DANNY **NGUYEN**

Mechatronics Student

Linkedin Profile Github Profile Personal Website

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ABOUT

I am in the ultimate year of Master of Engineering, at the University of Melbourne. I have more than 1-year of experience in mechanical design as well as software development obtained from getting involved in different projects related to robotics and autonomous systems over my course and internship experience. I consider myself as a 'forever student', eager to both build on my academic foundation in Mechatronics and upskill myself in Computer Science with online courses. I am currently working on my capstone project while also self-learning web development part-time. I am seeking opportunities to kickstart my career path in Robotics and Software Development after graduate.

KEY PROJECTS

2019 - 2021, MELBOURNE UNIVERSITY RACING MOTORSPORTS **– THE AUTONOMOUS STEERING SYSTEM – CAPSTONE PROJECT**

- The motor-driven steering system for the Driverless Electric Car.

2021, UNIVERSITY PROJECT **– AUTONOMOUS WAREHOUSE ROBOT**

- Team lead of a group of 3, worked on designing and developing software pipeline for the 3-wheel robot to perform pick-and-drop cycle task autonomously in a warehouse, using **ROS** library with **C++** and **Python** programming language.
- Developed motion planning and trajectory tracking control of the robot.

2021, PERSONAL PROJECT **– PERSONAL WEBSITE**

- Used HTML, CSS and Javascript to create and implement UI/UX for the personal website.
- Developed basics knowledge in Front-End Web Development

2021, UNIVERSITY PROJECT **– THE CHESS BOT – 4-DOFs ROBOT ARM**

- Team lead of a group of 3, provided guidance and support other team members with their tasks.
- **Designed**, **fabricated** and **tested** the chess bot from scratch.
- Got familiar with **PLA 3D printing** and **tool handling**.
- **Designed** and **simulated task space controller** for the robot arm.
- Created **git workflow** and **developed/maintained source code** for the robot to perform the task using **MATLAB** and **Arduino**.
- Conducted documentation and video presentation for the project.

2018, UNIVERSITY PROJECT **– THE PROSTHETIC ARM PROTOTYPE**

- This project is for **Colombian charity e – NABLE**, during which I managed to process **EMG sensor** signals with programmed **Arduino** to control the DC servo motors, responsible for performing various gestures, resulted in an affordable lightweight prosthetic arm prototype.

EDUCATION

6/2019 – 11/2021, Master of Engineering, Mechatronics – THE UNIVERSITY OF MELBOURNE

- WAM – 78.25 (Distinction).

EXPERIENCE

12/2020 – 3/2021, INTERNET OF THINGS (IoT) PRODUCT DEVELOPEMT OFFICER – INTERN, AQUATERRA

- Quickly learned new skills and applied them to daily tasks, improving efficiency and productivity.
- Monitored all company inventory to ensure stock levels and databases were updated.
- Responsible for **embedded software programming** in **C++** and testing end-to-end IoT sensor prototypes for field deployment.
- Successfully built, troubleshot and add new features for the prototype. Produced engineering assembly documents of the prototypes and managed the Bill of Materials (BOM).

1/2021 – 12/2021, AUTONOMOUS STEERING SYSTEM ENGINEER, MELBOURNE UNIVERSITY RACING MOTORSPORTS

- Designed, manufactured and maintained the mechanical and autonomous steering system of the 2021 Electric car competing in the FSAE-A competition.
- Designed and simulated the motor controller in **MATLAB Simulink**.
- Programmed and tuned motor controller in **MoTeC M150 ECU**.
- Carried out data analysis for steering system in **MoTeC i2 Pro**.
- Gained experience in **CAN communication, ANSYS FEA** software package.
- Worked closely and collaboratively with other sub-teams to achieve the project success and ensure the design complies with standards and requirements for the Formula Student competition.

ACTIVITIES

2018, PRESIDENT, INTERNATIONAL VIETNAMESE STUDENTS AT THE UNIVERSITY OF MELBOURNE (IVSUM)

- Support other Vietnamese freshmen of the University of Melbourne, successfully recruited 90 new members during O-weeks in 2018.
- Organized a networking event, Career Talk 2018, for members to gain career insights and to connect with IVSUM alumnus.
- Strategized on event planning and maintaining Vietnamese culture, raised a considerable amount of profit from selling traditional Vietnamese food in Festival of Nations 2018.
- Analysed data and gave strategic direction on event advertising, monitored and organized the 3-day/2-night Winter Camp 2018 for 94 members.

SKILLS & EXPERTISE

PROFESSIONAL SKILLS

- Problem-solving
- Communication
- Interpersonal
- Leadership

DOCUMENTATION

- LaTeX
- Microsoft office: Word, Excel

TECHNICAL SKILLS

- Computer Aid Design: Fusion 360, ANSYS
- Soldering
- Git
- OOP
- C/C++, Python, Java, MATLAB, HTML, CSS, Javascript, JQuery