

# Kieran Egan

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[kieranegan.com](http://kieranegan.com) • [Google Scholar](https://scholar.google.com/citations?user=Kieran-Egan) • [github.com/Kieran-Egan](https://github.com/Kieran-Egan)

## EDUCATION

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**University of Wisconsin–Madison** Expected Dec 2027  
M.S. in Quantum Computing (Physics)

**University of Kansas** May 2026  
B.S. in Computer Engineering — GPA 3.49/4.0 Cumulative, 3.64/4.0 Major

## INDUSTRY EXPERIENCE

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**Garmin International — Software Engineering Intern** Summer 2025 & 2026

- Established a Jenkins-based automated testing process that integrates comprehensive unit tests, triggered automatically through Garmin's version control system.
- Collaborated with the low-level camera team to develop embedded software for dash and backup cameras, including pairing drivers for the [Garmin dēzl DualView](#).

## RESEARCH EXPERIENCE

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**KU Advanced, Reconfigurable, and Quantum Computing (KUARQ)** Aug 2024 – May 2026

- Co-developed a genetic-algorithm-based quantum circuit compiler (NSGA-II with fuzzy-logic runtime adaptation) that synthesizes hardware-compatible circuits while minimizing approximation error, circuit depth, and CNOT count; achieved compilation quality competitive with industry-standard compilers (Qiskit, BQSket) on 2-qubit unitaries.
- Analyzed FPGA-accelerated quantum simulation workflows and benchmarked performance against classical simulators.

## SELECTED PUBLICATIONS

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Islam, I., Jha, V., Thomas, S., **Egan, K.**, et al. (2025). Quantum Circuit Synthesis Using Fuzzy-Logic-Assisted Genetic Algorithms. *Algorithms 2025, Special Issue on Algorithms for Quantum Computing and Quantum-Centric High-Performance Computing*, 18(4), 178, March 2025. doi: <https://doi.org/10.3390/a18040178>.

Chaudhary, M., El-Araby, K., Nobel, A., Jha, V., Kneidel, D., Islam, I., Singh, M., Ogundele, S., Phillips, B., **Egan, K.**, et al. (2025). Solving Multidimensional Partial Differential Equations Using Efficient Quantum Circuits. *Algorithms 2025*, 18(3), 176, March 2025. doi: <https://doi.org/10.3390/a18030176>. ([full list on Google Scholar](#))

## FELLOWSHIPS & AWARDS

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**Outstanding Senior Award Nomination** 2026  
**Undergraduate Research Fellowship (UGRF)** 2025–2026  
**SELF Engineering Leadership Fellowship** 2021–2025  
**KU Excellence Scholarship** 2021–2025

## TECHNICAL SKILLS

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### Software & Programming:

*Python, C++, C, MATLAB, Qiskit, BQSket, Git, Gerrit, Docker, LaTeX, Jenkins, UNIX Systems*

### Hardware & Instrumentation:

*FPGA (Xilinx), Kria KV260, SoC, embedded systems, I2C, UART, PCB design (KiCad), multimeters, oscilloscopes, power supplies*