

# Ivan Fateev

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## SUMMARY

I'm a Computer Systems Engineering student at the University of Auckland, passionate about building innovative hardware and software solutions. I enjoy solving complex challenges, learning new concepts, and collaborating with others to create impactful solutions. With a strong problem-solving mindset and a hands-on approach, I'm eager to apply my skills in real-world projects that drive meaningful results.

## EDUCATION

### Bachelor of Computer Systems Engineering (Honours)

University of Auckland • Auckland • 2024 - 2027 • GPA - 8.4

• 2024 Dean's Honours List recognises students with top 5% performance or a minimum of an 8.25 GPA.

## PROJECT

### Blockchain Voting System (Governance Challenge Winner, Web3 Hackathon)

[github.com/se-camus/2025-web3-hackathon](https://github.com/se-camus/2025-web3-hackathon) • March 2025

- Developed the backend of the winning project, securing 1st place in the Governance Challenge at New Zealand's FIRST Web3 Hackathon, earning \$4,000 NZD while competing against 40% industry professionals.
- Engineered a decentralised voting system using MetaMask wallets in 36 hours, enabling secure, transparent, and verifiable on-chain governance.
- Implemented 8 unit tests to ensure smart contracts functioned as expected across code changes and deployments.

### 3D Spatial Mapping System

[github.com/ivanf-nz/realtime-mesh-renderer](https://github.com/ivanf-nz/realtime-mesh-renderer) • November 2024 - January 2025

- Engineered a 3D spatial mapping system using LiDAR sensors and stepper motors, capturing ~100,000 data points per scan at 250Hz. This system enabled real-time visualisation of indoor environments, providing precise mapping for detailed analysis.
- Designed and 3D printed custom mechanical components, including a base, spur gear system, and 2-axis gimbal using Autodesk Inventor. Engineered these components to optimise sensor alignment and enable smooth, accurate movement for precise spatial data capture across multiple axes.
- Programmed the hardware integration using Arduino UNO and C++ algorithms to control the stepper motors' rotation and process the raw LiDAR data. The system converted this data into clean, usable formats suitable for 3D mesh processing, producing CAD-ready models for spatial visualisations.

### Personal Portfolio Website

[ivanf.nz](https://ivanf.nz) • April 2025 - Present

- Built and deployed a custom terminal-style website using Vercel, Next.js, and TypeScript. Enabled real-time command processing and dynamic rendering of README.md files directly from GitHub's API, all hosted on a personalised domain.
- Ensured responsive design to provide an optimal user experience across mobile and desktop devices while maintaining a terminal-like interface for interacting with the site.
- Managed the codebase with Git and GitHub, tracking over 50 commits across development cycles to maintain version history and implement continuous improvements, ensuring smooth functionality of command processing.

### 3D to ASCII Renderer

[github.com/ivanf-nz/x2ascii](https://github.com/ivanf-nz/x2ascii) • December 2024 - April 2025

- Built a Python tool to render .obj 3D models as ASCII in the terminal, using custom 3D projection, shading, and face-sorting logic with real-time rotation at ~60 FPS.
- Leveraged NumPy for efficient storage and manipulation of parsed vertex data, enabling fast transformation and projection during rendering.
- Implemented robust error handling and data validation, ensuring reliable parsing of large .obj files.

## EXPERIENCE

### Chilled/Frozen Assistant

New World NZ

October 2022 - February 2024, Auckland

- Helped streamline day-to-day operations by working across multiple departments, figuring out faster ways to restock and stay in sync with the team.
- 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 fixing issues on the spot.

## SKILLS

- *Languages & Tools:* Python, C++, Git, Arduino and ESP32 Microcontrollers, Fusion 360
- *Core Skills:* Rapid Prototyping, Problem Solving, Teamwork, Effective communication, Adaptability