

## PERSONAL STATEMENT

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Motivated and detail-oriented Physics and Computer Science student with a 9.0 GPA and strong interest in puzzles. Knowledge in development using React, TypeScript, and JavaScript. Experienced in tutoring and knowledge in imbedded systems, signal processing, and machine learning. Committed to using technical skills for impactful, interdisciplinary projects.

## EDUCATION

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### BSc in Physics and Computer Science

Expected Graduation End of 2025

*University of Auckland, New Zealand*

- **GPA 9.0/9.0**
- Certificate of Distinction: *Physics 121, Maths 130*
- Certificate of Outstanding Achievement: *Compsci 110, 120, 130*
- Department of Physics **Scholarship**
- Outstanding Award in NZ **Scholarship**

## EXPERIENCE

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### Marker & Teaching Assistant at UoA

Feb 2025 - Present

- Mark assignments and exams for undergraduate Physics & Computer Science Stage 1 and 2 courses.
- Provide feedback that helps students improve their understanding.

### Independent Tutor

Feb 2023 - Present

- Tutored **20+** high school students (Years 9–13) in Math, Physics, and Chemistry.
- Helped students reach High Merit and Excellence in NCEA and Scholarship exams.
- Prepared resources including practice papers and strategies.

### Volunteer - Room to Read Campaign

Jan 2022 – Dec 2022

- Cooperation with Room to Read, an **international literacy & education organization**.
- Co-leader of non-profit project with a team of 6 members.
- Delivered and promoted free English audiobooks for children.
- Encouraged and ensured all team members to participate and meet deadlines.

## PAST TECHNICAL PROJECTS

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### Machine Learning Visualizer Web App (*React, TypeScript*)

- Developed an interactive web application to intuitively explain machine learning concepts.
- <https://whoisbamboo.github.io/ml-visualizer/>

### Personal Portfolio Website (*VanillaJS, HTML, CSS, Matter.js*)

- Designed and developed a portfolio site showcasing projects.
- <https://liam-nguyen.com/>

### Thesis Topic Classifier using Naïve Bayes Machine Learning

- Created a supervised **machine learning model** from scratch to classify thesis titles into academic categories.

- Applied text preprocessing, tokenization, and probabilistic modeling from scratch in Python.
- <https://colab.research.google.com/drive/17EPTu4ecMjkBCp3FBI107LIUGDMWd5xm?usp=sharing>

### **Image Deconvolution & Enhancement (FFT)**

- Used **Fourier filtering techniques** to restore low-resolution or blurred grayscale images.
- Applied denoising and contrast correction using **Python and OpenCV**.
- [https://colab.research.google.com/drive/1aK7-Pk5lw\\_h7gk6SRq-LjPwtR3Yd7asA?usp=sharing](https://colab.research.google.com/drive/1aK7-Pk5lw_h7gk6SRq-LjPwtR3Yd7asA?usp=sharing)

### **Heart Rate Monitor & Chua Oscillator PCB Design**

- Designed and assembled analog heart rate monitor PCB circuit using filters, comparators, and amplifiers.
- Built and tested a Chua chaotic oscillator PCB; analyzed signal in time and frequency domains.

## **SKILLS**

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**Programming:** Python, TypeScript, JavaScript, HTML, CSS, LaTeX, Java, C

**Libraries/Tools:** React, NumPy, OpenCV, Matplotlib, Scikit-learn, AutoCAD, Matter.js, LTSpice

**Hardware:** Oscilloscopes, PCB design, NI ELVIS

**Soft Skills:** Solving puzzles, teamwork, time management

#### **Additional:**

- Microsoft Office Specialist – Excel (2019)
- Production ML (Machine Learning) Systems (2022)
- End-to-End ML with TensorFlow on Google Cloud (2022)
- Scholarship Elaine P. Snowden Astronomy School at the University of Canterbury (2023)

**Extracurricular activities:** Playing the piano, baking, cooking, and bouldering.

I am a dependable and proactive individual who brings a can-do attitude to every task. Whether collaborating on technical projects or mentoring others, I apply creative problem-solving and clear communication to turn complex challenges into practical, impactful outcomes. Puzzles are fun!