

Brian Nguyen

UNSW Engineering (Honours) Robotics & Mechatronics / Computer Science
Graduating 2027

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Robotics and Computer Science student at UNSW with a strong foundation in control systems, state estimation, and distributed software systems. Experienced in deploying cloud-based applications and integrating real-time systems, with hands-on fabrication and hardware prototyping capability. Interested in robotics, autonomy, and systems-level engineering roles.

Education

University of New South Wales (UNSW)

2023 – 2027

Bachelor of Engineering (Honours) Robotics & Mechatronics (MTRNAH)

Bachelor of Computer Science

Relevant Coursework

Control Systems, State Estimation (Kalman/EKF), Model Predictive Control, Sensor Fusion, Data Structures & Algorithms, Object-Oriented Design, Software Engineering, Algorithm Design & Complexity

Technical Projects

Cloud-Deployed Discord AI Assistant

Sep 2025 – Present

- Built and deployed a production-ready Discord bot integrating an OpenAI-compatible LLM API for conversational assistance and reactive chat features
- Implemented per-user conversation memory summarisation, structured tool routing, dynamic web-search fallback, and cached variation generation for slang-based reactions
- Developed rolling in-memory server style modelling to support probabilistic contextual interjections, message-style adaptation, and recent GIF reuse from live server activity
- Deployed across cloud environments, evolving from Google Cloud Compute Engine with PM2 to Railway-based hosting, with rate limiting, cooldown logic, chunked responses, and resilient error handling

Commander Chaos Draft – Persistent Async Web App

April 2026 – May 2026

- Developed an asynchronous web drafting app with persistent room codes, reloadable state, and 30-day room expiry
- Implemented REST API endpoints using Cloudflare Pages Functions and Cloudflare D1 for room state, player actions, draft picks, and deck export

X-O RNG – Multiplayer WebSocket Game

January 2026 – February 2026

- Developed a real-time multiplayer game using WebSockets with room-based server architecture
- Implemented server-side state management, player identity tracking, and scoreboard persistence
- Designed modular ES6 frontend with animated UI and strict game-state validation
- Deployed frontend via Cloudflare Pages and backend on Render

Technical Skills

Programming: C/C++, JavaScript (Node.js), MATLAB

Systems & Deployment: WebSockets, REST APIs, Cloudflare, PM2, Google Cloud Compute Engine, Render

AI & Application Logic: LLM API integration, prompt engineering, session memory, contextual reply generation

Robotics & Control: Feedback control, state estimation (Kalman/EKF), MPC concepts, sensor fusion

CAD & Fabrication: SolidWorks, CAD modelling, fabrication & prototyping

Workshop & Prototyping: Machining fundamentals, soldering, mechanical workshop tools

Tools: Git/GitHub, VS Code, Unity (basic), Blender (basic)

Professional Skills: Technical communication, teamwork, stakeholder-focused design, documentation

Experience

Deverall Park Tennis Courts – Manager

Dec 2022 – Feb 2023

- Managed bookings, financial reconciliation, and operational reporting to Canterbury Bankstown Tennis Association
- Coordinated daily operations and supervised scheduling

AIE Work Experience – Unity/Blender

2020

- Developed 3D models in Blender and implemented gameplay systems in Unity
- Gained experience in interactive system design and software-driven simulation environments