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

LLM-Integrated Discord Assistant (Cloud-Deployed)

- Built and deployed a production-ready Discord bot integrating an OpenAI-compatible LLM API
- Implemented modular prompt tooling, per-user conversation memory summarisation, and structured tool routing
- Integrated dynamic web search fallback using SerpAPI with retrieval-based logic
- Deployed on Google Cloud Compute Engine with PM2; implemented rate limiting, chunked responses, and robust error handling

X-O RNG – Multiplayer WebSocket Game

- 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, Docker, PM2, CI/CD, Cloud Deployment (GCP, Render)
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