Jayden Skidmore

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Education

Australian National University

- *Bachelor's of Engineering (Research and Development) (Honours) in Mechatronics & Bachelor's of Science in Computer Science and Mathematics* — February 2022 – Present — ***GPA: 6.875 / 7***
- *Bachelor's of Studies in Engineering* — February 2020 – November 2021 — ***Grade: High Distinction***

Marist College Canberra

February 2020 – November 2021

- *Senior Secondary Certificate; Subject Prize for Engineering* — ***ATAR: 99.15***

Skills

Technical Skills: Altium Designer, STM32CubeIDE, CodeComposer, Xilinx Vivado, LTSpice, SolidWorks, EasyEDA
Programming Languages: C/C++, Python, Verilog, Java, MATLAB, SQL, Assembly
Microcontroller/FPGA Families: STM32, TI MSP, AMD FPGAs, ESP32, Teensy, Arduino AVR

Experience

ANU Solar Racing | *Electronics Engineer*

Battery Management System | GitHub — **Oct. 2023 – Present**

- Designed and implemented a 300VDC Battery Management System in Altium Designer utilising recent automotive Analog Front-End chips and proprietary communication interfaces. With an STM32 U5 microcontroller at the heart of the system, the design cut costs by 90%, reduced size by 70% and consuming only 3% of the power compared to available alternatives
- Developed key prototyping skills through isolated circuit testing, voltage probing and oscilloscope readings to verify robust functionality under all expected environments, resulting in a reliable design built to last 3022km
- Produced technical deliverables and written documentation such as circuit schematics, PCB designs, bill of materials, and code reviews, to allow for easy understanding, handover, and professional review

Low Voltage and Control Systems | GitHub — **Mar. 2022 - Present**

- Designed, soldered and implemented over 30 unique printed circuit boards, with corresponding circuit schematics and MCAD designs covering the areas of communications and telemetry, power conversion and distribution, drive train control, data visualisation and logging, and high voltage safety
- Collaboratively expanded upon ideas through active communication and shared version-controlled development, creating and leading workshops to upskill and train team members, and reviewing designs to help guide others towards achieving their own success
- Helped reverse the post-covid near complete loss of electronics knowledge within the team to a team designing various competition-leading innovative systems outperforming both international and domestic teams
- Managed and resolved all telemetry and electrical issues coming from the 2023 and 2025 competition vehicles, making high-stress time-critical decisions and ensuring race strategies won't introduce any risk to the driver or beyond

Questacon | *Floor Staff* — **Feb. 2021 – Dec. 2021**

- Communicated advanced scientific concepts to demographics of varying experience in a friendly and effective manner, fostering an environment of teaching and learning both for the public and personally

Research Projects

Robotic SLAM Algorithm Characterisation — **Feb. 2025 - Present**

- Expanded a Python-based Extended Kalman Filter module to simulate landmark-based robot Simultaneous Localisation and Mapping (SLAM) and incorporate task-driven objectives, interactive path and uncertainty visualisation, and dynamic robot control
- Implemented and characterised the performance of cutting-edge and self-developed optimisation algorithms against key metrics to provide insight on methods to optimise robot decision making depending on desired system performace

Composite Material EMI Shielding — **Feb. 2024 - July 2024**

- Performed comprehensive material characterisations through the use of Vector Network Analysers and Four-Point Probe testing to compare the Electromagentic Interference (EMI) shielding effectivity of various $Ti_3C_2T_x$, graphene, and carbon nanotube composite materials for use within mobile phones
- Produced a comprehensive project report and seminar containing all aspects of the background, theory, results and future work, while being understandable by research fellows without experience in the specific field