ROWAN RAMAMURTHY

rowrama99@gmail.com
+1 847 702 8123

EDUCATION

M.S. Robotics Aug. 2024 - Exp. Aug.2026
Georgia Institute of Technology *Atlanta, USA*

B. Engineering (Mechatronics) (Honors I) Jan. 2017 - Dec. 2021
University of New South Wales (UNSW) *Sydney, Australia*

- First Class Honors
- **Thesis**: A Real-Time 3D Feature-Based Exploration Framework for Industrial Environments
- **Supervisor**: Dr. Mark Whitty

B. Science (Computer Science) Jan. 2017 - Dec. 2021
University of New South Wales (UNSW) *Sydney, Australia*

- **Capstone**: Dynamic Chat-bot API Framework for assistance with PC part selection

WORK EXPERIENCE

Software Engineer Feb 2022 - Jul. 2024
Cirrus Realtime Processing Systems *www.cirrusrtps.com.au*

- Participated in client meetings to discuss requirements and accuracy of solutions that have been developed for various simulations.
- Worked in a software development team completing upgrades, patches, and troubleshooting issues for clients.
- Developed and implemented upgrades for a Generic Ship ComCen simulator and a Tactical Electronic Warfare simulator, and assisted in deploying the system at various Navy training facilities throughout Australia.
- Developed and implemented upgrades for an Air Combat Officer Training simulator and assisted in deploying the system on planes and at Air force training facilities across Australia.
- Improved TCP Communication standards used internally on Cirrus simulations for greater efficiency and reliability in C++ and C# coding.

Private Tutor May 2020 - Feb. 2022
Platute *www.platute.com*

- Tutored 50 students for over 300 hours from undergraduate to masters level in computer science and mechatronics at universities around Australia.
- Assisted students with subjects ranging from introductory programming to networking, parallel processing and environmental exploration.
- Guided development of solutions for problems in Python, C++, C and Java coding.

Course Demonstrator Feb. 2019 - Dec. 2021
UNSW *www.unsw.edu.au*

- Instructed courses including Microprocessors and Interfacing (COMP2121), Robotics (MTRN4230), Robot Design (MTRN4110), and Computer Applications of Mechatronic Systems (MTRN3500).
- Developed course content for weekly labs and assessment tasks for application and training of industrial robots.
- Mentored teams in development of industrial robotic arm solutions and acted in a supervisor capacity for managing the progression of each team
- Evaluated student understanding related to robotic navigation, control, programming efficiency and ability to integrate different systems into a complete solution.

Mechatronic Engineering Intern (Autonomy Team) Dec. 2020 - Feb. 2021
Emesent *www.emesent.com.au*

- Improved the Autonomy team's current simulation environment by finding issues related to mismatched slam maps from using non-standardized timing formats amongst different ROS Nodes.
- Developed a simulated model of a 3-DOF gimbal camera and light system working with the ROS and Gazebo 9 for replicating the standard perception operation.
- Debugged issues related to the current autonomous perception solution being used for the DARPA Subterranean Challenge and implemented suggested improvements.
- Created Emesents submission for the DARPA Subt Simulated challenge which involved redesigning the entire system for integration with the OSRF simulation using ignition Gazebo Dome and ignition transport instead of ROS.

Mechatronic Engineering Intern (Perception and Autonomy Team) Dec. 2019 - Feb. 2020
Emesent *www.emesent.com.au*

- Developed the Perception team's hardware and software solution for independent scanning of the surrounding environment using a custom gimbal and payload to be compatible with the DJI top mounting bracket.
- Successfully developed a system which performed object detection of features and environment scanning in low light and high light environments during the DARPA Subterranean Challenge
- Developed a series of software APIs for custom control of the gimbal system through ROS and for custom configuration of the FLIR Blackfly S camera.

Autonomous Software Developer Mar. 2019 - Nov. 2019
UNSW BLUESAT *bluesat.unsw.edu.au*

- Aided software development for an autonomous model Mars-Rover to complete various tasks for the Off World Robotics Competition.
- Integrated a SLAM solution for mapping using an integrated LiDar sensor on the vehicle.
- Developed a deep understanding of ROS and how all systems integrate when working in separated teams.

PROJECTS

On-Demand Prediction of Signal Coverage using Electromagnetic Propagation 2023
Cirrus RTPS

- Develop, implement, test and verify a C++ API for predicting an electromagnetic signal's propagation from one location to another taking into account the effects of atmospheric ducting and terrain reflection.

3D Visual Simulation of Navy Tactical Warfare Scenarios 2022
Cirrus RTPS

- Develop a 3D visualisation of a Navy warfare Scenario which can run at real-time alongside a legacy simulation system. 3D visualisation was developed using OpenGL and a C#/C++ back-end controller interface.

A Real-Time 3D Feature-Based Exploration Framework for Industrial Environments 2021
UNSW (Mechatronic Engineering Honours Thesis)

- This project sought to identify an efficient, effective, approach for robotic agents to autonomously complete exploration and mapping of a significant feature within an industrial environment.

PC-Building Chatbot 2019
UNSW (Computer Science Capstone Project)

- Develop a dynamic Chat-bot API framework that has integration with the common messenger based systems allowing a user to query a dynamically scraped database of information about computer and component specifications.

SKILLS

- **Technical**: C++, C, C#, Python, Java, ROS, Solidworks, Open3D, Embedded Programming, Linux, AVR Assembly, MIPS Assembly, Networking, Gazebo, GIT, AWS
- **Languages**: English (Fluent), Spanish (Intermediate), Tok Pisin (PNG) (Intermediate)