# Thomas Harrison

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## Personal Summary

Mechatronics engineer developing skills and knowledge through practical work experiences. Aiming to apply proven past record of reliability and dedication to drive successful project completion in a dynamic engineering team.

## Education

**Bachelor of Engineering (Mechatronics) Diploma in Professional Engineering Practice**
**University of Technology Sydney (UTS)** **Feb 2017 - Nov 2021 (expected)**

- Average Mark: 87.2% (High Distinction Average)
- Grade Point Average: 6.64/7
- Dean's List of undergraduate students 2017, 2018, 2019 and 2020

**NSW Higher School Certificate**
**Gosford High School (Academically Selective)** **Jan 2015 - Nov 2016**

- ATAR - 88.0

## Employment

**Manufacturing Mechatronics Engineer** **Nov 2020 - Present**
**ResMed**

- Assembly and testing of robot end of arm tool for automatic de-moulding of silicon masks from injection mould tools.
- Utilise VISI CAD software to design 3D models and technical drawings of injection moulding testing equipment and overseeing manufacturing of designs.
- Reviewing existing silicon de-moulding processes to propose improvements.

**Key Achievements:**

- Successful robot end of arm tool implementation used to manufacture 100,000's of masks every year in ResMed manufacturing facilities.

**Mechanical Engineer** **July 2018 - July 2019**
**BORG Manufacturing/Crossmuller**

- Utilise SolidWorks CAD software to design 3D models and create technical drawings for production equipment including automated conveyor systems.
- Structural validation of designs using Finite Element Analysis (FEA).
- Bill of Material (BOM) and design documentation manuals.
- Mechanical and electrical assembly of production equipment from technical schematics.

**Key Achievements:**

- Gained high level of competency with SolidWorks.
- Designed new organisation wide sales vehicle on-board storage system to improve efficiency and safety.

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**Retail Sales Assistant** **February 2020 - March 2021**
**Jaycar Electronics**

- Effectively communicate with customers to understand their needs and propose electronics products to solve their technical problems.
- Work collaboratively with team members to make sure all daily tasks are completed.
- Ensure sales targets are met.

## Technical Skills

- **Systems:** Windows, Linux, Macintosh, Robot Operating System (ROS).
- **Software:** SolidWorks, Finite Element Analysis (FEA), VISI CAD, AutoCAD, ABB Robot Studio, PowerMill and SolidCAM CNC programming, VS Code, GitHub, Minitab, MS Office.
- **Programming Languages:** Embedded C, C++, MATLAB, Python.
- **Hardware:** Commercial (SMC and Festo brand) pneumatics, actuators, sensors, and electronics. 3D printers, Arduino microcontrollers and their sensors, motors and electrical wiring.

## Transferable Skills

**Task Management**

- Proven record of successful on time project delivery. E.g. robot end of arm tool project completed with ResMed.
- Managing completion of simultaneous projects. E.g. balancing robot end of arm tool assembly and engineering design projects simultaneously at ResMed.
- Prioritise group and individual university project tasks to achieve a consistent high distinction average grade.

**Communication and Team Collaboration**

- Improved communication skills through actively listening and communicating with Jaycar customers to solve their technical needs.
- Effective fast paced collaboration with NSW Rural Fire Service team members when on active firegrounds.
- Have frequently led collaboration during university group projects to influence successful outcomes.

## Additional Activities

- **NSW Rural Fire Service (RFS) Volunteering:** This has involved responding to rural bush fires, training new members, community engagement and maintaining local bushland. I also spent upwards of 180 hours volunteering during the Black Summer 2019-20 bushfires.

- **Go-kart building:** During free time, I work on design and construction of a go-kart with two friends.

- **3D printing, robotics, electronics, and computer building projects.**

- **Bushwalking, canyoning and tennis.**

## Referees

Available upon request.