Abael Joseph

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Career Objective

Fifth-year Mechanical & Mechatronics Engineering student seeking a graduate engineering role to apply hands on experience in robotics, embedded systems, and electromechanical design. I aim to contribute to innovative engineering solutions while developing my technical and professional skills in a collaborative team environment

Education

Bachelor of Engineering (Honours) – Mechanical and Mechatronics   **March 2022 – November 2026**
University of Technology Sydney (UTS), Ultimo, NSW

Weighted Average Mark (WAM): **78.67**
Grade Point Average (GPA): **5.46 / 7.00**

Academic Achievements:
- High Distinction – Introduction to Mechatronics Engineering
- High Distinction – Materials and Manufacturing Engineering A
- Distinction – Introduction to Mechanical Engineering
- Distinction – Introduction to Engineering Projects
- Distinction – Programming 1

Technical Skills

- **CAD & Mechanical Design:** SolidWorks, AutoCAD, AutoCAD Mechanical, Fusion 360, Autodesk Inventor
- **Embedded Systems & Control:** Arduino, ESP32 (ESP32-C3 and variants), Raspberry Pi, ISaGRAF, firmware development, hardware interfacing
- **Electronics & Hardware:** Altium Designer (schematics, PCB layout), sensor integration, analog signal handling, LiPo power systems
- **Programming:** C++, C, Python, Java
- **Software & Documentation:** MATLAB, Microsoft Office Suite (Word, Excel, PowerPoint, Visio), Google Workspace (Docs, Sheets, Slides), Canva

Engineering Experience

Intern Engineer   **December 2023 – Present**
duagon Australia
- Supported testing of 5+ rail communication systems, ensuring compliance with industry standards
- Managed CAD drawings for manufacturing in duagon DTK, including creating drawings for new metalwork orders in AutoCAD Mechanical
- Led CAD, internal documentation, and compliance testing for a specific controller, ensuring readiness for deployment
- Designed and tested jigs for incoming PCB goods and performed board conversions, updating PCB components as required
- Gained experience in professional engineering workflows and multidisciplinary teamwork

Casual Experience

Freight Forwarder   **May 2022 – June 2023**
Border Express
- Managed unloading and sorting of pallets and parcels in a high-volume warehouse
- Developed teamwork, time management, and attention to detail

Relevant Projects

Engineering Without Borders (EWB) – Solar Hydrogen Generator
- Designed a sustainable off-grid energy system for an Indigenous community in collaboration with Dawul Wuru Aboriginal Corporation
- Researched energy options; hydrogen fuel cells ~30% more efficient than diesel generators
- Developed a modular, transportable system design suitable for remote deployment
- Focused on long-term sustainability and reduced environmental impact

Warman Design and Build Challenge – Autonomous Robotics System
- Programmed Arduino Uno with CNC shield to control stepper motors using C++
- Designed and 3D-printed a robotic arm in SolidWorks for payload manipulation
- Implemented motion control logic; autonomous robot successfully deposited 90% of objects within time limits
- Integrated mechanical, electronics, and software subsystems into a fully functional autonomous robot

Step-Tracking Smartwatch – Embedded Systems Project
- Built a compact wearable device using ESP32-C3 microcontroller with Wi-Fi & Bluetooth
- Integrated 1.28″ TFT display, scrolling rotary encoder, and LiPo power system
- Developed firmware for real-time step tracking using an analog accelerometer
- Designed custom PCB, user interface, and robust standalone embedded system

Transferable Skills

Teamwork
- Demonstrated through industry employment and university group projects, contributing effectively to shared goals in fast-paced environments

Critical Thinking
- Applied during engineering design projects to evaluate alternative solutions and improve system performance

Problem-Solving
- Developed through practical engineering tasks and programming challenges requiring efficient and reliable solutions

Attention to Detail
- Demonstrated in both warehouse operations and engineering projects through accurate execution and thorough research

References

Available upon request