Mustafa Laxmidhar

mustafalaxmidhar.github.io/Portfolio

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Education

University of Auckland | Honors BE in Mechatronics Engineering | GPA: 7.75 2025

Experience

Product Development Intern, Fisher and Paykel Appliances– Auckland, NZ Nov 2023 – Feb 2024

- Conducted research on product perception, including UX testing and material analysis
- Developed and executed sound testing experiments to analyse acoustic properties of washing machine doors
- Assisted in Failure Mode Analysis for a new washer line, documenting potential issues and solutions
- Participated in field repairs, gaining hands-on experience with product servicing and user interactions
- Collaborated with engineers across multiple teams, presenting findings to senior staff and the Industrial Design team

Picker Packer, Coca-Cola Europacific Partners – Auckland, NZ Nov 2022 – Feb 2023

- Operated and monitored KUKA robotic arms in a high-throughput automated warehouse
- Supported engineers during Cyclone system failure by reorganizing inventory and assisting with recovery
- Used IoT scanners to complete custom orders, gaining experience with warehouse control systems

Projects

Breathsonix – Fisher and Paykel Healthcare [CONFIDENTIAL]

- Developed a machine learning model to analyse respiratory sounds for real-time health predictions
- Utilized Python and various ML libraries to process and interpret sound data
- References: Andrew Hillard & Nima Hosseini

Computer Vision – Weld Gap Detection github.com/MustafaLaxmidhar/Computer-Vision

- Designed a Python-based computer vision system on a Raspberry Pi to detect weld gaps
- Automated the positioning of a welding gun for enhanced accuracy
- Improved manufacturing precision by eliminating manual alignment errors

Fire Fighter github.com/MustafaLaxmidhar/Firefighter

- Built an autonomous robot capable of detecting and extinguishing two candles on a table
- Integrated IR sensors, ultrasonic sensors, and LDRs for obstacle and fire detection
- Programmed in C++ to enable autonomous decision-making and movement

Skills

Programming Languages: C, C++, C#, Python, MATLAB, Simulink, Ladder Logic

Mechanical CAD Software: Fusion 360, Autodesk Inventor, Creo, Onshape

Embedded Systems: Raspberry Pi, Arduino Microcontrollers

Machine Learning & Computer Vision: OpenCV, TensorFlow

Relevant Coursework

Biomechatronic Systems, Industrial Automation, Mechanical Design, Thermofluids, Dynamics, Object Oriented Programming (OOP), Real-Time Software, Control Systems, Signal Processing, Electronics