KER CHIN TIAN

FINAL YEAR COMPUTER ENGINEERING UNDERGRADUATE

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EDUCATION

Computer Engineering (BEng with Honours), Robotics Specialisation 2019 - Present
National University of Singapore (NUS)
GPA: 4.8 / 5 (Dean's List, First Class Honours) | Expected to graduate in May 2023
Recipient of the NUS Merit Scholarship, a bond-free scholarship to pursue a full-time course in NUS

Exchange - Computer Engineering 2022
University of Toronto (UofT)
NASA Exchange Scholarship

NUS High School Diploma (High Distinction) 2013 - 2018
NUS High School of Mathematics & Science
GPA: 4.8 / 5 | Outstanding Student Award - Achievement, Leadership, Service

WORK EXPERIENCE

Embedded Engineering Intern June 2021 - Nov 2021
Zimplistic Pte Ltd (Rotimatic)

- Single-handedly developed an integrated IoT test system using PyQt and Firebase on a Raspberry Pi interfaced with a router, printer, scanner, camera, and a physical switch, which was deployed at 4 manufacturing sites and at Rotimatic's in-house test department
- Gathered requirements, designed and implemented test scripts for Rotimatic's subassemblies and full assembly using Python's unit test framework, increasing automated manufacturing test coverage by around 90%
- Built a Modbus test tool utilized by 4-5 Rotimatic engineers for easier debugging and testing
- Took initiative to debug and fix the machines used by other teams, allowing them to carry on with their work smoothly

Intern Mar 2019 - May 2019
Ministry of Home Affairs Singapore (MHA), Sense-making & Surveillance

- Created 3 real-time face recognition Android apps using different Machine Learning (ML) models from Firebase ML Kit or OpenCV, and evaluated their performance to determine their suitability in Body-Worn Cameras for uniformed officers
- Reviewed video analytics platforms and surveillance systems around the world and presented my findings to a team of 8 members to better understand industry standards
- Analysed the accuracy of Singapore's surveillance platform in detecting 30-40 attributes, such as gender and colour, to highlight the strengths and weaknesses of the system

Software Engineering Intern Jan 2019 - Feb 2019
Open Government Products, GovTech Singapore

- Collaborated with engineers, designers, and managers to develop a webpage and a mobile app to digitalise identity cards in Singapore, which was later integrated with Singpass, serving more than 3.5 million Singapore residents today
- Programmed a webpage to inform donors of the food levels in food banks and a Telegram bot to match drivers to food delivery requests, to help with the food insecurity problem in Singapore

Research Intern (Part-Time) Feb 2017 - Dec 2017

DSO National Laboratories

- Designed a faceted reflectarray antenna to bridge the gap in existing literature, achieving 83% higher gain-bandwidth as compared to similarly sized flat reflectarray antennas
- Awarded Bronze at the Singapore Science and Engineering Fair, and presented on stage to an audience of 70-200 at the CST ASEAN User Conference and at the NUS High Research Congress

Intern (Part-Time) Sept 2016 - Dec 2016

Defence Science and Technology Agency (DSTA)

- Developed a Virtual Reality (VR) simulation of a fire evacuation drill onboard a commercial vessel with HTC Vive using Unity3D to educate and train the public on the emergency procedures, which was released and presented at the Young Defence Scientists Programme (YDSP) Congress, attended by over 500

TOOLS, TECHNOLOGIES & SKILLS

- **Languages**: Python, C++, Java, MATLAB, C, ARM Cortex-M, Verilog
- **Relevant courses**: Autonomous Robot Systems, Fuzzy/ Neural Systems for Intelligent Robotics, Real-Time Operating Systems (RTOS), Computer Architecture, Computer Networks
- **Systems and software**: Robot Operating System (ROS), Object-Oriented Programming (OOP), Linux, Raspberry Pi, Arduino, Firebase, PostgreSQL, basic Wireshark, basic KiCAD, Git
- **Sensors**: inertial measurement units (IMUs), ultrasonic sensors, infrared sensors, basic LIDARs
- **Skills**: collaboration, adaptability, problem-solving

EXTRACURRICULAR ACTIVITIES

Undergraduate Teaching Assistant, NUS Aug 2020 - Apr 2021, Jan 2023 - Present

- Tutored a class of 10-20 undergraduates and guided them in engineering labs and projects
- Evaluated students' weekly assignments and lab reports, and provided regular feedback on each of their performance to ensure that students are on track

Netball Varsity Team Player, NUS Aug 2019 - Present

- Active member who represented NUS in the Singapore University Games (SUniG) as well as the Institute Varsity Polytechnic (IVP) Games to win 3rd and 1st place respectively in 2022 and 2023

Human Powered Vehicles Design Team Member, UofT Jan 2022 - May 2022

- Developed an end-to-end system, from schematics to a graphical user interface, to read data from 6 load cells simultaneously, enabling other team members to measure drag and lift forces on different wing designs easily
- Represented UofT in the 37th annual Michigan Human Powered Vehicle Rally and won the 200ft female sprint

Event Organiser, NUS Nov 2020 - Feb 2021

- Initiated a campaign to increase appreciation for bus drivers in NUS after learning about their work situation by designing posters and infographics, and sharing them online and physically
- Collected messages from the NUS community, handwrote cards for 20-30 bus drivers and distributed them together with goodies to thank the bus drivers for their hard work

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ADDITIONAL INFORMATION

- Fluent in English and Chinese (both spoken and written)
- Enjoys nature, sports and travelling