Mingfei Zhang

mingfei.zh@outlook.com

+86 152-6577-8566

github.com/Mart1i1n · mart1i1n.github.io/mingfei

RESEARCH INTERESTS

Blockchain security, consensus protocol analysis, incentive mechanism design, and Layer 2 protocol development — with a focus on discovering and fixing real-world vulnerabilities in production systems (Ethereum PoS, Polkadot NPoS). Research outcomes have been adopted into official Ethereum upgrade proposals.

EDUCATION

Shandong University, School of Cyberspace Science and Technology Sep. 2022 – Present

Ph.D. in Cybersecurity | GPA: 4.3/5.0 · Rank: 2/62

Advisors: Prof. Xiaoyun Wang (Member, Chinese Academy of Sciences; Tsinghua University / Shandong University) and Prof. Sisi Duan (Tsinghua University)

Shandong University Sep. 2018 – Jun. 2022

B.S. in Information Security | GPA: 4.0/5.0 · Rank: 4/81

EXPERIENCE

WeBank — Blockchain Research Intern Apr. 2026 – Jun. 2026

- Contributed to Layer 2 protocol development, focusing on scalability and security of permissioned blockchain infrastructure.

SELECTED PUBLICATIONS

[1] A Liveness Attack to Ethereum PoS with No Additional Cost **IEEE S&P 2026**

Mingfei Zhang, Rujia Li, Xueqian Lu, and Sisi Duan

[2] Risk-free Selfish Mining in Hybrid Predictability Model: A Case Study on Polkadot's NPoS **WWW 2026**

Mingfei Zhang, Rujia Li, Xinyu Lei, and Sisi Duan

[3] BunnyFinder: Finding Incentive Flaws for Ethereum Consensus **NDSS 2026**

Rujia Li, **Mingfei Zhang**, Xueqian Lu, Wenbo Xu, Ying Yan, Sisi Duan

[4] Available Attestation: Towards a Reorg-Resilient Solution for Ethereum Proof-of-Stake **USENIX Security 2025**

Mingfei Zhang, Rujia Li, Xueqian Lu, and Sisi Duan

↳ *Adopted as **EIP-7942** — a headliner EIP for the Ethereum Glamsterdam upgrade*

[5] Max Attestation Matters: Making Honest Parties Lose Their Incentives in Ethereum PoS **USENIX Security 2024**

Mingfei Zhang, Rujia Li, and Sisi Duan

KEY CONTRIBUTIONS & IMPACT

- **Ethereum Protocol Impact:** Discovered and responsibly disclosed multiple consensus-layer vulnerabilities in Ethereum PoS. The defensive solution (Available Attestation) was adopted as **EIP-7942**, now a headliner EIP in the upcoming Glamsterdam upgrade.
- **Attack Tooling:** Identified the Staircase Attack and a zero-cost liveness attack against Ethereum PoS; built BunnyFinder, an automated tool for detecting incentive flaws in consensus protocols.
- **Cross-chain Analysis:** Demonstrated risk-free selfish mining in Polkadot's NPoS, extending incentive-flaw analysis to heterogeneous PoS systems beyond Ethereum.
- **Open Source:** All major attack implementations and defensive tools publicly available at github.com/Mart1i1n.

GRANTS & HONORS

- National Natural Science Foundation of China (NSFC) — Youth Student Basic Research Project (Ph.D.) 2026
  Principal Investigator
- National Scholarship 2025
  Doctoral level, Shandong University
- First-Class Academic Scholarship 2023, 2024
  Shandong University

TECHNICAL SKILLS

Security	Consensus protocol analysis, incentive modeling, vulnerability discovery & responsible disclosure, fuzzing
Blockchain / Web3	Ethereum (PoS / EVM / Beacon Chain), Polkadot (NPoS), Solana, BNB Chain, Layer 2, Solidity, smart contract auditing
Programming	Python, Go, Solidity, C/C++, Shell
Tools	Go-Ethereum, Docker, Linux, Git, formal modeling, network simulation
Languages	Mandarin (native), English (professional — all publications in English)

ACADEMIC SERVICE

External reviewer / subreviewer for IEEE S&P, USENIX Security, ACM CCS, NDSS, and related venues.