

# Gabriel Thien

B. Mechatronics Engineering/B. Computer Science Undergraduate at UNSW. Currently employed at Asiga 3D Printers as a part time prototype/mechatronics engineer. Dedicated student interested in embedded devices, automated systems and robotic software development. Tech-passionate student who loves tinkering around in the workshop with experience in prototyping solutions and technician work. Highly involved in various technical projects & endeavours at university. Currently looking for casual/part-time administrative/technical work or internships in mechatronics/software engineering.

Highlight technical & soft skills from various commitments:

- Product development, problem solving, design, prototyping, testing in STEM and enterprise competitions (nationally & internationally since 2017)
- Software development with C++, Python & Java, HTTP testing with Postman
- Embedded software development with C, C++ & Arduino Framework, PlatformIO IDE
- Microcontroller experience with Arduino, ESP32, Raspberry Pi
- Mechanical & electronics design, CAD
- Hands on workshop tooling, assembly & testing electronic devices
- Pitching, collaboration, presentation, networking and communication skills across all

## EDUCATION

**UNSW, Kensington – Undergraduate, 2021~2025**

Degree: B. Mechatronics Engineering /B. Computer Science

Societies: Engineering Society (EngSoc), Computer Science & Engineering Society (CSESoc), UNSW CompClub, UNSW CREATE

**Fort Street High School, Petersham – 2015~2020**

ATAR: 96.90

Involvements: FSHS Robotics, FSHS F1 in Schools, Student Workshop

## EXPERIENCE

### • Prototype Engineer @ Asiga 3D Printers (03.23 ~ Present)

- Designed & tested proof of concept electronics, reliability testing platforms
- Prototyped mechanisms subsystems for unreleased products
- Involved product development, client analysis and edge case consideration
- Providing engineering support for senior engineers

### • Machine Technician @ Archie Brothers Alexandria (06.22 ~ 10.22)

- Fault diagnosis & repair of various electrical, mechanical systems
- Fault finding, equipment testing and verification, reporting
- Parts procurement, replacement & servicing
- Regular maintenance, on-call technical support

**Self-Employed PC Builder (01.21 ~)**

**Self-Employed Tutor (06.21 ~ 12.21)**

## VOLUNTEERING EXPERIENCE

### • CREATErLabs Projects Director @ UNSW CREATE (09.22 ~ Present)

- Founder & director of engineering projects division
- Managing workflows, coordinating meetings, liaison with sponsor companies
- Directing projects involving robotics, drones & automated systems, mechanical systems, mechatronics, software development, computer vision

### • Internals Subcommittee & Mentor @ UNSW CompClub (05.22 ~ Present)

- Teaching introductory code, programming concepts, logical thinking, program control in workshops for high school students
- Organised slides, coordinated teaching strategies & content retention, classroom leadership

### • Peer Mentor @ UNSW EngSoc & CSESoc (01.22 ~ Present)

- Social leadership amongst uni students, new students
- Organised bonding events, provided general academic support, promoting uni culture



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[Linkedin](#)

[Projects Portfolio](#)

## SKILLS & QUALITIES

*Self-driven learner, highly organised and motivated*

*Takes initiative & maintains highly transparent communication*

*Involved in university community, team based work, volunteering, leadership positions*

*Strong communication, presentation, networking, collaboration skills*

*Outgoing and friendly personality*

*Product development, ideation, procuring solutions*

*Computer literate, AV/desktop support & installation*

## TECHNICAL SKILLSETS & FAMILIAR TECHNOLOGIES

*Programming experience*

- C, C++, Python, Java, Arduino Framework
- Object Oriented Programming
- HTTP, JUnit testing
- Agile Development, Git, Postman

*Delicate hands on work, PCB design & testing, electronics, soldering, debugging, repair, assembly & maintenance*

*3D CAD, rapid prototyping, 3D printing, laser cutting, workshop assembly skills*

*Fault finding & diagnosis, electronics repair and assembly*

*PC building & installation, desktop support*

## FAMILIAR SOFTWARE

*Autodesk Fusion 360, EAGLE, Inventor, Solidworks*

*Ultimaker Cura, Adobe Suite*

*Visual Studio Code, Postman, Webots Simulation Software*

*Arduino framework, PlatformIO IDE*

## PROJECTS

[Link to Projects Portfolio](#)

- **[Cafeteria Software Simulation \(09.22 ~ 11.22\)](#)**
  - Designed a cafeteria simulation in C++ involving customers, staff and their simulated interactions in states
  - Customers ordering, staff executing transactions, outputting an account book with successful transactions
- **Dungeonmania Game (09.22 ~ 11.22)**
  - Developed backend functionalities in Java for a simple pixel retro game with OOP
  - Designed entity objects, interactions and game mechanics
- **Autonomous Droid Racing Challenge @ QUT (05.22 ~ 07.22)**
  - Project lead on electronics, strategy and computer vision
  - Developed autonomous vehicle racing car, bang-bang algorithm used for navigation on a processed camera video feed
- **[Streams Backend \(02.22 ~ 04.22\)](#)**
  - Developed backend functionalities for a mockup of Microsoft Teams using Python
  - Used Python flask module to host a mini web server, Postman for HTTP testing, pytest for functionality testing
  - Implemented various features of Microsoft Teams such as user permissions, authentication, persistence, channels, posts/messages, profile pictures, file storage
- **Motorised Camera Mount Solution @ UNSW Offworld Robotics (2021)**
- **Competitive Robotics @ RoboCup Junior (2017-2019)**
  - Team lead on design, engineering, testing of autonomous competitive robots with various sensors and interactive mechanisms
  - Involved mechanical/electronics assembly, 3D printing, laser cutting, manual dexterity, workshop hand tools
  - NSW State & Australian National Finals 2017-2019. International 2019.
- **Competitive Product Development @ F1 in Schools (2018 - 2019)**
  - Lead design, manufacturing of model racing F1 cars
  - Regional, State and National Finals @ Melbourne 2019

## AWARDS & ACHIEVEMENTS

- Australian Defence Force Award for STEM Youth Leadership (Databased)
- The Michael Kirby & John Singleton Prize for Originality, Leadership, Representation
- University of Melbourne, Dean of Engineering Award for Best Robot Design & Innovation
  - Best custom robot design in mechanics, electronics & programming
  - RCJ Australian Finals 2019
- Innovation Award in Robot Design
  - RCJ NSW Finals 2018 & 2019
- 10th Place F1 in Schools STEM Competition
  - Progressed through to regional, state and national Australian finals @ Melbourne 2019

## HOBBIES & INTERESTS

- Bouldering, rock climbing, hiking & camping
- Enthusiast PC building, parts procurement & IT setup
- Jigsaw puzzles, Lego, programming simulations
- 3D printing, CAD modelling, drone building
- IoT, smart home electronics (eg. home server, drones & control-gloves)

## REFERENCES

- Adam Semaan (Teacher/mentor) ... 0431 592 294
- Xavier Cooney (Competitive robotics teammate/4 years) ... 0443 239 536
- Manit Anand (Competitive robotics teammate/3 years) ... 0402 934 641
- Alexander Lovatt (Head Technician @ Archie Brothers) ... 0411 302 569
- Kushagra Javeri (Competitive robotics teammate) ... 0424 294 631