Muhammad Hazimi Yusri

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Education

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

Technical Skills

Medical Devices: Delsys Trigno EMG Sensors, Piezoresistive Accelerometers, Medical Signal Processing
Signal Processing: EMG Analysis, Feature Extraction (RMS, MAV, WL), Filtering, MATLAB
Electronics: Circuit Design, Interface Circuits, Analog Electronics, Instrumentation Amplifiers
Programming: Python, MATLAB, C++, Machine Learning (Random Forest, Classification)
Development: Medical Device Integration, Real-time Processing, GitLab, OAuth API integration
Standards: Medical device safety considerations, Signal integrity, Noise reduction

Medical & Biotech Experience

ELEC6227 Medical Technologies
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
- Created Random Forest classifier achieving 72% accuracy for finger movement identification
- Extended medical device example applications with enhanced functionality
- Repository

ELEC6203 Microsensors
Interface Circuit for Medical Accelerometer *Dec 2024*
- Designed complete interface circuit for MS3028 piezoresistive accelerometer
- Implemented active filtering with cascaded Butterworth filters (20-170 Hz)
- Achieved 100±5 mV/g sensitivity with $> 10M\Omega$ input impedance
- Optimized power consumption by 56.4% through system-wide voltage reduction

University of Southampton
Research Assistant - Biomedical Signal Processing *June–Aug 2024*
- Developed acoustic evaluation methods using MATLAB for medical applications
- Implemented signal processing techniques for room impulse response analysis
- Applied ML techniques for scene reconstruction in medical imaging contexts

Additional Medical-Related Projects

Social Robotics: PetBot healthcare companion robot with LLM integration (Demo Video)
Sensor Integration: Multi-sensor fusion systems for medical monitoring applications
Data Analysis: Large-scale signal processing for 20TB medical imaging datasets

Development Environment

Medical Standards: Understanding of medical device regulations and safety requirements
Modern Tools: GitLab for medical software development, Docker for reproducible environments

Additional Information

Work Rights: Full UK work rights (Graduate visa valid until 2027)
Availability: Immediate
Location: Southampton-based, open to relocation for medical technology roles
Interests: Medical Device Innovation, Assistive Technology, Biomedical Signal Processing