

James Bao

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Career Objective

I am **chasing opportunities** to grow my love for **analogue electronics** and **embedded systems**.
I love active problem-solving and **tinkering** until something is exactly right.
I want to **improve human lives**—whether through software, hardware, or a **beautiful combination of both**.
I am always looking to **learn** new things and **grow** as a person—and I apply this mindset to everything I do.

Skills Summary

Problem Solving

- I **apply** my strong **logical thinking** to challenging situations, and leave things **better than I found them**.

Communication Skills

- I am an effective communicator with an aptitude for **breaking down challenging concepts**.

Leadership

- I am passionate about intent-based leadership and **understanding** each member's **strengths and weaknesses**.

Teamwork

- I strive to **be an asset** to any team. I am known for my reliability—I **do not make promises I cannot keep**.

Education

Bachelor of Engineering (Honours)

The University of Auckland

2021 – 2024

- Specialising in **Computer Systems** Engineering
- Cumulative GPA of 8.2/9.0 (A)

Experience

Course Cadet Staff

New Zealand Cadet Forces

Jul 2021
Auckland, NZ

- Selected to staff the Northern Area Junior Non-Commissioned Officer's Course 04/21
- A mentor and **role model** to the course of 50+ students
- Aided Directing Staff in **training delivery**, student assessment, and welfare management
- Maintained **morale** and esprit de corps
- Applied my instructional technique and leadership skills to deliver a 'very efficient Final Parade'

Freelance Software Developer

2020 – 2021

- Back-end development with JavaScript, **Node.js**, and **MongoDB**
- Built a custom Discord bot tailored to streamline **digital order management** and processing

Technical Skills

C/C++

- Familiarity with **Arduino**-flavoured C++ and standard C
- Learnt through **projects** in high school and University Engineering courses
- Currently using C to develop **firmware drivers** for an **ATmega328PB**
- Used Arduino C++ for simple sensor reading and **peripheral control** functionality

Git/GitHub

- Git version/source control and GitHub project management
- Usage of **feature branches**, pull requests, issues, and GitHub Actions
- **3000+** **contributions** accrued over the past **4 years**

Other Languages I am also highly proficient in **TypeScript/JavaScript**, and have limited experience in **Python, Java**, and **MATLAB**.

Project Experience

Smart Energy Monitor

uoa-ece209.github.io

2022

The University of Auckland

- **Smart energy monitor** I am currently designing in a **group of four**
- Involves analogue **circuit & PCB** design, signal conditioning, using an **ATmega328PB**, writing **firmware** drivers, serial communication, and Bluetooth communication
- Git and GitHub
- LTspice
- Microchip Studio
- Proteus VSM
- Altium Designer

Automatic Peg Cleaner

jamesnzl.xyz/13cte

2020

Westlake Boys' High School

- **Self-directed** Year 13 Control Technology project
- Learnt about **embedded systems**, MOSFETs, capacitors, diodes, **circuit and PCB design**, 3D modelling, 3D printing, and **firmware development** through **practical application**
- Arduino
- AutoCAD
- EasyEDA

Other Projects More projects can be found on my [GitHub profile](#).

Achievements

2021

- **First in Course Award** for ENGGEN 131: Introduction to Engineering Computation and **Software Development**

Pre-2021

- Bayonet of Honour
- Cadet Warrant Officer Class Two
- Top of Course Award
NZCF Senior Non-Commissioned Officer's Course
- School Prefect and Deputy House Captain
- First in Level 3 Calculus
- First in Level 2 Physics
- First in Level 2 Programming

Interests

Outdoors I have a deep love for the outdoors, and find it an amazing outlet to recharge my batteries.

Teaching I love crafting intuitive explanations for difficult, technical concepts—and seeing the lightbulb moment.

Te Ao Māori I care deeply about engaging with the indigenous culture & language of Aotearoa New Zealand.

Youth Development I am an Officer Cadet in the New Zealand Cadet Forces. I was previously a cadet for five years, including 17 months as a Cadet Warrant Officer Class Two.

References

Captain James Green, NZCF

james.green@cadetforces.org.nz or +64 21 101 8020

Cadet Unit Commander
City of Auckland Cadet Unit

James has been a **significant mentor**, and has heavily **guided** my growth as a person.

Rebecca O'Gram

rog@westlake.school.nz

Associate Principal
Westlake Boys' High School

Rebecca was my Year 13 Calculus **teacher**, and is one of the **most influential** teachers I have ever had.

Matua Johnny Waititi

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Te Kaihautū o Te Puna
Westlake Boys' High School

Matua Johnny was my Te Reo Māori **kaiako** and **form teacher**, and has also played a **pivotal** role in my life.