

# 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 want to **improve human lives**—whether through hardware, software, 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)

2021 – 2024

The University of Auckland

- › **Computer Systems** Engineering
- › Cumulative GPA of 8.3/9.0 (**A-A+**)
- › Dean's Honours List

## Experience

### Embedded Software Engineer Intern

Nov 2022 – Mar 2023

Windcave Ltd

Auckland, NZ

- › Writing **C/C++ firmware** on a new STM32U585 **ARM** development board
- › **Rapid prototyping** of external **QSPI and OSPI** flash memories
- › **Creating** a simple **Point of Sale system** on CHU200TP payment terminal

### 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

### 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 **Altium Designer**
- › Experience writing **firmware** for **Atmel megaAVR** and **ARM Cortex-M33**

### 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

### Git/GitHub

- › Fluency with **feature branches**, pull requests, issues, and GitHub Actions
- › **5300+ contributions** accrued over the past **5 years**

**Other Languages** I am also experienced with **C/C++**, and have familiarity with **VHDL**, **C#**, **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
- › **5200+ unique users** in **eighteen months**
- › Learnt more about **REST APIs**, HTTP and HTTP clients, and **OAuth2**
- › Git and GitHub
- › Sass and PostCSS
- › Insomnia
- › TypeScript, HTML
- › Gulp, Browserify, and ESBuild

### Smart Energy Monitor

2022

[cs209.jamesnzl.xyz](https://cs209.jamesnzl.xyz)

The University of Auckland

- › **Smart energy monitor** I designed in a **group of four**
- › Analogue **circuit & PCB** design, signal conditioning, using an **ATmega328PB**, writing **firmware** drivers, and UART & **Bluetooth** communication
- › Lecturer's Choice for **Top Team**
- › LTspice
- › Proteus VSM
- › Git and GitHub
- › Microchip Studio
- › Altium Designer

### 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
- › JSDoc
- › SSH, Bash, Unix CLI
- › MongoDB
- › Virtual Private Servers

### 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
- › Created my **own CDN** to cache Notion's ephemeral images and **optimise performance**
- › Next.js (and React) with Vercel
- › Serverless functions
- › DNS Records, SEO

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

## Achievements

- › **First in Course Award** for ELECTENG/COMPSYS 209: **Analogue and Embedded Firmware Design**
- › **First in Course Award** for ENGEN 131: Introduction to Engineering Computation and **Software Development**
- › **Dean's Honours List 2022**
  - › School Prefect and Deputy House Captain
- › Bayonet of Honour
  - › First in Level 3 Calculus
- › Top of Course Award
  - › First in Level 2 Physics
- › NZCF Senior Non-Commissioned Officer's Course
  - › First in Level 2 Programming

## References

### Weili Liu

Embedded Development Manager

[weili.liu@windcave.com](mailto:weili.liu@windcave.com)

Windcave Ltd

Weili has been a **significant mentor** and **guided** me closely during my internship.

### Duleepa J Thrimawithana

Senior Lecturer

[d.thrimawithana@auckland.ac.nz](mailto:d.thrimawithana@auckland.ac.nz)

The University of Auckland

Duleepa invited me to be a COMPSYS 209 **Teaching Assistant** and to assist with his **Smart Car workshop** at Mānawa Mai **Open Day**, based on my **technical proficiency** and **communication skills**.

### Matua Johnny Waititi

Te Kaihautū o Te Puna

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

Westlake Boys' High School

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