James Bao

@ james@jamesnzl.xyz   /JamesNZL
+64 22 410 1580   /JamesNZL
Auckland, New Zealand   jamesnzl.xyz

⊕ Career Objective

*I am **chasing an internship** to grow my love for **analogue electronics** and **embedded systems**.*

*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

> Specialising in **Computer Systems** Engineering   > Cumulative GPA of 8.25/9.0 (A)

💼 Experience

Embedded Software Engineer Intern   Nov 2022 – Present
Windcave Ltd   *Auckland, NZ*

> Writing **C/C++ code** on a new **STM32U585** 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 EasyEDA
> Experience writing **firmware** for **Arduino** and ATmega328PB **Xplained Mini**

C/C++

> Familiarity with **Arduino**-flavoured C++ and standard C
> Learnt through **projects**, University Engineering courses, and **industry**
> Used C to develop **firmware drivers** for an **ATmega328PB**
> Used Arduino C++ for simple sensor reading and **actuator control** functionality

Git/GitHub

> Usage of **feature branches**, pull requests, issues, and GitHub Actions
> **4000+ contributions** accrued over the past **4 years**

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

⚗ Project Experience

Smart Energy Monitor
cs209.jamesnzl.xyz

2022
The University of Auckland

- **Smart energy monitor** I designed in a **group of four**
- **Lecturer's Choice** for **top team** out of all 40 teams
- Analogue **circuit & PCB** design, signal conditioning, using an **ATmega328PB**, writing **firmware** drivers, and UART & **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

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

- 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 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

Weili Liu
weili.liu@windcave.com

Embedded Development Manager
Windcave Ltd

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

Duleepa J Thrimawithana
d.thrimawithana@auckland.ac.nz or +64 21 065 2880

Senior Lecturer
The University of Auckland

Duleepa invited me to assist with his **ECSE Smart Car workshop** at Mānawa Mai **Open Day** after recognising my **technical proficiency** and **communication skills** in COMPSYS 209: Analogue and Embedded Software Design.

Matua Johnny Waititi
jwa@westlake.school.nz or +64 20 410 53400

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.