Mann Janodia

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Professional profile

Mechatronics graduate currently completing an MSc in Robotics Engineering at Middlesex University, with a strong foundation in mechanical systems, embedded electronics, and real-world hardware validation. My experience spans RF prototype testing in extreme-temperature environments and hydraulic system calibration for industrial applications, giving me a practical, data-driven approach to engineering design. I am now keen to apply these skills within a building services or MEP engineering environment, where precision systems and sustainable design directly shape the built environment.

Education and qualifications

MSc Robotics Engineering | Middlesex University **(2025 - 2026)**

BEng Mechatronics Engineering (Minor Degree in AI and ML) | GCET **(2021 – 2025)**
Minor Modules (AI/ML): Artificial Intelligence, Machine Learning Fundamentals, Deep Learning, Algorithm Design.

Skills

Testing & Characterisation: Oscilloscopes, spectrum analysers, multimeters, hardware debugging, fault-finding, environmental validation (±85°C).

Engineering Systems: System testing, hardware validation, signal analysis, PID control, sensor integration, actuator control.

Embedded Platforms: Arduino, ESP32, Raspberry Pi - IMU, ultrasonic and infrared sensor integration, real-time data acquisition.

Design & Simulation: SolidWorks, AutoCAD, MATLAB, Python (Scikit-learn), ABB RobotStudio.

Design & Tools: SolidWorks, AutoCAD, ABB RobotStudio, Git/GitHub, Linux (Ubuntu).

Soft Skills: Technical communication, collaborative engineering work, structured problem solving.

Experience

Radio Frequency Engineer Intern | Optimized Solutions Limited **(*January 2025 – April 2025*)**

Designed and tested RF-enabled embedded hardware systems from prototype through validation.

Conducted signal analysis using oscilloscopes and spectrum analysers to evaluate system performance.

Performed environmental testing across temperature ranges up to ±85°C to verify hardware reliability.

Diagnosed and resolved recurring hardware faults through schematic interpretation and systematic debugging.

Produced technical documentation describing testing procedures, results, and compliance checks.

Electrical Engineering Intern | Bosch Rexroth | India **(*April 2024 – May 2024*)**

Tested hydraulic and electromechanical systems including pumps, industrial motors, and sensor assemblies.

Conducted system fault diagnosis and sensor calibration during validation procedures.

Worked with electrical, mechanical, and hydraulic engineering teams during equipment testing and system verification.

Projects

Industrial Robotic Arm Simulation | ABB RobotStudio **(2025)**

Programmed 6-DOF arm for pick-and-place across 4+ operating scenarios with sensor processing and network integration.

Self-Balancing Robot — Patent Pending | Robofest 4.0 **(2024)**

Custom PID control loop using IMU 6050 data; 30% reduction in oscillation through Kp, Ki, Kd tuning. Secured ₹50,000 grant and progressed to patent filing.

IoT Sensor Network & Predictive Maintenance **(2023–2024)**

ESP32 real-time hydraulic pressure monitoring (sub-500ms latency); Python/Scikit-learn motor failure model at 85%+ accuracy across 10,000+ samples.

Achievements

Patent under process - Self-Balancing Robot (embedded control & hardware stability)
ISRO Training Programme - hardware verification for extreme-environment space applications
Robofest 4.0 Grant Recipient - ₹50,000 for hardware innovation in autonomous robotics