

PERSONAL INFORMATION

Place of Birth: Singapore

Address: Oxford, United Kingdom

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BIOGRAPHY

I am a D.Phil. student at the University of Oxford, advised by Prof. Kasper Rasmussen and researching privacy-preserving search in distributed systems. Before Oxford, I was an Applied Cryptographer at CrossBar Inc. working on threshold ECDSA for digital wallets and a Research Assistant at the Alan Turing Institute working on trustworthy digital identity. In the latter, I co-authored the Mahi-Mahi asynchronous DAG consensus protocol, a batched vector commitment for MPCitH-type signatures, and secure guidelines for implementing homomorphic encryption schemes.

EXPERIENCES

- 2025 - Applied Cryptographer, CrossBar Inc., United States
Threshold ECDSA and Post-Quantum Transition
- 2023 - 2025 Research Assistant, The Alan Turing Institute, United Kingdom
Asynchronous Consensus, Batched Vector Commitments, Homomorphic Encryption
- 2021 - 2021 Project Management Intern, PayPal, United Kingdom
Brexit Project
- 2019 - 2019 Undergraduate Researcher, Imperial College London, United Kingdom
Model Checking for Multi-Agent Systems
- 2018 - 2018 Project Intern, Boston Consulting Group, Indonesia
Timber and Tissue Paper Manufacturing in Indonesia
- 2017 - 2017 Research Assistant, The Habibie Center, Indonesia
Cybersecurity Policies in Asean

EDUCATION

- 2025 - University of Oxford, Oxford, United Kingdom
D.Phil. in Computer Science
- 2021 -2022 University College London, London, United Kingdom
M.S in Emerging Digital Technologies
- 2017 - 2020 London School of Economics, London, United Kingdom
B.S in Philosophy, Logic, and Scientific Method

PUBLICATIONS, REPORTS, AND AWARDS

My full list of publications, technical reports, and awards is available at <https://brykumara.github.io/>