Jiaqi Chen

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Research Interest

Software security and application security in emerging domains, e.g., smart contract, blockchain, and LLM/AI

- Vulnerability discovery (by program analysis + AI) *WWW'24 [5], In submission [11]*
- Security measurement *EuroSP'2023, NDSS'21,In submission [9]*
- Blockchain systems security *WWW'24 [7], Middleware'20, IMC'21*
- Deception schemes and scams *In submission [10]*

Education

- **Syracuse University** *Aug. 2020 - Present*
  Ph.D., Electrical & Computer Engineering GPA: 3.82/4
- **Syracuse University** *Aug. 2018 - Aug. 2020*
  Master's degree, Computer Science GPA: 3.95/4
- **Shanghai Jiao Tong University** *Feb. 2015 - June. 2018*
  Master's degree, Computer Technology
- **Harbin Institute of Technology** *Sep. 2008 - Jun. 2012*
  Bachelor's degree, Measurement Control Technology

Publication

[11] Unveiling tMEV: Token-Oriented Blockchain Extractable Value
Jiaqi Chen, Yuzhe Tang, Yue Duan
In submission; Presentation at WSC'26; https:// arxiv.org/ pdf/ 2603.07996 .

[10] GREEDYKPOT: Exploiting Greedy Blockchain Users via Deliberately Leaked Keys
Jiaqi Chen, Yuxuan Zhou, Yuzhe Tang, Guofei Gu, Zhiqiang Lin
In submission

[9] Unveiling Unextractable Arbitrage: Towards Understanding Hidden MEV Opportunities on Blockchains
Jiaqi Chen, Yuzhe Tang
In submission

[8] Uncovering the Misuse of Leaked Keys on Evolving Ethereum: A Longitudinal Study
Yuxuan Zhou*, **Jiaqi Chen***, Yibo Wang, Yuzhe Tang, Guofei Gu (***co-first authors**)
In submission

[7] Towards Understanding Crypto-Asset Risks on Ethereum Caused by Key Leakage on the Internet
Yuxuan Zhou*, **Jiaqi Chen***, Yibo Wang, Yuzhe Tang, Guofei Gu (***co-first authors**)
*In proceedings of Web Conference 2024 (**WWW'24**)*

[6] Understanding the Security Risks of Decentralized Exchanges by Uncovering Unfair Trades in the Wild
Jiaqi Chen, Yibo Wang, Yuxuan Zhou, Wanning Ding, Yuzhe Tang, Xiaofeng Wang, Kai Li
*In proceedings of IEEE European Symposium on Security and Privacy 2023 (**EuroS&P'23**)*

[5] Characterizing Ethereum Upgradable Smart Contracts and Their Security Implications
Xiaofan Li, Jin Yang, **Jiaqi Chen**, Yuzhe Tang, Xing Gao
*In proceedings of Web Conference 2024 (**WWW'24**)*

[4] Towards Saving Blockchain Fees via Secure and Cost-Effective Batching of Smart-Contract Invocations
Yibo Wang, Kai Li, Yuzhe Tang, **Jiaqi Chen**, Qi Zhang, Xiapu Luo, Ting Chen
*In IEEE Transactions on Software Engineering 2023 (**TSE'23**)*

[3] TopoShot: Uncovering Ethereum's Network Topology Leveraging Replacement Transactions
Kai Li, Yuzhe Tang, **Jiaqi Chen**, Yibo Wang, Xianghong Liu
*In ACM Internet Measurement Conference 2021 (**IMC'21**)*

[2] As Strong As Its Weakest Link: How to Break Blockchain DApps at RPC Service
Kai Li, **Jiaqi Chen**, Xianghong Liu, Yuzhe Tang, Xiaofeng Wang, Xiapu Luo
*In The Network and Distributed System Security Symposium 2021 (**NDSS'21**)*

[1] Cost-Effective Data Feeds to Blockchains via Workload-Adaptive Data Replication
Kai Li, **Jiaqi Chen**, Xianghong Liu, Yuzhe Tang, Xiaofeng Wang, Xiapu Luo
*In ACM/IFIP International Middleware Conference 2020 (**Middleware'20**)*

Work in progress

- saferBB: Protecting Block Builders against DoS Attacks
  Jiaqi Chen, Yuzhe Tang, Meng Xu
  In preparation.
- Benchmarking LLMs' Understanding of Profitable Activities on Blockchains
  Jiaqi Chen, Yuzhe Tang
  In preparation.
- Denial of Continuous Integration Service
  Md Rizwanul Haque, Yuxuan Zhou, Yibo Wang, **Jiaqi Chen**, Yuzhe Tang, Xing Gao
  In submission.

Project Experience

- Dissertation research at SU: **Economic Security in Blockchain Applications** *June. 2022 - Present*
  – Measurement study to uncover unfair trades worth 3.88 million USD on Ethereum, published in **EuroS&P 2023**
  – Smart-contract analysis to systematically discover new forms of MEV, in submission to .
    ∗ Extracted up to 10× more profit (1.5 million USD) with the proposed MEV method compared to observed MEV.
  – Studies the liveness of MEV and uncovered locked pools, in submission.

- Research project at SU: **Economics in Blockchain-based Deception Schemes** *Aug 2024 - Present*
  – Collected and analyzed Ethereum private keys posted on major social platforms such as GitHub and Twitter, verifying whether they belonged to compromised accounts by examining transactions from the associated addresses and presented in **WWW 2024**.
  – Analyzed leaked Ethereum accounts and discovered that accounts exhibited honeypot behavior. By cross-referencing this with information from social media, we identified a pattern in honeypots. in submission.

- Research project at SU: **LLM × MEV: Benchmarking & Enhancement** *June. 2025 - Present*
  – Designed LLM prompts to generate a benchmark for evaluating if LLMs can identify and simulate MEV opportunities.
  – The benchmark incorporates multiple models, including ChatGPT, DeepSeek, and Gemini.
  – Applied advanced LLM techniques, including fine-tuning, chain-of-thought (CoT), and multi-agent frameworks, to improve performance and accuracy of results.

- Internship at CertiK: **Smart Contract Audit & Vulnerability Detection** *May. - Aug. 2024, Jan. - Apr. 2026*
  – Discovered a vulnerability in the EigenDA application.
  – Designed and reported an attack in which the operator could send an incorrect blob responding to a victim's request.
  – Wrote exploit reports for 7 real-world attacks.

- Research project at SU: **Saving Gas Fee on Blockchains** *Aug 2022 - Aug 2020*
  – Designed a cost-effective data feed that dynamically replicates data between the blockchain and off-chain cloud storage, reducing gas fees by 10%–74%. published in **Middleware 2020**
  – Contributed to the development of a middleware system on Ethereum that securely batches smart contract invocations through an untrusted off-chain relay server, achieving 14.6%–59.1% gas savings.

- Educational research at SU: **Smart Contract Hands-on Labs** *Nov. 2021 - May. 2023*
  – https://github.com/badd-labs/badd-labs

AWARDS

• NDSS 2021 Student Travel Grant, • ESEC/FSE 2021 Student Travel Grant, • SecDev 2023 Student Travel Grant,
• IEEE S&P 2021 Student Travel Grant, • ETHICS 2023 Student Travel Grant

Technical Skills and Interests

- Static analysis and symbolic execution on source code and bytecode.
- Project experience with supervised machine learning.
- Experienced in LLM API integration, configuration, and advanced prompt engineering.
- Understand leading DEX like Uniswap V2/V3, lending services like compound and restaking system Eigenlayer.
- Other skills: Python, Go, Solidity, C/C++, Java, SQL, Mythril, NuSMV

Service

- **Teaching Assistant**
  - *CIS600 Blockchain and cryptocurrency* Fall'19/ '20/ '22
  - *CSE581, Introduction to Database Management Systems* Spring'21
  - *CIS600, Internet of Things* Fall'24
  - *CIS657, Principles of Operating Systems* Spring'25

Reference Contact List

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