

Evan Hockings

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Positions

Member of Technical Staff <i>Iceberg Quantum</i>	July 2025–present
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Education

Doctor of Philosophy (Physics) <i>University of Sydney</i> Thesis: Noise characterisation of fault-tolerant quantum computers Advisors: Andrew Doherty, Robin Harper	2021–2025
Bachelor of Science (Advanced Mathematics) (Honours) in Physics <i>University of Sydney</i> Honours Class I and the University Medal Thesis: Scalable estimation of quantum noise Advisor: Steven Flammia Weighted average mark: 90. Majors: Physics, Mathematics	2017–2020

Research experience

Physics Research Assistant <i>School of Physics, University of Sydney</i> Advisor: Stephen Bartlett	September 2024–July 2025
Chemistry Research Assistant <i>School of Chemistry, University of Sydney</i> Advisor: Girish Lakhwani	February–June 2019
Physics Summer Research Internship <i>Research School of Physics, Australian National University</i> Advisor: Daniel Cocks	November 2018–January 2019
Chemistry Summer Research Internship <i>School of Chemistry, University of Sydney</i> Advisor: Girish Lakhwani	January–March 2018

Awards and honours

Unitary Foundation Microgrant (supporting QuantumACES.jl)	2024
Australian Government Research Training Program Scholarship	2021–2024
University of Sydney Honours Scholarship	2020
Dean's List of Excellence in Academic Performance	2017, 2018, 2019, 2020
Faculty of Science Olympiad Scholarship	2017–2020
Sydney Scholars Award	2017–2019
School of Physics Julius Sumner Miller Scholarships for Academic Excellence No. 3	2019
Walter Burfitt Scholarship No. 2 for Physics	2019
University of Sydney Academic Merit Prize	2017, 2018
Science Foundation for Physics Scholarship No. 2	2018

School of Physics Julius Sumner Miller Scholarships for Academic Excellence No. 1	2017
International Chemistry Olympiad Bronze Medal	2016

Publications

1. R. Harper, C. Lainé, **E. T. Hockings**, C. McLauchlan, G. M. Nixon, B. J. Brown, S. D. Bartlett. Characterising the failure mechanisms of error-corrected quantum logic gates. arXiv preprint, 2025. arXiv:2504.07258.
2. **E. T. Hockings**, A. C. Doherty, R. Harper. Improving error suppression with noise-aware decoding. arXiv preprint, 2025. arXiv:2502.21044.
3. **E. T. Hockings**. QuantumACES.jl: design noise characterisation experiments for quantum computers. Journal of Open Source Software 10, 107, 7707, 2025. doi:10.21105/joss.07707.
4. **E. T. Hockings**, A. C. Doherty, R. Harper. Scalable noise characterisation of syndrome extraction circuits with averaged circuit eigenvalue sampling. PRX Quantum 6, 010334, 2025. doi:10.1103/PRXQuantum.6.010334, arXiv:2404.06545.
5. Y. Li, R. P. Sabatini, S. K. K. Prasad, **E. T. Hockings**, T. W. Schmidt, G. Lakhwani. Improved optical confinement in ambipolar field-effect transistors toward electrical injection organic lasers. Applied Physics Letters 119, 163303, 2021. doi:10.1063/5.0063336.

Software

QuantumACES.jl 2023–present
 Open-source Julia package for designing, simulating, and implementing noise characterisation experiments for quantum computers.
 Journal of Open Source Software 10, 107, 7707, 2025.

Talks

Improving error suppression with noise-aware decoding 26 March 2025
Invited talk at Sydney Quantum Theory Group

Scalable noise characterisation of syndrome extraction circuits with averaged circuit eigenvalue sampling 12 December 2024
Invited talk at EQUUS Annual Workshop 2024

Scalable noise characterisation of syndrome extraction circuits with averaged circuit eigenvalue sampling 17 October 2024
Invited talk at IBM Research, Yorktown Heights

Scalable noise characterisation of syndrome extraction circuits with averaged circuit eigenvalue sampling 7 October 2024
Contributed talk at Assessing Performance of Quantum Computers (APQC) 2024

Scalable noise characterisation of syndrome extraction circuits with averaged circuit eigenvalue sampling 1 August 2024
Invited online talk at Thomas Monz's group, University of Innsbruck

Scalable noise characterisation of syndrome extraction circuits with averaged circuit eigenvalue sampling 4 April 2024
Invited talk at Coogee'24 Sydney Quantum Information Theory Workshop

Scalable noise characterisation of syndrome extraction circuits with averaged circuit eigenvalue sampling 10 November 2023
Contributed talk at School of Physics HDR Symposium (3rd place), University of Sydney