

# Aoxuan (Douglas) Li

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## Education

### PhD in Computer Science

IMDEA Software Institute, Dec 2024 – 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

### Cryptograph Researcher at Nethermind

Aug 2023 – Nov 2023, Internship

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

### Cryptographer at Mystiko.Network

Aug 2021 – Dec 2024, Freelance

Nov 2020 – Aug 2021

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

### Software Engineer at Stealth Software Technologies, Los Angeles

July 2019 – July 2020

- Developed front-end for cryptographic applications, designed a new Private Set Intersection algorithm, and implemented efficient cryptography software in Java.

## Professional Experiences

### Visiting Researcher at University of Bologna, Bologna

May 2024 – Aug 2024

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

### Researcher at Macao Polytechnic University, Macao

Aug 2021 – Aug 2024

- Focused on research topics related to blockchain, including distributed ledger technologies, smart contracts, and consensus mechanisms.

### Research Assistant at UCLA, Los Angeles

Jan 2018 – June 2019

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

**Research Assistant in Cuneiform Digital Library Initiative at UCLA, Los Angeles**

Jan 2018 – March 2019

- Managed a large-scale CentOS and MySQL server, optimized backup strategies for Docker-based virtualization, and developed a CakePHP-based storage and display framework to improve data accessibility.

**Publications**

- Aoxuan Li, Gabriele D'Angelo, Su-Kit Tang, Frank Fang, and Baron Gong. An auditable confidentiality protocol for blockchain transactions. *Blockchain: Research and Applications*, 2025
- 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
- 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
- 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
- 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. 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,  $\text{\LaTeX}$ **Skills:** Cryptography, Information security

**Teaching Activities**

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

**Academic Services**

- Subreviewer for Eurocrypt 2026, CHES 2026, INFOCOM 2023, Eurocrypt 2019