Ashwin Jothi

MECHATRONICS | ROBOTICS & AUTOMATION ENGINEER

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PROFESSIONAL SUMMARY

Mechatronics and Automation Engineer with a Master's in Robotics and Mechatronics and hands-on experience maintaining, troubleshooting, assembling and commissioning industrial automation and robotic systems. Currently supports PLC-controlled production machinery including gantry, waterjet, hydraulic, pneumatic and conveyor systems, with project work across 3D CAD, robotic gantry integration, ROS navigation, machine vision and rapid prototyping.

CORE COMPETENCIES

Industrial Automation Integration | Robotic Gantries & Conveyors | PLC-Controlled Equipment | Pneumatic & Hydraulic Systems | Sensors, Actuators & Motors | Mechanical Design & 3D CAD | Commissioning & Functional Testing | Fault Finding & Corrective Maintenance | Machine Vision | ROS & Sensor Fusion | Python & C++

PROFESSIONAL EXPERIENCE

Mechatronics & Robotics Engineer | Australian Drafting and Engineering Group (ADEG) May 2026-Present

Contracted to Geomada Stone Fabrication | Cheltenham, VIC

- Maintain and fault-find industrial waterjet, saw, gantry, conveyor and automated stone-processing equipment.
- Diagnose mechanical, electrical, hydraulic, pneumatic and controls faults across PLC-controlled machinery, sensors, actuators, motors and encoders.
- Support component modifications, functional testing and return-to-service activities to maintain production reliability.

Assistant Manager | MKC Repairs Mar 2023-Dec 2025

Melbourne, Australia

- Performed board-level electronics and hardware fault diagnosis across PCB assemblies and electronic systems.
- Developed computer-vision workflows for electronics inspection and PCB component defect identification.

Automation Engineer | Merlin Automation Solutions Feb 2022-Nov 2022

Chennai, India

- Assembled, integrated and commissioned industrial automation systems including conveyor systems and robotic gantry platforms.
- Integrated sensors, embedded controllers and actuators across mechanical and electrical systems; performed functional testing and root-cause analysis during commissioning.

Systems Automation Engineer | Ashwin Automations May 2021-Jan 2022

Chennai, India

- Automated iterative hardware workflows with Python and Bash scripting; diagnosed integration bottlenecks between electromechanical hardware and control systems.

SELECTED PROJECTS

Boeing Motor-Controlled Precision Scissor Lift - Produced CAD components in Fusion 360 and Autodesk Inventor; supported electromechanical integration, functional testing and commissioning.

Custom Electromechanical 3D Printer & Instrumentation, RMIT - Built a custom 3D printer using CAD, fabrication and rapid prototyping; integrated an Arduino Mega and 10-DOF IMU for vibration data acquisition and bench testing.

ROS Autonomous Navigation & Sensor Fusion - Integrated IMU and LiDAR sensing for SLAM, localisation, path planning and motion workflows on a mobile robotics project.

MuJoCo Robotic Perception & Synthetic Data - Generated synchronised RGB and LiDAR point clouds; implemented camera geometry, coordinate transforms and 3D-to-2D bounding-box projection.

Enterprise Server HomeLab - Deployed a private server rack with Dell PowerEdge servers; configured Proxmox, TrueNAS, RAID and ECC memory.

EDUCATION

Master of Engineering, Robotics and Mechatronics - RMIT University, Melbourne Feb 2023-Nov 2024

Bachelor of Engineering, Mechatronics - Chennai Institute of Technology 2018-2022

TECHNICAL SKILLS

Mechanical & CAD: SolidWorks, Fusion 360, Autodesk Inventor, CAD interpretation, fabrication, machine assemblies, hydraulics, pneumatics

Automation & Controls: Industrial automation, robotic gantries, conveyors, PLC-controlled equipment troubleshooting, sensors, actuators, motors, encoders

Robotics & Vision: ROS, MoveIt, Gazebo, MuJoCo, NVIDIA Isaac Sim, motion planning, machine vision, LiDAR, camera calibration, point clouds

Hardware & Software: Arduino, IMU integration, I2C, SPI, UART, electronics/PCB troubleshooting, Python, C++, Bash, MATLAB, Linux, Git