Giulio Lepone

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Education

University of Wollongong 2023 – 2027
Bachelor of Mechatronics Engineering (Honours) *Wollongong, NSW*

Experience

Hysata November 2024 – Present
Mechanical Engineer Intern *Port Kembla, NSW*

- Took mechanical components for high-efficiency electrolyser systems end to end, from concept and CAD through design for manufacture, fabrication, testing and deployment on the production floor.
- Modelled assemblies, fixtures and manufacturing drawings in Siemens NX with Teamcenter PLM, applying GD&T and tolerance stack-ups to release production-ready parts.
- Given ownership of high-priority projects across their full lifecycle (concept, CAD, fabrication, testing and handover) and trained team members to operate and maintain the resulting equipment.
- Supported development of robotic welding systems and operated advanced fabrication equipment including waterjet cutters, laser cutters and Class IV robotic laser welders for in-house component production.
- Programmed custom jigs and fixtures in C++ and Arduino to automate testing and assembly, and assisted with electrical wiring, diagnostics and mechanical troubleshooting across build and test cycles.
- Authored standard operating procedures and risk assessments, and tracked concurrent build projects through to delivery using JIRA and Teamcenter.

Projects

Honours Thesis: Electroless Nickel-Plated Bipolar Plates | *UOW & Hysata* Expected 2027

- Developing an electroless nickel plating process for stainless steel bipolar plates that cuts material cost while preserving long-term corrosion resistance, a transferable approach for any industry needing cheaper components that stay rust-free across their service life.
- Supervised by Professor Gerry Swiegers, Chief Scientific Officer at Hysata.

SmartStride: Frame Running Performance Tracker | *ECTE351, UOW* 2026

- Partnered with Frame Running Wollongong (a not-for-profit running inclusive sport sessions for children) to design SmartStride, a custom effort-tracking device built around an ESP32-S3 with accelerometer and heart-rate sensing, an onboard display and a live coach app.
- Responsible for circuit and PCB design, the 3D-printed enclosure and sponsor communication.

Skills & Tools

CAD & PLM: Siemens NX, Teamcenter, Autodesk Inventor, SOLIDWORKS, AutoCAD
Engineering: GD&T, design for manufacture, mechanical testing, industrial robotics, CMM, troubleshooting
Programming: C/C++, Arduino, MATLAB, VS Code
Fabrication: Waterjet cutting, laser cutting, robotic laser welding, 3D printing, pressure and leak testing
Project Tools: Atlassian JIRA, Teamcenter PLM
Documentation: SOPs, risk assessments, BOMs, manufacturing drawings
Languages: English (Native), Italian (Native)

Extracurricular

AI International Summer School (New Colombo Plan Scholarship) June 2025 – July 2025
Central China Normal University *Wuhan, China*

- Designed a Learner State Detection AI using webcam-based emotion tracking to help students reflect on focus and mood, collaborating with international peers on engineering topics.

Engineers Australia – Student Ambassador Autumn 2024 – Spring 2024
University of Wollongong *Wollongong, NSW*

- Represented the engineering student community at events and promoted engagement, developing professional communication and leadership skills.