

Aoxuan (Douglas) Li

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Education

PhD in Computer Science

Macao Polytechnic University, 2021 – Present

Master of Science in Computer Science

University of California, Los Angeles, Sep 2017 – Jun 2019

GPA: 3.81/4.0

Master Thesis: On Explicit Depth Robust Graphs

Bachelor of Science in Computing

Macao Polytechnic Institute, 2013 – 2017

Overall GPA: 3.56/4.0

Work Experiences

Researcher at Nethermind

Aug 2023 – Nov 2023

- Reduced final argument proof size and verification complexity in STARK algorithm.

Chief Scientist and Co-Founder at Mystiko.Network

Nov 2020 – Aug 2023

- Designed the first auditable web3 zero-knowledge connectivity and privacy base layer.

Software Engineer at Stealth Software Technologies, Los Angeles

July 2019 – July 2020

- Designed and developed front-end of cryptography applications.
- Designed a new Private Set Intersection algorithm.
- Developed efficient cryptography software using Java.

Internship as Penetration Tester at Unisguard Technology Ltd, Beijing

July 2016 – Aug 2016

- Performed formal penetration tests on web-based applications of HengFeng Bank and China Minsheng Bank using Nmap, Sqlmap, Burpsuite on Kali Linux.

Professional Experiences

Visiting PhD at University of Bologna

May 2024 – Aug 2024

- Blockchain research advised by Prof. Gabriele D'Angelo.

Research Assistant at UCLA

Jan 2018 – June 2019

- Cryptography and theoretical computer science research advised by Prof. Rafail Ostrovsky.

Research Assistant in Cuneiform Digital Library Initiative at UCLA

Jan 2018 – March 2019

- Designed, developed, and maintained a CentOS server and MySQL server containing over 100 nodes and 10TB data.
- Designed an efficient backup scheme for virtualized servers running on Docker.
- Designed and implemented a new storage and display framework using CakePHP including machine-readable outputs to enhance information diffusion.

Publications

- AoXuan Li, Su-Kit Tang, and Gabriele D'Angelo. Implementation and preliminary evaluation of an auditable confidentiality mechanism for defi. In *2023 IEEE 43rd International Conference on Distributed Computing Systems Workshops (ICDCSW)*, pages 49–54. IEEE, 2023
- Kaiyuan Tang, AoXuan Li, and Su-Kit Tang. Fully on-chain cloud storage dapp on the internet computer protocol. In *2023 IEEE 43rd International Conference on Distributed Computing Systems Workshops (ICDCSW)*, pages 43–48. IEEE, 2023
- Aoxuan Li, Gabriele D'Angelo, Su-Kit Tang, Frank Fang, and Baron Gong. An auditable confidentiality protocol for blockchain transactions. *Available at SSRN 4345556*, 2022
- AoXuan Li, Luca Serena, Mirko Zichichi, Su-Kit Tang, Gabriele D'Angelo, and Stefano Ferretti. Modelling of the internet computer protocol architecture: The next generation blockchain. In *International Congress on Blockchain and Applications*, pages 3–12. Springer International Publishing Cham, 2022
- Luca Serena, AoXuan Li, Mirko Zichichi, Gabriele D'Angelo, Stefano Ferretti, and Su-Kit Tang. Simulation of the internet computer protocol: the next generation multi-blockchain architecture. In *2022 IEEE/ACM 26th International Symposium on Distributed Simulation and Real Time Applications (DS-RT)*, pages 119–126. IEEE, 2022
- AoXuan Li, Gabriele D'Angelo, and Su-Kit Tang. The data exchange protocol over multi-chain blockchain using zero-knowledge proof. In *International Conference on Edge Computing and IoT*, pages 18–29. Springer Nature Switzerland Cham, 2022
- Aoxuan Li. On explicit depth robust graphs. Master's thesis, University of California, Los Angeles, 2019
- Rita Tse, AoXuan Li, Zachary Chui, and Marcus Im. Detection and recognition of sign language protocol using motion sensing device. In *Future Technologies Conference (FTC) 2017*, 2017

Languages

- Mandarin Chinese (mother tongue)
- English (fluent in speaking and writing)
- Basic Cantonese

Technology Skills and Competences

Programming Languages: Python, Java, L^AT_EX

Skills: Cryptography, Information security

Scholarships

- Postgraduate scholarship from Macao Polytechnic University

Teaching Activities

- Teaching Assistant of Security and Cryptography at Macao Polytechnic University
- Teaching Assistant of Optimization Methods at Macao Polytechnic University