Gabriel Thien

Undergraduate Mechatronics Engineer @ Asiga 3D Printers
Bach. Mechatronics Engineering/Bach. Computer Science UGRD @ UNSW

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LinkedIn
GitHub Projects

SUMMARY

Talented and bright-minded student with interest and wide variety of experience in developing control, automation and embedded systems. Highly motivated and forward thinking student with a strong technical portfolio to match in product development across mech, electrical and software spaces. Actively involved in various technical projects from both industry experience and university involvements. Currently looking for future opportunities in automation development (mechatronic/software).

EDUCATION

UNSW Sydney - (2021 ~ 2025) - 4th Year
Degree: *Bach. Engineering (Mechatronics)/Bach. Science (Computer Science)*
Societies: *UNSW CREATE, UNSW CSESoc, UNSW CompClub*

EXPERIENCE

Undergraduate Mechatronics Engineer

Asiga 3D Printers - (March 2023 - Present)

- Developed prototype sensors, PCBs & electronics for mechatronics platforms
- Programmed OOP abstraction, control and device driver software for embedded MCUs (C/C++)
- Involved electronics design, testing, embedded device programming
- Created functionality, reliability & internal testing platforms with Python & ESP32

Machine Technician

Archie Brothers Alexandria - (June 2022 - October 2022)

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

VOLUNTEERING

UNSW CREATE - *CREATErLabs Projects Director, Treasurer (Sep 2022 - Present)*

- Developed mechatronic systems, designed functionality of mech, electronics, software
- Managed workflows within the club, handled accounting, technical and social leadership

UNSW CompClub - *Internals Subcommitee, Mentor (May 2022 - Present)*

- Taught programming concepts, logical thinking, various languages in workshops for high school students with other teachers & mentors
- Coordinated workflows teaching strategies, content creation & classroom leadership

PROJECTS

Automation & Mechatronics Projects @ Asiga 3D Printers

- Developed prototype hardware & software, QC & assembly tooling for production

Robotic Arm

- Self designed robot arm chassis hardware, electronics and closed loop control software
- Involved inverse kinematics, motor control software, control UI, microcontroller electronics
- Developed using ESP32 microcontrollers and self developed PCBs

Custom IoT Automation Development Platform

- Developed modular nodes housing microcontrollers, screens, motors, communication modules

Autonomous Droid Racing Challenge @ QUT

- Developed autonomous computer vision navigated racing car for inter-university competition

Competitive Robotics @ RoboCup Junior Australia

- Team lead on engineering & testing of autonomous competitive robots with various sensors and interactive mechanisms
- Involved strategizing around constraints, optimising for performance
- NSW State & Australian National Finals 2017-2019. International 2019

QUALITIES

Strong collaboration, teamwork, leadership skills

Motivated, self-managing with workload, capable of working independently

Proactive, forward thinking work ethic

Strong communication, presentation, networking skills

Outgoing, friendly, approachable personality

TECHNICAL SKILLS

C, C++, Python, Java, SQL
Object Oriented Programming
HTTP, JUnit, blackbox testing

Agile Development, Git, Postman

Computer Vision with OpenCV

Embedded software development in C, C++, Arduino, ESP32, FreeRTOS, STM32 frameworks with PlatformIO

MCU electronics experience with Arduino, ESP32, STM32 & RPI

PCB design, prototyping electronics, circuit design, soldering, testing & debugging

3D CAD, 3D printing, laser cutting, hands on workshop skills

PC building & installation, desktop support

HOBBIES & INTERESTS

Bouldering, rock climbing, hiking

Enthusiast PC building

Jigsaw puzzles, Lego, Gundam, Mahjong

3D printing, IoT, smart home electronics