

Education





- 2023 – Now  **Hong Kong University of Science and Technology, Hong Kong**
PhD in Computer Science and Engineering
Supervisor: Amir Goharshady
Research Interest: Cryptography, Blockchain, 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. Cai, Z., Farokhnia, S., Goharshady, A., & Hitarth, S. (2023). Asparagus: Automated synthesis of parametric gas upper-bounds for smart contracts. In OOPSLA.
2. Ballweg, J., Cai, Z., & Goharshady, A. (2023). PureLottery: Fair leader election without decentralized random number generation. In IEEE Blockchain.
3. Cai, Z., & Goharshady, A. (2023). Trustless and bias-resistant game-theoretic distributed randomness. In IEEE ICBC.
4. Cai, Z., & Goharshady, A. (2023). Game-theoretic Randomness for Proof-of-Stake. In MARBLE.
5. 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**
- 2019  **Honor of Academic Excellency, Tsinghua University.**
Awarded to top 10% students.
- 2018  **Honor of Academic Excellency, Tsinghua University.**

Miscellaneous Experience (continued)

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

- 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 , ...