

Sajeevan Veeriah

MECHATRONICS, ROBOTICS, AUTONOMOUS SYSTEMS & AI/ML ENGINEER

Geelong, VIC, Australia · +61 498 586 654 · sajeevanveeriah@gmail.com · linkedin.com/in/sajeevan-veeriah · sajeevanveeriah.github.io · Member, Engineers Australia

01 PROFESSIONAL PROFILE

A complete, multidisciplinary engineer who works fluently across the whole stack: mechanical design and CAD, electrical and electromechanical systems, electronics and embedded firmware, industrial controls and automation, robotics and autonomy, and software, data and applied AI and ML. On the autonomy side I build and validate the full stack, from perception, SLAM and state estimation through motion planning, control and embedded firmware to integration, field testing and documented handover. Recent delivery spans an end-to-end ROS 2 autonomous rover, vehicle software and ADAS validation with CAN tooling, GMP smart-factory automation, a digital-twin and industrial-AI concept, and end-to-end IoT with ML-driven monitoring and anomaly detection. Comfortable identifying which engineering layer a problem lives in and resolving it across whatever disciplines that takes.

02 CORE TECHNICAL SKILLS

Robotics & Autonomy	ROS 2 (Humble), Nav2, MoveIt 2, Gazebo, RViz, SLAM, A* path planning, motion control, PID tuning, autonomous navigation
Perception, State Estimation & Vision	Kalman and EKF state estimation, sensor fusion, odometry, LiDAR, IMU, depth cameras, localisation and mapping, OpenCV & YOLO image processing, object detection, visual odometry
AI, ML & Data	Applied machine learning, ML fundamentals, anomaly detection, data analysis and visualisation, MATLAB and Simulink, sensor-data pipelines, InfluxDB, Grafana
Embedded & Real-time	Embedded C and C++, ESP32 and ESP32-S3, STM32, FreeRTOS, UART, I2C, SPI, CAN, ADC, PWM, signal conditioning, board bring-up
Software & Tooling	Python, C, C++, JavaScript, TypeScript, Node.js, REST APIs, MQTT, Linux, Git, JIRA, test automation, CI workflows
Automotive & Validation	Vector CANoe, CANalyzer, CAN bus, CAN FD, ADAS validation, OTA regression testing, vehicle instrumentation, fault isolation
Hardware, CAD & Electromechanical	PCB design (Altium, KiCad), SolidWorks, Fusion 360, motors and drives, VFDs, actuators, sensors, instrumentation, 3D printing
Controls, Automation & QA	Controls systems, PLC (IEC 61131-3), Siemens TIA Portal, WinCC, PCS 7, iFIX, PVI+, HMI and SCADA, MES, Modbus, Profinet, GMP and GAMP 5, ISO, IEC, FMEA, FAT and SAT

03 SELECTED ROBOTICS & ENGINEERING PROJECTS

Autonomous Navigation Rover (ROS 2). Built a complete autonomous navigation stack on ROS 2 Humble with Gazebo and RViz simulation, LiDAR-based SLAM, A* path planning, Kalman and EKF state estimation and odometry and IMU sensor fusion for robust localisation and obstacle-aware navigation.

ESP32 Clinical Ataxia Assessment Device (Honours Capstone). Designed embedded hardware and firmware on ESP32 with IMU, ToF, Hall-effect and magnetometer sensing, real-time signal acquisition, MATLAB data logging and measurement validation against clinical references.

Digital Twin and Industrial AI (concept). Real-time factory digital-twin concept integrating AI agents, anomaly detection, predictive maintenance and OEE analytics, built as a personal engineering project.

IoT GPS and Environmental Monitoring Platform. Delivered ESP32 GPS and environmental sensing over LoRaWAN with MQTT, ChirpStack, InfluxDB and Grafana, covering firmware, device provisioning, telemetry dashboards and field deployment.

04 PROFESSIONAL EXPERIENCE

Automation & Controls Engineer

JAG Process Solutions Pty Ltd

Brunswick, VIC · Jan 2026 to Jun 2026

- Delivered control, integration and smart-factory engineering for pharmaceutical, biotech and food clients under GMP, covering control logic, HMI and process visualisation and batch execution across plants, skids and packaged units.
- Executed an iFIX to PVI+ SCADA migration, converting application content and verifying functional behaviour against the validated system, and produced FAT, SAT, commissioning, qualification and handover documentation.
- Integrated field devices, sensors, drives and process equipment with control logic and production data flows, with attention to diagnostics, safety, usability and data integrity.

Product Development Test Engineer (Contract)

Ford Motor Company via Invenio

Little River, VIC · Oct 2025 to Jan 2026

- Validated vehicle software integration and ADAS features across the T6 Ranger and Everest programmes, running feature-vehicle, breadboard and regression testing for readiness milestones, OTA updates and sign-off evidence.
- Instrumented test vehicles and ran structured drives, capturing and analysing CAN bus data with Vector CANoe and CANalyzer for fault isolation and evidence-based defect reporting.

Technical Assistant

ABMARC

South Geelong, VIC · Jul 2024 to Aug 2025

- Conducted vehicle emissions and compliance testing against ADR and EURO standards, operating test equipment, instrumentation and data-acquisition systems for repeatable, auditable and technically defensible results.
- Prepared compliance, QA and regulatory documentation for certification and audits, and analysed test data to identify deviations, trends and evidence gaps.

Consultant Engineer, IoT & Projects Administrator

DuxTel Pty Ltd

Greater Geelong, VIC · Feb 2024 to Aug 2024

- Designed and deployed end-to-end IoT systems linking sensors, embedded devices, gateways, cloud platforms and dashboards, with real-time ingestion, monitoring and visualisation using InfluxDB and Grafana.
- Commissioned IoT devices onto ChirpStack-based LoRaWAN networks and built an ESP32 GPS and environmental-sensing workflow, covering firmware configuration, device provisioning, testing and deployment.

Earlier Manufacturing & Engineering Experience

IDL, Carbon Revolution & Thornton Engineering

Geelong / Corio, VIC · 2018 to 2024

- Manufacturing operations, equipment operation, QA, engineering-drawing review, ITP and MDR documentation, material traceability, safety and first-level troubleshooting across food and beverage, carbon-fibre and structural-steel manufacturing.

05 EDUCATION

Bachelor of Mechatronics Engineering (Honours)

Completed Jul 2025

- Deakin University, Geelong, VIC, Australia
- Graduated with Distinction (Honours)
- Honours capstone: ESP32 clinical ataxia assessment device (embedded sensing, signal processing and clinical validation)

Higher National Diploma, Mechatronics, Robotics & Automation Engineering

Completed Sep 2016

- Cardiff Metropolitan University, United Kingdom
- Awarded with Distinction

06 CREDENTIALS & COMMUNITY

LICENCE

Current Victorian Driver Licence

CERTIFICATIONS

Lean Six Sigma Foundation, JIRA and Agile, KAIZEN, Industrial Automation and IoT, AI/ML, CAD, SEO.

COMMUNITY ENGAGEMENT

Secretary, Newcomb and District Cricket Club and built the club website (Next.js, Supabase).

HOBBIES & INTERESTS

Building robots & other hands-on projects
Farmhand & follow Soccer, NRL, AFL
Play cricket, hockey, badminton
Travelling with long drives and good music

MEMBERSHIP

Member, Engineers Australia

LANGUAGES

English (Native), Tamil (Native), Sinhala (Native)

UNIVERSITY INVOLVEMENT

Mars Rover Team, Math Mentors, Peer Support and DUSA, Deakin University

07 REFERENCES

Basum Anwar

Project Manager, JAG Process Solutions
b.anwar@jag-ps.com.au · 0476 160 615

Gareth Roberts

Senior Engineer, ABMARC
gareth.roberts@abmarc.com.au · 0422 967 039

Troy Whitworth

Vice President, Newcomb and District Cricket Club
Owner and Manager, Phoenix Truck Bodies
info@phoenixtruckbodies.com · 0400 678 004

Dang Quang Nguyen

Trainer, JAG Process Solutions
dang.q.nguyen@live.com.au · 0497 024 349

John Elliott

President, Newcomb and District Cricket Club
Detective Acting Senior Sergeant, Victoria Police
john.elliott@police.vic.gov.au · 0419 236 866