**Ivan Fateev**

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**SUMMARY**

I’m a Computer Systems Engineering student at the University of Auckland, focused on building practical hardware and software solutions. I enjoy tackling challenges involving microcontrollers, low-level programming in C++ and Python. I’m comfortable stepping into unfamiliar areas and pick up new concepts quickly through hands-on learning. Whether it’s working with embedded systems or developing custom hardware, I’m eager to apply and grow my skills through real-world projects.

**EDUCATION**

**UNIVERSITY OF AUCKLAND**

Bachelor of Computer Systems Engineering (Honours) *Expected Nov 2027*

Cumulative GPA: 8.33/9; **2024 Dean's Honours List** (students with top 5% performance or 8.25+ GPA)

Relevant Coursework: Fundamentals of Computer Eng, Object-Oriented Programming, Intro to Eng Computation and Software Development, Fundamentals of Electrical Eng, Electrical and Digital Systems

**PROJECTS**

**1ST PLACE GOVERNANCE CHALLENGE - WEB3 HACKATHON** Solidity, *Chai, Git, Web3*

* Won **1st place** in the Governance Challenge at NZ’s first Web3 Hackathon earning $4000 NZD competing against 40% industry professionals by building the backend for our decentralised voting system within 36 hours
* Wrote 8 unit tests to ensure functionality and reliability across code changes and deployments

**3D SPATIAL MAPPING SYSTEM** *C++, Arduino, Python*

* Engineered a high-speed 3D spatial mapping system on Arduino UNO, capturing approximately 100,000 points per scan at 250Hz using LiDAR and stepper motors
* Programmed low-level C++ code to control stepper motors via I2C, synchronise LiDAR sampling with motor movement, and implement calibration routines to handle drift and minimise stepper motor errors
* Collected LiDAR data and controlled stepper motor timing using C++ on Arduino, with Python scripts used for point cloud processing, data cleaning, and conversion to .xyz format

**PERSONAL PORTFOLIO WEBSITE –** [**https://ivanf.nz**](https://ivanf.nz)*React, Typescript, Tailwind, Git*

* Built and deployed a custom terminal-style website using Vercel, Next.js, and TypeScript enabling real-time command processing and dynamic rendering of README.md files from GitHub API hosted on a personalised domain
* Ensured responsive design for mobile and desktop with terminal-like interface and managed codebase using Git and GitHub with 50+ commits showing continuous improvements and smooth functionality

**3D TO ASCII RENDERER** *Python, Git*

* Built a Python tool to render .obj 3D models as ASCII in the terminal with custom projection, shading, face-sorting, and consistent rotation speed independent of FPS using argument parsing and OOP structure
* Leveraged NumPy for fast transformations and projection, with efficient data storage and robust error handling to support large .obj files

**WORK EXPERIENCE**

**CHILLED/FROZEN ASSISTANT** *Auckland*

New World NZ *Oct 2022 – Feb 2024*

* Successfully trained 3 new team members on procedures and workflow, ensuring smooth operations and effective collaboration across shifts
* Built solid communication and problem-solving skills dealing with 50+ customers a day, handling questions and resolving issues on the spot

**CORE SKILLS & COMPETENCIES**

**TECHNICAL EXPERTISE:** Python, C++, Java, JavaScript, TypeScript, Git, Arduino, ESP32, Fusion 360

**PRACTICAL INTERESTS:** Underwater Hockey, Water Polo, Adaptability, Prototyping, PCB design, 3D Modelling