JOHN FIDEL KAM

Email: john.kam@monash.edu Phone: +61-405-997-608

EDUCATION

THE UNIVERSITY OF MELBOURNE — Parkville, VIC, Australia

Master of Science – Physics — December 2022

H1 (First Class Honours)

Thesis: Large-scale Entanglement on Physical Quantum Devices

Advisors: Lloyd C.L. Hollenberg, Charles Hill, Gary J. Mooney

THE UNIVERSITY OF MELBOURNE — Parkville, VIC, Australia

Bachelor of Science – Physics — December 2020

H2A (Second Class Honours A)

RESEARCH EXPERIENCE

MONASH UNIVERSITY — Clayton, VIC, Australia

Doctoral Researcher, School of Physics and Astronomy — (May 2023 – Current)

Advisors: Kavan Modi, Muhammad Usman

Identified detrimental non-Markovian noise processes for surface code memory [1]

THE UNIVERSITY OF MELBOURNE — Parkville, VIC, Australia

Student Researcher | Assistant Researcher, School of Physics — (February 2021 – May 2023)

Demonstrated and characterized large, entangled states on IBM quantum devices, including a 32-qubit GHZ state and whole-device entanglement on a 414-qubit device [2]

AWARDS AND SCHOLARSHIPS

Future Science Platform Top-up Scholarship, CSIRO, May 2024 – Current

Australian Government Research Training Program Scholarship, 2023 – Current

N. D. Goldsworthy Scholar for Physics, The University of Melbourne, 2021

RESEARCH INTERESTS

Quantum error correction, quantum computation, quantum information, non-Markovian noise

PUBLICATIONS

FIRST AUTHOR

[1] Detrimental non-Markovian errors for surface code memory, arXiv:2410.23779, (2024)

[2] Characterization of entanglement on superconducting quantum computers of up to 414 qubits, Physical Review Research 6 (3), 033155 (2024)

CO-AUTHOR

Entanglement teleportation along a regenerating hamster-wheel graph state, arXiv:2411.13060 (2024)

Teleporting two-qubit entanglement across 19 qubits on a superconducting quantum computer, Accepted for Physical Review Applied

TEACHING EXPERIENCE

THE UNIVERSITY OF MELBOURNE — Parkville, VIC, Australia

Laboratory Demonstrator, School of Physics — (February 2022 – November 2022)

Led first year physics laboratory classes, demonstrating, leading, and marking notebooks for up to 30 students

REFERENCES

Kavan Modi
kavan.modi@monash.edu

Angus J. Southwell
angus.southwell@monash.edu

Lloyd C. L. Hollenberg
lloydch@unimelb.edu.au