Allan Binoy Issac

ROBOTICS POSTGRADUATE

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Education

The University of Manchester, MSc Robotics **2025-2026**

- **Key modules:** Computer vision and Cognitive Robotics, Robotic Systems, Robotics Systems Design Project
- Societies and activities: RoboSoc (Robotics Society)

The University of Manchester, MEng Electrical & Electronic Engineering **2021-2025**

- **Key modules:** Mathematics 1E1 & Mathematics 1E2, Mathematics 2E1, C programming, Electromagnetic Fields, Control Systems I, Control Systems II, Digital System Design II, Circuit analysis, Commercial Technology Development, Sensors & Instrumentation
- Societies and activities: Manchester University Data Science Society (Event Executive), CathSoc (Manchester Catholic Society)

Aquinas College, A levels **2018-2020**

- Physics, Mathematics & Further Mathematics (AAA)
- Extended Project Qualification (A)
- Bronze certificate for UKMT Senior Mathematical Challenge (2018 and 2019)
- Society memberships: Music Club, AQ Scholars

Experience

Cummins Inc. | Mechatronics intern **July 2023 – Sep 2023**

- Debugged a dysfunctional Simulink model of an Engine Throttle Valve, configuring the PID controller to produce stable outputs
- Benchmarked an actuator by testing and verifying actuator commands
- Generated technical reports for test results of an electrical prototype motor and for an actuator benchmarking

Projects

- **Robotics Design Project:** Developing a robotic platform based on the Leo Rover to autonomously detect and navigate towards differently coloured objects. Currently working on computer vision system.
- **Fourth-year team project**: Near-field Radar Measurement and Signal Processing System for Biomedical and Soft-tissue Imaging Research. Programmed a frequency synthesiser to generate microwave frequency signals for non-destructive scanning and wrote the driver to control the mechatronic rig
- **Third-year project (71%):** DSP-based musical reverb algorithms using Blackfin devices. Developed a GUI to enable users to input audio files of .WAV format, customise reverberation parameters and output reverberated audio files. Implemented a program with same functionality for real-time processing using ADSP-BF706 evaluation board
- **Embedded Systems Project (78%)**: developed an autonomous line-sensing buggy as a team. Developed PID controller, worked on sensor array PCB design and motor characterisation

Skills & abilities

- Programming languages: C, C++, LaTeX, MATLAB, Python
- Soft skills: Resilience, team-working, writing
- Software packages and frameworks: NumPy, PyTorch, ROS 2, Simulink
- Languages: English, Malayalam
- Other interests: Singing (chorister)

Certifications

- Applied Control Systems 1: autonomous cars: Math + PID + MPC. Available: https://www.udemy.com/certificate/UC-7505a364-2990-4407-b8cb-ce68c905ce79/
- Machine Learning at the Edge: A Practical Introduction from Arm. Available: https://courses.edx.org/certificates/8dec0e3cc7de4a5dbc785909cac00f6a
- MATLAB Onramp (100%). Available: https://matlabacademy.mathworks.com/progress/share/report.html?id=a627a702-402d-402a-89c9-e972c5ff300a
- Programming for Everybody (Getting Started with Python) Available: https://www.futurelearn.com/certificates/pf2sp6t
- Resilience (EtonX)