Michael Lo Russo

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SUMMARY

Engineering student specialising in Mechatronics, with hands-on experience in control systems, mechanical design, and embedded programming. Strong team player with a history of applying engineering skills to real-world challenges, including hands-on involvement in building a house. Committed to continuous learning and practical problem-solving.

*Visit my website for more details on my projects: **mlorusso.com***

EDUCATION

Bachelor of Engineering (Honours) (Robotics and Mechatronics)   January 2022 - August 2026
University of New South Wales

EXPERIENCE

Experience Consultant   January 2023 - Present
Samsung Electronics
- Diagnosed and resolved technical issues for Samsung mobile phones, tablets, and smart devices, consistently maintaining an NPS rating of 90%+.
- Delivered customer and technical support across different devices through phone, email, and in-store service channels.
- Communicated complex technical information clearly to both technical and non-technical users, improving customer satisfaction and reducing resolution time.
- Conducted weekly training on end-of-day/start-of-day procedures and customer service excellence, significantly boosting operational efficiency.

PERSONAL PROJECTS

Development of Web-Based Photovoltaic-Thermal and Heat Pump Assessment Tool (Thesis)   September 2025 – Present
University of New South Wales Sydney
- Collaborating with *Coolsheet* to design and implement a web-based modelling tool that evaluates the energy performance and cost-saving potential of photovoltaic-thermal (PVT) and heat pump systems for industrial and commercial applications.
- Conducting comprehensive techno-economic assessments to analyse lifecycle performance, payback periods, and investment feasibility under different climatic and operating conditions.

UR5e Robotic System   May 2025 - August 2025
University of New South Wales Sydney
- Programmed UR5e robot for math problem solving, pick-and-place tasks, and orientation adjustments.
- Ensured smooth pen lifts, precise placement, and human-like writing motions.
- Developed motion planning and coordination systems for accurate positioning and task execution.

Custom Cooling Funnels for PC Hardware   January 2025 - January 2025
- Designed and manufactured custom 3D-printed cooling funnels using PLA material to optimise airflow for GPU thermal management in PC Hardware.
- Reduced operating temperatures by 7° C under full load, drawing inspiration from automotive cooling systems.
- Created detailed models in Fusion 360, prepared manufacturing files in Bambu Studio, and executed high-precision additive manufacturing for hardware integration.

Micromouse Maze Navigation Robot   May 2024 - August 2024
- Designed and programmed a Micromouse autonomous robot for maze navigation using LiDAR, IMU, and wheel encoder sensors integrated with PID control and real-time path planning algorithms.
- Implemented computer vision and OpenCV to generate occupancy grid maps and applied Breadth-First Search (BFS) for efficient obstacle detection and avoidance.
- Added manual override functionality via user-defined input sequences (e.g., f, l, r) for directional control. Engineered software on an Arduino Nano using Python and OpenCV for dynamic path planning in real time.

Construction   June 2024 - April 2025
- Built a house alongside my father.
- Performed diverse construction tasks including framing, roofing, plumbing, and electrical installation, gaining multidisciplinary technical experience.
- Coordinated maintenance and repair activities to improve durability, safety, and compliance with building codes and regulations.

Unmanned Ground Vehicle (UGV) Control System   September 2024 - December 2024
University of New South Wales Sydney
- Created a multi-threaded C++ control system integrating LiDAR, GNSS, Xbox Controller, and collision sensors.
- Documented and presented control modules for vehicle operation, MATLAB visualization, and crash avoidance with live sensor feedback.

Multi-Robot Collaboration Simulation (Webots & C++)   September 2023 - December 2023
University of New South Wales Sydney
- Built a C++ Webots robotic system where multiple robots collaboratively detected objects of interest (OOI).
- Spearheaded leader–scout coordination strategy, guiding scout robots for OOI detection and navigation efficiency.

Personal Portfolio Website   May 2025 - Present
- Developed a responsive portfolio site using Next.js 14, TypeScript, and Tailwind CSS.
- Implemented smooth navigation, dark/light mode toggle, and interactive before/after image sliders.
- Showcased projects and integrated a downloadable CV.

TECHNICAL SKILLS

Programming Languages:	C, C++, Python, Java, MATLAB, VHDL, MIPS Assembly, LaTeX.
CAD & Design Software:	SolidWorks, Fusion 360, Bambu Studio, MakerWorld.
Developer Tools:	VS Code, Visual Studio 2022, Arduino IDE, Anaconda, Jupyter Notebook.
Cloud & Productivity Tools:	Git, Google Cloud Platform, Microsoft Office Suite (Word, Excel, PowerPoint, Outlook).

EXTRA-CURRICULAR ACTIVITIES AND INTERESTS

UNSW Mechatronics Society:	Active member participating in workshops and interfaculty activities.
Gym / Fitness:	Regular strength and endurance training, maintaining consistency.
Gaming and Technology:	Interest in emerging tech.