SIGMOD International Conference on Management of Data* (**SIGMOD 2026**).
4. Zhenlan Ji, Pingchuan Ma, Zongjie Li, **Zhaoyu Wang**, and Shuai Wang. "Benchmarking and Explaining Large Language Model-based Code Generation: A Causality-Centric Approach." *ACM SIGSOFT International Symposium on Software Testing and Analysis* (**ISSTA 2025**).
5. Pingchuan Ma*, **Zhaoyu Wang***, Zongjie Li, Zhenlan Ji, Ao Sun, Juergen Rahmel, and Shuai Wang. "Reeq: Testing and Mitigating Ethically Inconsistent Suggestions of Large Language Models with Reflective Equilibrium." *ACM Transactions on Software Engineering and Methodology* (**TOSEM 2025**).
6. **Zhaoyu Wang**, Pingchuan Ma, Huaijin Wang, and Shuai Wang. "PP-CSA: Practical Privacy-Preserving Software Call Stack Analysis." *ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications* (**OOPSLA 2024**).
7. **Zhaoyu Wang**, Pingchuan Ma, and Shuai Wang. "Towards Practical Federated Causal Structure Learning." *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (**ECML-PKDD 2023**).

PREPRINTS

(† Corresponding author)

1. Pingchuan Ma, **Zhaoyu Wang**†, Zimo Ji, Yuguang Zhou, Zhantong Xue, Zongjie Li, Shuai Wang, and Xiaoqin Zhang. "AutoSpec: Safety Rule Evolution for LLM Agents via Inductive Logic Programming." *arXiv preprint* arXiv:2606.24245.
2. Yuguang Zhou, Xunguang Wang, Pingchuan Ma, Zhantong Xue, **Zhaoyu Wang**, and Shuai Wang. "From Shield to Target: Denial-of-Service Attacks on LLM-Based Agent Guardrails." *arXiv preprint* arXiv:2606.14517.

3. **Zhaoyu Wang**, Pingchuan Ma, Zhantong Xue, Yuguang Zhou, Qixin Zhang, Xiaoqin Zhang, and Shuai Wang. "ZK-Value: A Practical Zero-Knowledge System for Verifiable Data Valuation." *arXiv preprint* arXiv:2605.03581.
4. Zhantong Xue, Pingchuan Ma, **Zhaoyu Wang**, Yuguang Zhou, Xiaoqin Zhang, Shuai Wang, and Juergen Rahmel. "From Evaluation to Enhancement: Large Language Models for Zero-Knowledge Proof Code Generation." *arXiv preprint* arXiv:2509.11708.
5. Zhantong Xue, Pingchuan Ma, **Zhaoyu Wang**, Yuguang Zhou, and Shuai Wang. "A zk-SNARK Programming Framework for Verifiable Data Analytics." *IACR Cryptology ePrint Archive* 2025/572.

PATENTS

- Pingchuan Ma, **Zhaoyu Wang**, Shuai Wang, and Xiaoqin Zhang. *Method for Verifying String Profiling Results Based on Zero-Knowledge Proofs*. CN 202611024917.4. Filing Date: 10 Jul 2026
- Pingchuan Ma, Shuai Wang, **Zhaoyu Wang**. *Method and System for Identifying Integrity Constraints from Noisy Data*. CN 202610706202.0. Filing Date: 21 May 2026
- Pingchuan Ma, Shuai Wang, **Zhaoyu Wang**. *Enhanced Zero-Knowledge Analysis*. US 19/257400, CN 202510956434.7, HK 42026123482.7. Filing Date: 1 Jul 2025
- Pingchuan Ma, Shuai Wang, **Zhaoyu Wang**. *Enhanced Distributed Zero-Knowledge Proof Generation*. US 19/173756, CN 202510892963.5, HK 42026123481.9. Filing Date: 8 Apr 2025

TECHNOLOGY TRANSFER

- **Commercial Licensing of Zero-Knowledge Technologies** *March 2025*
  Co-inventor of two technologies for zero-knowledge analysis and distributed proof generation, licensed by HKUST R&D Corporation to CipherInsight Limited, a Hong Kong fintech startup.

AWARDS AND GRANTS

- SIGMOD Student Travel Grant, June 2026
- FinTech Award (Bronze), Hong Kong ICT Awards 2025
- Cybersecurity Project of the Year, Tech Fest Hong Kong Awards 2025
- UGC Research Travel Grant, 2025-26 Academic Year
- UGC Research Travel Grant, 2024-25 Academic Year
- UGC Research Travel Grant, 2023-24 Academic Year

EXPERIENCE

- Research Assistant, HKUST, mentored by Prof. Shuai Wang *2023.02 - 2023.08*
- Exchange Student, École Polytechnique Fédérale de Lausanne *2022.09 - 2023.01*
- Research Assistant, HKUST, mentored by Prof. Shuai Wang *2022.06 - 2022.09*

ACADEMIC SERVICE

Sub-Reviewer of S&P'27, ICML'26, OOPSLA'26, ASE'25, CCS'25, ICML'25, NeurIPS'25, S&P'25, ACL Rolling Review'25, LLM4Code'25, FSE'24, ECML-PKDD'23, PETS'23, and IEEE TC (2026).

TEACHING EXPERIENCE

- Teaching Assistant, HKUST, COMP 4331: Data Mining *Fall 2025*
- Teaching Assistant, HKUST, COMP 2011: Programming with C++ *Fall 2024*