Dan Huy NGUYEN

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EDUCATION

University of New South Wales   **Feb 2018 − April 2024**

Bachelor of Engineering (Hons) (Mechatronics) / Bachelor of Science (Computer Science)

- Graduated 1st class.
- Total weighted average mark of 82.622.

WORK EXPERIENCE

Accenture

Application Development Analyst   **May 2024 − Current**

- Configuring and testing CRM in the public sector with Salesforce and Azure DevOps.

UNSW

Casual Academic   **Sep 2021 − Current**

- Involved in planning course curriculum and content from assessments to lectures for C++ and robotics courses across all year levels.
- Taught and mentored classes, ran help sessions, and marking for engineering design, robotics, and C++ courses.
- Lead migration for delivery of course content using GitHub Classrooms.
- Optimise processes using scripting, build tools, CI/CD tools.
- List of courses taught for: DESN1000, DESN2000, MTRN2500, MTRN3100, MTRN4110, COMP9024.
- List of courses administrated for: MTRN2500, MTRN3100, MTRN4231.

PROJECT EXPERIENCE

TV Mate   **May 2024 − June 2024**

Application Developer

- Designed and implemented a Flutter app with mDNS-enabled IR-firing IoT devices (ESP8266) for remote control of multiple TVs via websockets over LAN.

Split Payment App   **Sep 2023 − Current**

Application Developer

- Solely prototyping multiplayer split-payment app with fractional splitting enabled by multi-range sliders and OCR for receipt-digitisation.
- Built with Firebase, Firestore, React, Mantine UI, Tabler, immer, react-slider, tesseract.js, wouter, zustand, Vite, Vitest.

Offworld Robotics

Project Manager   **Dec 2020 − June 2022**

- Supervised leadership team to conduct operations with respect to project management plan and systems engineering management plan.
- Centralisation and refinement of processes, structures, documentation, and workflows onto GitLab to improve organisational efficiency and standardise quality.
- Developed learning curriculum covering design and implementation of robotic systems for upskilling of Offworld Robotics students.

COMPETITION EXPERIENCE

Accenture Technology Bootcamp   **Feb 2022**

- Developed proof-of-concept "GitLab Team Management" application in Django/Python connecting to GitLab API to enhance people management capabilities.

WIESoc x IBM Hackathon   **Oct 2020**

- Developed prize-winning "COVID Safe Link" website in Flask/Python connecting to Google Maps API and NSW Open Data Platforms to plan safe travel through populated areas and public transport.

ACADEMIC PROJECTS

COMP6080 – Web Front-End Programming   **May 2023 – Dec 2023**

- Built frontend Airbnb clone (using React, Mantine, SWR, Axios, Wouter, Zustand) given a backend API to achieve course mark of 90.
- Built frontend web messaing platform (in pure vanilla JS, HTML, and CSS) given a backend API and using Web APIs like HTML DOM, Intersection Observer, and Navigation.

COMP3900 – Computer Science Project   **Feb 2022 – May 2022**

- Revamped "GitLab Team Management" Django project with full-stack boilerplate and upskilled team on Django framework.
- Implemented SSO with GitLab web service using django-oidc, GitLab API calls on top of requests library, text search with django-haystack, and object-level permissions with django-rules.

MTRN4110 – Robot Design   **May 2021 – Sep 2021**

- Architected the robot software for a maze-solving robot with autonomous navigation using world imaging data processed with OpenCV.
- Hacked Webots build platform to simultaenously execute C++ and Python programs with Cython interface.

MTRN3500 – Computing Applications in Mechatronics Systems   **May 2020 – Sep 2020**

- Developed multi-process application for LiDAR and GNSS processing, and teleoperation of a robot using shared memory IPC.
- Built TCP/IP client with WinSock2 to connect to robot over WiFi.
- Implemented GUI to visualise robot data processing and motion using OpenGL.

ACHIEVEMENTS

- UNSW Dean's Honours List.   **2021**
- UNSW Dean's Honours List.   **2020**
- UNSW Dean's Honours List.   **2019**
- New Colombo Plan Scholarship Recipient.   **2018**

TECHNICAL SKILLS

Robotics development

- ROS1/2, RViz, Gazebo.
- Webots.
- URDF, SDF.
- Low-level C/C++14.
- C++20 (Catch2, GoogleTest, doctest, GoogleBenchmark, CxxTest).
- Assembly (MIPS).
- MATLAB (Simulink).

Full Stack App Development

- HTML, CSS, JS, TS.
- React (Mantine UI, Chakra UI, React Hook Form, React Query, SWR, Wouter, Zustand).
- PostgreSQL, PL/pgSQL.

- Firebase (Hosting, Firestore).
- Flutter (Provider, Bonsoir).
- AWS (Amplify, EC2, S3).
- Nginx.

Machine Learning

- Google ML Kit.
- TensorFlow (Lite).

Other Programming Languages

- Python <=3.9 (Jupyter, OpenCV).
- Java 17 (OOP, design patterns).

Software Tools

- git.
- GitHub (Actions, Classroom).
- GitLab.
- VSCode, Visual Studio.
- WSL, Ubuntu, Debian, Windows 10, Mac.
- Docker.

Engineering Skills

- Design thinking.
- Concept generation & evaluation.
- Prototyping.
- Project planning & management.