

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)

- Cumulative WAM of 82.622.
- Notable courses: DESN2000(99), ENGG3600 (94), MATH2019 (93).

WORK EXPERIENCE

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 Flutter app and mDNS-enabled IR-firing IoT devices for remote control of multiple TVs via websockets on LAN.

Split Payment App

Sep 2023 – Current

Application Developer

- Solely prototyping multiplayer split-payment app (Vite and React) with fractional splitting enabled by multi-range slider, receipt-digitisation enabled by OCR, and deployed with Firebase.
- Iterated multiple times to fine-tune UI/UX.

Offworld Robotics

Project Manager

Dec 2020 – June 2022

- Supervision of a 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.
- Development of a 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.

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 simultaneously 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

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| • 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).

- Firebase (Hosting, Firestore).
- Flutter (Provider, Bonsoir).

Python

- Python <=3.9.
- Jupyter Notebook.
- OpenCV.

Software Tools

Full Stack App Development

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| <ul style="list-style-type: none">• HTML, CSS, JS, TS.• React (Mantine UI, Chakra UI, React Hook Form, React Query, SWR, Wouter, Zustand).• PostgreSQL, PL/pgSQL. | <ul style="list-style-type: none">• git.• GitHub (Actions, Classroom).• GitLab.• VSCode, Visual Studio.• WSL, Ubuntu, Debian, Windows 10, Mac. |
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