Alan Bailey

(281) 865 - 9781 | Alan.Bailey@rice.edu | linkedin.com/in/alanbaileyy

EDUCATION

Rice University — Houston, TX
B.S. in Electrical and Computer Engineering — *August 2025 – Present*
- **GPA:** 4.0/4.0

Westlake Boys High School — Auckland, New Zealand
Class rank 1 for final 3 years — *February 2020 – December 2024*

RELEVANT COURSEWORK

Calculus I, Calculus II, Multivariable Calculus, Differential Equations, Honors Mechanics, Honors Electromagnetism, Computer Engineering, Computational Thinking

EXPERIENCE

Translational Bioelectronics Lab (Seymour Lab) — January 2026 – May 2026
Undergraduate Researcher — *Houston, TX*
- Engineered an automated wafer-imaging pipeline that scans 4-inch bioelectronic substrates at 100x magnification in 90 minutes, mapping precise coordinates to eliminate manual inspection.
- Deployed a YOLO object-detection model to identify 5-micrometer electrode defects and leverage spatial metadata to predict overall device yield and channel functionality.
- Designed a scalable system architecture featuring an intuitive defect-visualization interface for technicians and an adaptable pipeline for training future machine learning models.

Rice EXP LAB — January 2026 – May 2026
Undergraduate Research Engineer — *Houston, TX*
- Design and testing a high-fidelity wind system.
- Prototyping an array of 3D-printed servo-actuated wind ducts.
- Creating a system to translate 3D engine data into physical airflow through microcontroller-controlled PWM fans.

Rice Eclipse — August 2025 – Present
Avionics Flight Engineer — *Houston, TX*
- Select and design the control electronics and sensors for an Active Flight Stabilisation system for rockets to increase altitude.
- Designed and launched a Level 1 certification rocket which reached 3700ft. Modeled and 3D printed a nosecone which housed an altimeter.

Rice Wind Energy — August 2025 – Present
Blades Sub Team Engineer — *Houston, TX*
- Research airfoils and simulate various blade configurations using Qblades to maximise turbine power production.
- Evaluate the strength of different composites and manufacturing methods to optimise the turbine blade's structure, while balancing material sustainability.

ADDITIONAL COURSES

IBM Qiskit Global Summer School | Qiskit IBM — July 2025
- Developed and simulated quantum circuits using Qiskit, completing all 4 labs
- Explored quantum error mitigation and correction techniques, circuit optimization, and algorithm implementation.

CS50 Introduction to Artificial Intelligence with Python | HarvardX (edX) — February 2025 – March 2025
- Completed 12 Python projects applying AI concepts such as search algorithms, reinforcement learning, and neural networks.

TECHNICAL SKILLS

Languages: Python
3D design: Fusion360, Bambu Studio
Libraries: pandas, NumPy, Matplotlib, Qiskit