David Htet

Mechatronics/DevOps Engineer

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Work Experience

Agerris – Agriculture Robotics System (Mar 2019 – Present)
Mechatronics/DevOps Engineer

- Used ROS and C++ to develop a 2D mapping algorithm from a stereo camera's point cloud data for the robot's navigation system
- Designed a computer vision-based obstacle maneuvering system for the autonomous tractor
- Used Linux bash and Python for processing and analyzing GPS and sensor data
- Collaborated with clients to understand user requirements for feature development planning

Monash University (Nov 2019 – Mar 2020)
Summer Research Engineer – Data Collection and Analytics

- Performed movement data collection on AFL athletes using wearable sensor nodes (IMUs)
- Processed joint angles of athletes' lower bodies from the raw data collected using MATLAB
- Generated questionnaires to assess elite athletes' states of mind and level of perception

Monash Nova Rover (Sep 2019 – Nov 2020)
Software/Robotics Engineer

- Propelled the team to 9th place in 2019 from 14th place in 2018, out of 35 competing teams
- Used C++ and ROS to create a path planner and controller for the autonomous navigation system
- Created a Gazebo simulation environment to improve safety for testing purposes
- Assisted in sensor selection and performance analysis to meet budget plans

Education

Monash University, Clayton (Jul 2016 – Nov 2020)

- First Class Honors Bachelor of Electrical and Computer Systems Engineering
- Awarded Dean's Honors List for Academic Excellence; GPA - 3.66

Projects

Socially Conformant Robot Navigation (Jun 2020 - Nov 2020)

- Integrated Reinforcement Learning algorithms to impose social norms in robot while maneuvering in public areas.
- Initial training was carried out in a Python simulation, and transferred learning was performed on an agent in a Gazebo environment to accelerate training time

PenguiPi Robot (Jun 2020 - Nov 2020)

- Used Python to achieve EKF sensor fusion, mapping, and localization of the robot in simulation
- Deployed YoloV5, an AI object recognition system, to navigate through obstacles

Anti-Sleep System (Mar 2019)

- Used a Raspberry-PI and an Arduino to engineer a system to alert drowsy drivers
- Deployed a machine learning model to track the frequency of eye blinks and yawns, a haptic sensor to detect the gripping force, and a heart rate sensor to track heart beats

Skills

Programming	C/C++, Python, MATLAB, Linux bash, ReactJS
Software	ROS, SolidWorks, Git, Jira, TeamCity, KiCad
Embedded System	Nvidia Jetson, Cypress Psoc, Raspberry Pi