Muhammad Hazimi Yusri

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Education

University of Southampton
MEng Electrical and Electronics Engineering, First Class Honours *2021–2025*

Technical Skills

AI/ML: Python ML libraries, Computer Vision, Signal Processing, MATLAB, ComfyUI workflows
Robotics: Sensor Integration, IMU Systems, Autonomous Systems, Motion Tracking
Programming: Python, C++, C, MATLAB, Embedded Systems Programming
Development: Docker, DevContainers, VSCode, Claude Code, N8N automation workflows
Hardware: Microcontrollers, Sensors (IMU, GPS), Raspberry Pi, Arduino, ESP32
Cloud/Web: Next.js for AI dashboards, Cloudflare deployment, OAuth integration

AI & Robotics Experience

Team Lead (35% contribution)
PetBot - LLM & Computer Vision Social Robot *Jan 2025*
- Integrated Ollama LLM with real-time conversation capabilities on Raspberry Pi 5
- Developed Flask web server with Socket.IO for real-time human-robot communication
- Created 3D robot chassis design and printing using Onshape CAD
- Programmed servo motor control for expressive movements and emotional responses
- Repository — Demo Video

Technical Lead **University of Southampton**
Group Design Project - VR Scene Reproduction *Oct 2024–Jan 2025*
- Led development of real-time spatial audio VR application using Unity and Steam Audio
- Redesigned ML pipeline GUI using PyQt6 with comprehensive debugging tools
- Implemented computer vision integration for immersive scene reconstruction
- Project Resources — Published App

University of Southampton
Research Assistant - ML for Scene Reconstruction *June–Aug 2024*
- Refined machine learning pipeline for scene reconstruction using EdgeNet360
- Adapted ML models for 360° image processing and depth estimation
- Developed acoustic evaluation algorithms using MATLAB signal processing

Robotics Project
SlimeVR - IMU-based Motion Tracking System *May–Sep 2023*
- Integrated 7 BMI160 IMU sensors for full-body motion tracking
- Implemented sensor fusion algorithms for accurate position estimation
- Applied embedded programming for real-time data processing

ELEC6227 Medical Electronics
EMG-Controlled Robotic Hand System *Nov 2024*
- Developed EMG signal processing pipeline for robotic hand finger control
- Integrated Delsys Trigno sensors with real-time signal acquisition and ML classification
- Created Random Forest classifier achieving 72% accuracy for gesture recognition
- Extended medical device applications with wheelchair integration for assistive robotics

Development Environment & AI Tools

Modern Workflow: VSCode with AI extensions, DevContainers for ML environments
AI-Assisted: Claude Code for rapid prototyping and algorithm optimization

Additional Projects

Stereo Vision: Stereoscopic camera system for 3D perception with video documentation
Smart Home: IoT sensor network with ML-based automated decision-making
Data Processing: ML pipeline for large-scale image processing (20TB dataset)

Additional Information

Work Rights: Full UK work rights (Graduate visa valid until 2027)
Availability: Immediate
Interests: Computer Vision, Sensor Fusion, Autonomous Systems, Human-Robot Interaction