Omer Saeed
Linkedin | 0478883728 | momer9595@gmail.com | Merrylands, NSW, 2160

Career Summary

Experienced Mechatronics Engineer with a proven track record in delivering innovative embedded systems and industrial automation solutions. Successfully led the design and development of custom products using CNC machining, PCB design (IPC standards), 3D printing, and PLC/robotics integration. Applied standards like ISO 13849 and IEC 62061 to ensure safety and reliability, while utilizing communication protocols such as I2C, SPI, UART, and MDB in firmware development. Delivered high-impact, industry-ready solutions through a systems-thinking approach and cross-functional collaboration. Holds a Master's in Mechatronics Engineering and is a registered engineer with Engineers Australia, committed to advancing sustainable engineering across Australian industry.

Skills

- Mechatronics System Design | Control Systems | PLC | Circuit & PCB Designing | Process & Quality Control (QC) | Logic Design (Fuzzy logic , 2 Step) | Rapid Prototyping | Microcontroller Programming And Integration | Manufacturing Devices | Development Environments KIEL , STMCUBE | Manufacturing Devices | Technical Documentation | Motor Control | Stepper Motor Control | IMU's & Active Sensor | IOT | ESP32.
- SolidWorks | PTC Creo | AutoCAD | CAD | Design to Manufacture | Sheetmetal Design & Manufacturing | CNC Machining | 3D Printing | 3D Scanning | Sheet Metal Fabrication | CNC LASER Cutting | CNC DXF Format | Reverse Engineering |
- Project Management | Lean six sigma | Toyota 5S methodologies | Microsoft Project | MS Office Suite | English– Professional Proficiency

Experiences

Product Designer **METAL MASTER** *Sydney, AU* **03/2025 - Present**

- Work closely with clients, project managers, and internal teams to gather design requirements, ensuring alignment with functional needs, branding, and market trends.
- Translate ideas into preliminary sketches, hand-drawn concept illustrations, and digital renderings. Develop multiple design iterations for client approval and refine concepts based on feedback to ensure the best product outcome.
- Utilize advanced CAD software, such as SolidWorks and AutoCAD, to create highly detailed 3D models and parametric designs. Generate detailed engineering drawings and assembly instructions, to facilitate accurate fabrication.
- Select and recommend suitable materials and optimize designs for CNC machining, laser cutting, turret punching, sheet metal bending, and powder coating processes
- Conduct product testing and evaluate prototypes for structural integrity, functionality, and aesthetics. Iterate designs based on test results to improve performance and user experience.
- Provide clear guidance for manufacturing teams to ensure design intent is maintained throughout the production process.
- Work closely with quality assurance teams to perform design reviews and implement continuous improvements based on customer feedback and production challenges.

Mechatronics Engineer **CC2GO WIRELESS TECHNOLOGIES** *Sydney, AU* **01/2024 - 02/2025**

- Led the development of a cashless payment solution for vending machines to meet the growing demand for contactless transactions.
- Designed and developed a custom PCB to manage vending peripherals, integrating MDB (Multi-Drop Bus) and
- UART communication protocols.
- Created a robust hardware interface for real-time communication between vending systems and external payment modules.
- Planned scalable solution architecture with forward compatibility for future product lines and evolving market needs.
- Conducted market research and gap analysis to propose innovative features for upcoming products.
- Collaborated with cross-functional teams including firmware developers, project managers, and suppliers to ensure end-to-end integration.
- Successfully delivered a functional prototype meeting all technical and commercial requirements (details protected under NDA).
- Strengthened expertise in embedded systems, protocol integration, and aligning product design with long-term business strategy.

Electronics Engineer **SMART MONITORING SOLUTIONS** *Remote, UK* **05/2022 - 07/2023**

- Created early-stage electronics designs and customized circuit boards for embedded system applications.
- Led schematic capture, PCB layout, and integration for complex embedded systems, ensuring functionality, signal integrity, and manufacturing feasibility.
- Planned scalable solution architectures for upcoming products by identifying market gaps and proposing forward-looking innovations.
- Developed proof-of-concept hardware and prototyping for internal testing and client demonstration.
- Worked closely with cross-disciplinary teams to ensure tight hardware–firmware integration.

- **Key Project: GLOBAL TRACKING SYSTEM**
- Developed a compact and efficient six-layer PCB design integrating STM32 microcontroller and Raspberry Pi for high-performance embedded tracking.
- Enabled communication with GPS, GSM, and GNSS modules for real-time multichannel tracking and remote accessibility.
- Focused on high-reliability signal routing, power distribution, and modular expandability in the PCB design.
- Contributed to product strategy by aligning hardware features with scalability and multi-industry use cases (transport, asset tracking, security).
- Resulted in a functional prototype capable of global object tracking, forming the core of a potential commercial solution.

Mechatronics Engineer **ZAMBEEL MACHINE CRAFT** *NSTP, PAK* **05/2022 - 07/2023**

- Developed early-stage physical prototypes to validate product functionality and design feasibility for power electronics applications.
- Customized electrical and electronic circuit designs based on specific performance targets and client requirements.
- Focused on power monitoring systems, with an emphasis on stress-testing hardware under high-current conditions.
- Designed and optimized analog and digital circuit interfaces to ensure accurate performance and long-term reliability.
- Worked collaboratively with firmware and testing teams to close the loop between design, performance, and user needs.
- **Key Project: HIGH POWER CURRENT SENSOR**
- Designed and delivered a complete working prototype of a high-resolution current sensor using an external ADC to enhance accuracy.
- Developed a robust custom PCB using Altium, focusing on ruggedness and thermal reliability for high-power applications.
- Integrated the device with LabVIEW-based HMI, enabling real-time monitoring, calibration, and user interaction through a clean GUI.
- Enabled precision current measurement under extreme load conditions, validating the design through lab stress testing.
- Contributed to improving client confidence by producing a scalable and user-friendly solution ready for field trials.

Mechatronics Engineer **SYSVERVE AEROSPACE** ***PAK*** **05/2022 - 07/202**

- Led R&D in embedded electronics, sensor integration, and motor control systems for UAVs and aerospace applications.
- Developed and prototyped UAV subsystems including sensor arrays, brushless motor integrations, and actuator controls to improve flight efficiency and stability.
- Designed and built functional 3D-printed prototypes using CAD tools (SAolidWorks, Fusion 360) and the Ender 5 Pro for iterative testing
  stress evaluation, and aerodynamic optimization.
- Created custom applications integrating humidity sensors, webcams, stepper/servo motors, and other hardware for real-time data acquisition and control.
- Engineered advanced algorithms for image processing and automation, enhancing UAV decision-making and sensor feedback interpretation.
- Anti-Drone Defense System: Designed and prototyped a system to detect unauthorized drones using image processing, with automated actuator control to stabilize and respond using a recoil-dampened mechanism.
- Gained hands-on experience with end-to-end R&D cycles—from concept, simulation, and testing to integration and final validation.

Education

Masters of Mechatronics Engineering	**University of Wollongong**	*Australia*	**07/2023 - 06/2025**
Bachelors of Mechatronics Engineering	**University of Wollongong**	*Pakistan*	**09/2016 - 09/2020**

Certifications

- Professional Engineer nec – Engineers Australia EA-ID-10012718
- Rapid Prototyping for IOT Based Embedded Systems Using ESP32: Air University , PAK
- Lean Six Sigma Training : BitDegree (ID – 3127235)
- Toyota 5S Methodology – Indus Motor Company Ltd
- Registered Engineer – Pakistan Engineering Council MECHTRO/03861A
- Innovation Throught Design: Think , Make , Break , Repeat : University of Sydney
- Modeling and Debugging Embedded Systems : University of Colorado Boulder
- Critical Roles Consultants Play : Linkedin Learning
- Systems Thinking for Product Designers : linkedin Learning
- Additive manufacturing : linkedin Learning

References

- Available upon request.