Ronan Fraser

Mechatronics Engineer

Results-driven mechatronics engineer with 5+ years of hands-on experience leading prototyping initiatives in high-growth hardware environments. Deep expertise in R&D, automation, and product development. Proven track record of driving cross-functional projects from concept to production. Named co-inventor on multiple patents with a strong focus on technical execution, business priorities, and cross-team collaboration

EXPERIENCE

Mechatronics Engineer, Foundry Lab
May 2020 - Present

Early technical hire at a pioneering additive manufacturing startup, contributing to a 10x company valuation and headcount.

- Designed, built, and tested prototype and production binder jetting 3D printing machines. Led multiple cross-disciplinary efforts, balancing mechanical, electrical, and software inputs under tight timelines.
- Project lead on the development of critical machine modules, including the ink supply and deposition system, as well as key parts of the broader process like the build box lift & transfer system. Owned the design process end-to-end, from concept to final production.
- Patent development; named co-inventor on two Foundry Lab patents.
- Research and development; including international travel focused on advancing the companies engineering knowledge, product market fit and sales pipeline.
- Developed and tested custom PCB-based modules, including power, signal conditioning, and sensor integration. Integrated and debugged custom firmware.

Mechatronics Intern, Tait Communications
Feb 2019 - Oct 2019

Completed a 9 month, part time project to redesign the Unified Vehicle communications platform. Responsible for the enclosure design which included thermal dissipation simulations, ingress protection considerations and electrical and communications passthroughs.

R&D Intern, Argyle Performance Workwear
Summer 2018 - 2019

Completed a research and development internship (Funded by Callaghan Innovation). Focused on wearable technology for industrial workplace safety. Designed and built a prototype wearable device to track employee UV exposure as a proof of concept. Presented my research findings and recommendations at the company AGM.

Yardman, Fell Engineering
Summer 2017 - 2018

Worked as a general workshop and site hand in a structural steel fabrication workshop.
Gained experience in a variety of manufacturing processes including cropping, drilling, linishing and grinding. I also performed a variety of onsite installation tasks including rigging, set-out, interpreting drawings, and installation of structural steel elements.

Junior Technician, Marine Electrics Opua
Summer 2017 - 2018

Worked as junior technician for a marine electrician. The work covered a variety of tasks including looming, solar power system installs, alternator rebuilds and installs, navigation system installs and general electrical technician work.

EDUCATION

Bachelor of Engineering (Hons), Mechatronics Engineering
University of Canterbury | 2016 - 2020

SKILLS

- **CAD Design and PLM Software:** Proficient in advanced 3D modeling, assembly design, and lifecycle management using CAD and PLM tools (currently Autodesk Inventor and Vault, experience with Solidworks and Fusion360).
- **Design for Manufacturability (DFM):** Proficient in creating detailed 2D drawings, collaborating with manufacturers, and resolving production challenges to streamline fabrication.
- **Cross-functional Collaboration & Technical Leadership:** Excelling in fostering clear, collaborative communication within teams and across departments to drive project success.
- **Electronics and embedded software:** Broad exposure to design tools (Altium, KiCAD, C/C++), practical electrical work (Soldering, PCB rework), and debug / testing (Oscilloscope, Logic analyzer).
- **Prototype Development & Product Realization:** Transforming early-stage concepts into functional, high-fidelity prototypes, bridging design intent with manufacturable solutions through rapid iteration and hands-on execution.
- **Process, System and Automation Design:** Skilled in designing automated systems and process workflows, including P&ID, state and flow diagrams.
- **Industrial Equipment Design:** Expertise in designing robust industrial machinery, integrating PLCs and other control systems.
- **FEA and First Principles Analysis:** Skilled in FEA and applying first-principles engineering calculations to ensure design reliability.

ABOUT ME

I love being active in the outdoors; climbing, hiking and mountaineering frequently in my spare time. I am a member of the New Zealand Alpine Club and have attended a snow-craft alpine safety course which I thoroughly enjoyed. I also like to take more inexperienced climbers out and have completed a Hangdog Wellington Lead climbing course and safety test. Past achievements also include receiving my 1st Dan Black Belt in ITF style Taekwon-Do in 2016, and coming second place in the University of Canterbury WIE hackathon.

CONTACT

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References available upon request