Sachin Hanel

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CAREER OBJECTIVE

Mechatronic engineering undergraduate with a strong interest in automation, systems integration, and manufacturing engineering. Experienced in working within pharmaceutical manufacturing environments, with a solid foundation in design, analysis, and collaborative problem solving to support reliable, real-world engineering systems.

EDUCATION

Bachelor of Mechatronic Engineering: Fourth-year

University of Technology Sydney (expected graduation: 2025 Semester 2)

Achievements:

- **GPA: 6.27 / 7.00 | WAM: 79.43**
- **10+ High Distinctions achieved (**Mechanical Design Fundamentals Studio, Embedded Mechatronic Systems, Sensors and Control for Mechatronics Systems, …)

Selected Projects - Hyperlinks provide further details:

- **Won UTS Techfest** through development of **a ROS2-based UR3e face drawing architecture** integrating computer vision, trajectory planning, and custom 3D-printed end effectors **(HD)**. *(Full Details)*
- Built an **embedded ground station computer for the UTS Rocketry Team**, enabling telemetry communication during rocket testing campaigns. *(Full Details)*
- Designed **custom PCB in Altium Designer** for automated 'Step Tracker' project **(HD)**. *(Portfolio)*
- Collaborated on a **ROS-based multi-robot firefighting simulator** utilising autonomous **SLAM nav** in dynamic simulated environments. *(Full Details)*
- Designed and built an **autonomous robotic system** for the **Warman Design & Build Challenge 2023**, applying CAD, control systems, and rapid prototyping **(HD)**. *(Portfolio)*

HSC ATAR: 94.20

St. Ignatius College, Riverview

- Higher School Certificate completed 2021.

WORK EXPERIENCE

Process and Automation Engineer Intern – AstraZeneca (Aug 2024 – Dec 2024)

Macquarie Park Manufacturing Site

- **Modified mechanical operation** of multiple manufacturing lines producing 150,000+ asthma mediation respules per hour, **increasing efficiency and reducing downtime**.
- Conceptualised and actioned a project standardising mechanical piston timings between lines, based on **statistical analysis** of historical performance and presenting my changes to the
- company at the project's conclusion (Presentation Slides).
- Became familiar with **Siemens and B&R** software/hardware interface, PLCs and other mechatronic systems used throughout the manufacturing line.
- Developed strong, lasting relationships with coworkers and collaborated effectively

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TRANSFERABLE SKILLS

- **Critical thinking and communication of technical ideas** achieved through debating and public speaking as well as through collaboration and presentation of complete bodies of work in university.
- **Strong organisational skills and team project management** developed through ideation and economic planning of renewable hydrogen gas energy generation system in the EWB (Engineers Without Borders) challenge.
- **Advanced communication and teamwork skills** developed throughout various customer service duties while working as a bar attendant.
- **Creativity and design skills** developed during the design and ideation of an autonomous delivery robot as part of the Warman Challenge during the Mechanical Design and Fundamentals course.
- **Discipline, perseverance, and performance ability** developed as a classically trained pianist.

TECHNICAL SKILLS

- Proficient in **ROS/Ubuntu/Gazebo in conjunction with C++, Python and Java** for the control of various robotic systems and object-oriented programming tasks such as in the Sensors and Control subject through the development of an autonomous navigation system for a Fetch robot.
- Experience in **Embedded C and VHDL code** for the development of highly optimised **MCU and FPGA-based projects**, as well as **familiarity with UART, SPI and I2C** communication methods.
- Utilised **Altium Designer** for the creation of **custom PCBs** and experience in their assembly and testing.
- Knowledge and practical application of **MATLAB to simulate robotic components** and make mathematical predictions.
- Sound knowledge of **CAD skills**, specifically through SOLIDWORKS.
- Strong **mathematical and analytical** thinking skills.
- Knowledge of various mechanical and mechatronic production processes.

VOLUNTEERING

- Ignatian service program from year 7 to 12 - **120+ hours total service in the community**. Including aged care, schools in disadvantaged areas, food drives and public services such as gardening.
    - Includes working experience at a food bank, stocking and organising shelves as well as serving customers and large bulk orders (Jesuit Social Services Emerton Parish: https://jss.org.au/westernsydney/).

REFERENCES

Contact details provided on request