

ADITHYA VIMUKTHI

Mechatronics Engineer and Master's student in Robotics & Artificial Intelligence at QUT, with expertise in robotics, computer vision, and machine learning. Experienced in developing intelligent automation systems using Python, C++, and embedded platforms, with strong skills in system design, control, and AI-driven solutions.



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WORK EXPERIENCE

Engineering Trainee ,Twinery, Innovation by MAS

Key Responsibilities:

November 2024

- Developed complete automation solutions, including control systems and HMI interfaces for 4-mode overlock machine operation.
- Planned, designed, and tested electronic circuits and mechanical prototypes for automation applications.
- Conducted debugging, system integration, and performance optimization of prototypes.
- Created CAD models and mechanical designs using SolidWorks.
- Operated CNC laser cutting machines and assisted in fabrication and assembly processes.
- Supported IoT-based automation projects for remote monitoring and control.

Key Projects:

March 2024

- Overlock Automation Project: Designed and built a full automation solution with integrated HMI and 4 operational modes, including planning, circuit design, prototyping, testing, and debugging.
- 3D Wire Bending Project: Designed bending mechanisms for bra cup wire shaping; analyzed and mitigated failures due to material constraints.
- Sticker Pasting Project: Assisted in mechanical design, assembly, and alignment of automated sticker-pasting units.

Engineering Trainee, Ansell Lanka (Pvt) Ltd

Responsibilities:

August 2023

- Assisted in the development of machine vision systems for automated product inspection using image processing and machine learning techniques.
- Programmed and integrated PLC-based automation systems for production and material handling applications.
- Received formal training in Lean Process principles, focusing on waste reduction, workflow optimization, and continuous improvement.
- Received CNC operation and engineering service training, focusing on precision manufacturing and maintenance.
- Participated in wastewater treatment and gamma irradiation process familiarization to understand production safety and compliance standards.
- Conducted safety inspections and performance assessments for solar energy installations within the facility.

Key Projects:

February 2023

- AOI for Product Defect Detection: Developed and implemented some algorithms on automated optical inspection (AOI) system to identify surface defects in products using computer vision.
- Irradiator Material Handling Semi-Automation Project (Unloading Site): Supported the design and integration of semi-automated handling equipment for irradiated materials, improving efficiency and operator safety.
- Solar Project Safety Inspections: Performed on-site safety audits and inspection reports for solar panel and electrical systems.

SKILLS PROFILE

Robotics & AI:	Robot kinematics & control (LQR, MPC), motion planning, computer vision, machine learning, visual odometry.
Programming:	Python (OpenCV, NumPy, PyTorch), C++, MATLAB/Simulink, ROS, Git.
Embedded Systems:	Arduino, ESP32, Raspberry Pi, servo control, sensor integration, HMI design , PCB design.
Design & Prototyping:	SOLIDWORKS, CAD modeling, 3D printing, CNC laser cutting, mechanical assembly.
Professional:	Problem-solving, analytical thinking, teamwork, technical documentation, project management.

EDUCATION

Master of Advanced Robotics and Artificial Intelligence Queensland University of Technology (QUT)	Feb 2025 - Present
Bachelor of Science in Mechatronics Engineering Sri Lanka Technological Campus	Sep 2019 - Nov 2023
<ul style="list-style-type: none">• Second Class Upper Division• Research<ul style="list-style-type: none">◦ Developed a real-time upper-body motion tracking system using Python, OpenCV, and MediaPipe to capture and compute human arm joint angles for robotic teleoperation.◦ Designed a robot manipulator control system on Raspberry Pi 4, enabling motors and a gripper to mimic human arm movements with high accuracy.◦ Implemented a two-part teleoperation framework for safe and precise robotic manipulation in environments inaccessible to humans.	

PUBLICATIONS


- N. A. S. N. Nandasena, W. A. A. Vimukthi, H. M. K. K. M. B. Herath, R. Wijesinghe, and S. L. P. Yasakethu, "Real-Time Upper Body Motion Tracking Using Computer Vision for Improved Human-Robot Interaction and Teleoperation," 2023 Moratuwa Engineering Research Conference (MERCon), Moratuwa, Sri Lanka, 2023.
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CERTIFICATES

International English Language Testing System (IELTS) <ul style="list-style-type: none">• overall band - 6.5	July 2024
Modern Robotics, Course 1: Foundations of Robot Motion – Coursera	Mar 2022
Modern Robotics, Course 2: Robot Kinematics- Coursera	Apr 2022
Neural Networks and Deep Learning - Coursera	Oct 2021
Introduction to Hydraulics Course - Nikini Automation	2020

REFEREES

References available upon request.


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W. A. Adithya Vimukthi
March 10, 2026