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 with total weighted average mark of 82.622.

WORK EXPERIENCE

Accenture

Application Development Analyst **May 2024 – Current**

- Configuring and testing CRM in 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

Social Media App **August 2024 – Current**

Fullstack Developer

- Designed social media mobile app that is cross between popular Dress To Impress Roblox game and BeReal.
- Implemented with Flutter + Firebase (Functions, Firestore, Storage, Authentication, AppCheck), Google & Apple social authentication, and custom camera and gallery picker.

TV Mate **May 2024 – June 2024**

Application Developer

- Designed and implemented Flutter MacOS and iOS 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.

COMPETITION EXPERIENCE

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

MMAN4010/4020 – Thesis A/B **May 2023 – Dec 2023**

- Lead team of students to build proof-of-concept website for real client to achieve course marks of 95 and 89.
- Architected system which was website integrated with mechatronic system to automate control of multiple TVs using websockets over WiFi.

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

- Built frontend Airbnb clone (using React, Mantine, SWR, Axios, Wouter, Zustand) given backend API to achieve course mark of 90.
- Built frontend web messaging platform (in pure vanilla JS, HTML, CSS, and Bootstrap) given 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 robot software for 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 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.

COMP1531 – Software Engineering Fundamentals **Feb 2020 – May 2020**

- Developed back-end and API in Flask/Python for Slack-like application achieving project mark of 97.

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.
- PostgreSQL, PL/pgSQL.
- Firebase (Authentication, Functions, Hosting, Firestore, Storage).
- Flutter.
- AWS (Amplify, EC2, S3).
- Nginx.

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.