Zhuo Cai ✉ zcaiam@connect.ust.hk
🌐 https://zhuocai.github.io

Education

2023 – Now 🔖 **Hong Kong University of Science and Technology, Hong Kong**
PhD in Computer Science and Engineering
Co-Supervised by Amir Goharshady & Dimitris Papadopoulos
Research Interest: Cryptography, Theoretical Computer Science.

2021 – 2023 🔖 **Hong Kong University of Science and Technology, Hong Kong**
Master of Philosophy in Computer Science and Engineering
Supervisor: Amir Goharshady
GPA: 3.88/4.0

2017 – 2021 🔖 **Tsinghua University, Beijing**
Bachelor of Automation
GPA: 3.81/4, GPA Ranking: 17/168

2019 Fall 🔖 **National University of Singapore, Singapore**
Visiting Undergraduate Researcher
GPA: 4.0/4

Research Publications

1. Abidha V., Barakbayeva T., **Cai, Z.**, & Goharshady, A. (2024). Gas-efficient decentralized random beacons. In IEEE ICBC.

2. Barakbayeva T., **Cai, Z.**, & Goharshady, A. (2024). SRNG: an efficient decentralized approach for secret random number generation. In IEEE ICBC.

3. **Cai, Z.**, Farokhnia, S., Goharshady, A., & Hitarth, S. (2023). Asparagus: Automated synthesis of parametric gas upper-bounds for smart contracts. In OOPSLA.

4. Ballweg, J., **Cai, Z.**, & Goharshady, A. (2023). PureLottery: Fair leader election without decentralized random number generation. In IEEE Blockchain.

5. **Cai, Z.**, & Goharshady, A. (2023). Trustless and bias-resistant game-theoretic distributed randomness. In IEEE ICBC.

6. **Cai, Z.**, & Goharshady, A. (2023). Game-theoretic Randomness for Proof-of-Stake. In MARBLE.

7. He, X., **Cai, Z.**, Wei, W., Zhang, Y., Mou, L., Xing, E., & Xie, P. (2021). Towards visual question answering on pathology images. In ACL.

Miscellaneous Experience

Awards and Achievements

2023 🔖 **Hong Kong PhD Fellowship**
🔖 **Young Researcher, 10th Heidelberg Laureate Forum**
🔖 **Research Travel Grant**, HKUST

Miscellaneous Experience (continued)

2019   **Honor of Academic Excellency**, Tsinghua University.
Awarded to top 10% students.

2018   **Honor of Academic Excellency**, Tsinghua University.

2016   **1st Level in National High School Mathematics League**, the Chinese Mathematical Society.
Ranked within the top 2% in the provice of Anhui.

Extracurricular Experience

Dec 2019 - May 2021   President of iOS Club, Tsinghua University.

Aug 2018 - Aug 2019   Leader of the Students' Association of Science and Technology (Competition Branch), Department of Automation, Tsinghua University.

Teaching

2024 Spring, TA   **Hong Kong University of Science and Technology**
COMP 4541: Blockchains, Cryptocurrencies and Smart Contracts

2022 Spring & Fall, TA   **Hong Kong University of Science and Technology**
COMP 2012: Object-Oriented Programming and Data Structures

Skills

Languages   Native in Mandarin Chinese, proficient in English (TOEFL:106, GRE:158+170).

Coding   C/C++, Python, MATLAB, JAVA, PyTorch, HTML, LaTeX, …