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 experience in developing electro-mechanical systems and developing control software applications. Highly motivated and self-initiated student with a strong technical portfolio to match ranging from R&D, prototyping and software programming. Actively engaged in various technical projects from both industry experience and university involvements. Currently looking for future opportunities in mechatronic & software development.

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 electro-mechanical 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, electronics circuitry design, TH & SMD 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