Owen Li Dong Lin

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Personal Website with Portfolio: codingowen.github.io/OwensWebsite/

EDUCATION

National University of Singapore (NUS) *Aug 2021 – May 2024 (Expected)*

- Bachelor of Mechanical Engineering (Hons.) and 2nd Major in Innovation & Design Programme
- Cumulative Average Point (CAP): 4.61 / 5.00 (Highest Distinction)
- Pursuing Robotics Specialization under Mechanical Engineering Major

Stanford University Apr 2023 – June 2023

- Participated in MS&E 178 & MS&E 472 under the NUS Overseas Colleges programme
- Pursued entrepreneurial concepts and seminar-style discussions with many guest speakers

WORK EXPERIENCE

Product Design Engineer Intern, Mill Industries Inc. *Jan 2023 – Dec 2023 (San Francisco)*

- Led the design and testing process for the core grinding and drying function of our next generation product offering
- Achieved significantly lower manufacturing and assembly costs of using DFA & DFM methods
- Innovated low-cost test fixtures using pneumatic actuation methods for reliable quality control in production factory

UAV Mechanical Engineering Intern, Performance Rotors *May 2022 – Aug 2022 (Singapore)*

- Independent Product lead and design of powder payload release and mounting mechanism on a custom commissioned drone
- Innovation and development of 3D Printed ultrasonic generator housing and ultrasonic testing probe spring suspension system for Non-Destructive Testing (NDT) Operations
- Minimized manufacturing and assembly times of core products by redesigning mechanical mounts using DFM principles

Platoon Sergeant, Naval Diving Unit, Republic of Singapore Navy *Feb 2019 – Dec 2020*

- Presented the Best National Serviceman (Full-Time) Award for my tenure in the unit
- Led and oversaw combat diving operations for 50+ Divers as the Platoon Sergeant of the 51st Batch of Combat Divers under the Underwater Demolitions Group

COMPETITIONS

UC Berkeley AI Hackathon *June 2023*

- Innovated and designed a Smart Glasses concept that served as an IOT-enabled travel companion & guide for the visually impaired, which utilized GPT-4 for human – computer interface
- Led team through customer empathy, product design, systems integration and software development, which entailed CAD design, 3D Printing, sensor integration onto a RPi 4 and developing a path finding algorithm for our monocular camera
- The project can be viewed here: https://devpost.com/software/vidi

Stanford Wildfire Hackathon *May 2023*

- Innovated and prototyped a mobile phone application that helped firefighters accurately locate early wildfires by enabling users to upload photos of nearby wildfires with phone GPS and magnetometer data
- Designed a triangulation and clustering algorithm to accurately pinpoint the wildfire location from phone data
- Led team of three software engineers for software implementation and prototyping

James Dyson Award 2022 *July 2022*

- Innovated and designed a folding lunchbox concept for reducing plastic waste from takeout
- Led team of 5 engineers for full design and prototyping process, including CAD design, 3D Printing, mechanical fastening and assembly
- Directed market research on existing products and user needs to identify & improve business viability
- The project can be viewed here: https://www.jamesdysonaward.org/en-SE/2022/project/tapow-box/

NUS Circular Economy N-novate Entrepreneurship Challenge *Mar 2022*

- Team clinched 1st place out of all competing teams - our team innovated a method of using reusable face masks to function as vacuum filters, making use of the primary function of facemasks to reduce waste in a circular economy
- Planned out revenue model, business partnerships and social media campaign for our business case as the business development lead
- Successfully pitched our business case to a panel of industry experts, competition judges and a live audience

International Space Challenge 2022 – Satellite Design Project *Dec 2021*

- Team clinched Finalist (2nd position) out of 540+ participants worldwide
- Designed an experimental payload, a High-Voltage Energy Harnesser for the satellite passing through Van Allen's Belt
- Used Fusion360 to design satellite structure and Systems Tool Kit (STK) Program to model satellite's elliptical orbit within Van Allen's Belt region

PROJECTS

VR-Based Foreign Language Learning Application with ML

- Developing a Virtual Reality application employing Natural Language Processing (NLP) to help users learn foreign languages more effectively, for my year-long Innovation & Design Major (iDP) Project
- Conducted extensive market research and interviews with foreign language professors
- Application utilizes Microsoft Azure for NLP, Unity for VR Environment and Oculus Rift for VR Headset

3D-Printed Hand Gesture Tracking Robot Hand

- Designed and improved CAD files of an open-source Robot Hand to resolve inherent fitting issues and strengthened joints
- 3D-Printed all parts, including TPU Joints and PLA Shells for the Hand and programmed an Arduino Microcontroller to control individual fingers
- Implemented OpenCV & CVZone packages for robot hand to detect and mimic hand gestures from a webcam

Obstacle Course Maneuvering & Automated Catapult Firing Robot Car

- Designed and assembled a Robot-Car capable of traversing an obstacle course and delivering a payload past a wall
- Innovated and designed a self-locking mechanism to secure catapult onto Robot Car body using Fusion360
- Programmed Arduino Uno Microcontroller to control individual wheels with servo motors and fire catapult automatically upon arrival at critical distance from obstacle wall, with feedback from ultrasonic distance sensor

AWARDS AND ACCOLADES

Engineering Scholars Programme

- Awarded flagship NUS Engineering Scholarship given to top 1% of freshmen, which includes a full scholarship of an accelerated 3-year Bachelor's of Engineering & 1-year Master's Programme

Harvard Prize Book (Singapore) 2020/2021

- Certificate of Recognition for altruism and outstanding behavior, based on commendation by school to Harvard University Alumni Association of Singapore

SKILLS

Software

- Languages and Competencies: Python, C++, C#, Matlab, VBA. HTML, CSS
- Python Libraries: Numpy, MatplotLib, cv2, CVZone, MediaPipe, NLTK, Scikit-Learn, Flask
- General: Git, Linux, Powershell, PuTTY
- Robotics: Arduino, Raspberry Pi, ROS, Drone Flight Controller Pixhawk

Hardware

- Computer Aided Design: Siemens NX, Solidworks, AutoCAD Fusion360
- 3D Printing: Prusa Slicer, Markforged Eiger
- General: Soldering, Wood Working, Vacuum Forming, Workshop Power Tools (Hand Drill, Dremel), Bill of Materials

Miscellaneous

- Microsoft Office: Excel, Word, PowerPoint
- Foreign Languages: Korean, Mandarin Chinese