

# James Bao

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## Career Objective

I am **chasing an internship** to grow my love for everything from **analogue electronics** to **full-stack web development**. I love active problem-solving, and **tinkering** around with an ever-evolving project until it is exactly right. I enjoy learning & seeing how technology can be applied to **improve human lives**—whether through software, hardware, or a **beautiful combination of both**.

I am a driven, reliable team player with proven leadership skills and a knack for effective communication. 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 am a natural problem solver, and **apply** my strong **logical thinking** to challenging situations. I leave things **better than I found them**, working methodically to arrive at an optimal solution.
- I have created a personnel development framework, and implemented a digital workspace to consolidate data, administration, and procedures into a single source of truth.

### Communication Skills

- I am an effective communicator with an aptitude for **breaking down challenging concepts**.
- I help appreciative first-years with **intuitive explanations** for difficult, technical concepts. I also tutored English, Maths, and Science at high school.
- I have acquired experience in presentation skills, public speaking, and self-confidence through my New Zealand Cadet Forces development courses.

### Leadership

- I am passionate about intent-based leadership and **understanding** each member's **strengths and weaknesses**—I strongly believe the whole is greater than the sum of its parts.
- I was a Prefect and Deputy House Captain at high school, a Cadet Warrant Officer Class Two in the NZCF, and led the House Haka in Years 11–13.
- I was appointed to be the Regimental Sergeant Major for a highly successful Recruit Training Course with units from across the Upper North Island.

### Teamwork

- I strive to **be an asset** to any team, and try to morph into whatever role is in demand. I am often counted on for my punctuality and reliability—I **do not make promises I cannot keep**.
- I was a member of my high school's Premier Lacrosse and Premier Target Shooting teams, and know the importance of teamwork and collective buy-in.

## Experience Summary

### Course Cadet Staff

New Zealand Cadet Forces

Jul 2021

Auckland, NZ

### Freelance Software Developer

2020 – 2021

## Education

### Bachelor of Engineering (Honours)

The University of Auckland

2021 – 2024

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

## Detailed 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

#### TypeScript/JavaScript

- › Front-end **browser** and back-end **Node.js** applications
- › Object-oriented and functional patterns
- › **async/await**, Promises, and callbacks
- › **Serverless functions** with Next.js and Cloudflare Workers

#### Electronics and Embedded Systems

- › Analogue **circuit & PCB design** learnt through practical application
- › Extensive **hands-on** experience with **soldering** and using **multimeters** & **oscilloscopes**
- › Familiarity with **LTspice**, Microchip Studio, Proteus VSM, and EasyEDA
- › Experience writing **firmware** for **Arduino** and ATmega328PB **Xplained Mini**

#### Git/GitHub

- › Usage of **feature branches**, pull requests, issues, and GitHub Actions
- › **3000+ contributions** accrued over the past **4 years**

**Other Languages** I am also familiar with **C/C++**, and have limited experience in **Python**, **Java**, and **MATLAB**.

### Project Experience

#### notion-assignment-import

2022

[jamesnzl.xyz/notion-assignment-import](https://jamesnzl.xyz/notion-assignment-import)

- › **Cross-browser** extension that loads Canvas assignments into a Notion database
- › **60+ users** in under **two months**
- › Variety of tools including **Gulp**, Browserify & ESBuild, **Sass**, and PostCSS
- › Learnt more about **APIs**, HTTP and HTTP clients, and **OAuth2**
- › Git and GitHub
- › Sass and PostCSS
- › Insomnia
- › TypeScript, HTML
- › Gulp, Browserify, and ESBuild

#### Smart Energy Monitor

2022

[uoa-ece209.github.io](https://uoa-ece209.github.io)

*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
- › Microchip Studio
- › Altium Designer
- › LTspice
- › Proteus VSM

#### Automatic Peg Cleaner

2020

[jamesnzl.xyz/13cte](https://jamesnzl.xyz/13cte)

*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

## Pronto

2020 – 2021

[aucklandarmycadets.github.io/Pronto](https://aucklandarmycadets.github.io/Pronto)

City of Auckland Cadet Unit

- › Full-featured Discord bot to **streamline** Unit **procedures**
- › Comprehensive **codebase documentation** with **JSDoc**
- › Experimenting with **Cloud Computing** services including DigitalOcean, Linode, Vultr, and currently **Oracle Cloud**
- › JavaScript, Node.js
- › MongoDB
- › JSDoc
- › Virtual Private Servers
- › SSH, Bash, Unix CLI

## Unit Website

2022

[github.com/aucklandarmycadets/aucklandarmycadets](https://github.com/aucklandarmycadets/aucklandarmycadets)

City of Auckland Cadet Unit

- › A **modern, performant website** to overhaul my Cadet Unit's online presence
- › Serverless functions with both **Next.js** and **Cloudflare Workers**
- › Created my **own CDN** to cache Notion's ephemeral images and **optimise performance**
- › Experience in managing **DNS records**, administering Google Search Console, and enhancing **SEO**
- › Next.js (and React) with Vercel
- › Serverless functions
- › DNS Records, SEO

**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 find immense satisfaction in teaching and mentoring other people—crafting coherent, intuitive explanations for difficult and technical concepts and seeing the all-rewarding lightbulb moment.

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

**Youth Development** I am passionate about youth development, and I am currently an Officer Cadet in the New Zealand Cadet Forces. I was previously a cadet for 5 years, including 17 months as a Cadet Warrant Officer Class Two.

## References

### Captain James Green, NZCF

[james.green@cadetforces.org.nz](mailto:james.green@cadetforces.org.nz) or +64 21 101 8020

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

Cadet Unit Commander  
City of Auckland Cadet Unit

### Rebecca O'Gram

[rog@westlake.school.nz](mailto:rog@westlake.school.nz)

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

Associate Principal  
Westlake Boys' High School

### Matua Johnny Waititi

[jwa@westlake.school.nz](mailto:jwa@westlake.school.nz) or +64 20 410 53400

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

Te Kaihautū o Te Puna  
Westlake Boys' High School