




Daniel De Gouw


Mechatronics Engineer

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Christchurch, New Zealand 

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I am currently working in an aerospace engineering company as the lead avionics engineer. I have made significant contributions towards a [stratospheric capable aircraft](#). I have a passion for designing PCB's and writing embedded software. In my spare time I like to fly drones, fix electronics, design PCB's and work on my homelab.

1 PERSONAL PROFILE

I am highly motivated to learn new things and have a clear, logical mind with a practical approach to problem solving. I am a quick learner that strives to achieve the goals within the deadlines through good time management. I am confident working alone or with a team. I have experience with managing small teams.

I enjoy outdoor activities such as diving, jet skiing, disc golf and snowboarding. In my spare time I enjoy working on personal projects.

2 EDUCATION

- **Masters** in **Electrical** Engineering, R&D on tethered UAVs and helium balloons for remote sensing.
- Bachelor with **First Class Honours** in **Mechatronics** Engineering, with subjects:
 - ➔ Programming, Embedded Systems, Computer Vision, Electronics, Control Systems, Robotics.
- Gained **NCEA Level 3** at St Bede's in 2015.

3 LICENCES

- Part 102 licence for fixed wings.
- Obtained a **class 1 drivers licence (full)**.
- Obtained a forklift licence (F) in 2022.
- Hold a Level 1 First Aid course since 2016.
- Completed a site safe course in 2015.
- Completed a barista course in 2015.
- Obtained a wheels, tracks and rollers licence in 2015.
- Completed an open water divers licence in 2015.

4 KEY SKILLS

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|-------------------|---------------------------|----------------------------|
| • Hard worker | • Leadership & Management | • Thinking outside the box |
| • Good work ethic | • Enthusiastic | • Reliable |
| • Self-motivated | • Initiative | • Communication |
| • Time management | • Problem solver | • Logical thinker |
| • Integration | | |

5 WORK EXPERIENCE

- **Kea Aerospace** (2021-present)
 - Avionics lead, for a team of 8 people.
 - Power and Avionics engineer designing the power and solar system for multiple UAVs.
 - System architect for various Unmanned Aerial System's (UAS).
- **University of Canterbury, Rocketry Club** (2020-2021)
 - Involved in a team that launched sounding rockets up to 10km high.
 - Worked on improving the communication system and redesigned the avionics stack.
- **University of Canterbury, Scholarship Research Project** (2018/2019 summer break)
 - Research, documenting and testing of Electric Vehicle chargers and the required protection devices.

- **Justin Neill Engineering, Christchurch** (2017/2018 summer break)
 - Experience using Lathes, Mills, Drill presses, Bandsaws and Grinders.
 - Experience using MIG and Arc welders.
 - Total of 425 hours experience.
- **Completed a workshop training course at University of Canterbury** (2017).
 - Experience using lathes, mills, drill presses, band saws, welding (MIG, TIG, ARC), gas cutting.
- **Home Trends Builders, Christchurch** (2012 – 2018, summer breaks)
 - Competent with 1.5 tonne, 2 tonne and 6 tonne diggers.
 - Experienced with all carpentry hand and power tools.
 - General building, painting and concrete work.
 - Transporting logistics.
 - Fleet and plant maintenance/service.

6 PROGRAMMING LANGUAGES AND SOFTWARE

I have experience with:

- | | |
|----------------|--------------------|
| • Languages | • Software |
| ○ C | ○ SOLIDWORKS |
| ○ Arduino | ○ Altium |
| ○ VHDL | ○ MATLAB |
| ○ Python | ○ Tina |
| ○ HTML | ○ LTspice |
| ○ PHP | ○ Linux |
| ○ Ladder logic | ○ Microsoft Office |
| ○ RouterOS | |

7 PROJECTS

- Built several custom battery packs using a spot welder, and in some cases high-energy density batteries.
- Designed critical ground infrastructure for various UAS.
- Designed, built, tested and integrated the avionics, power and solar system for a UAV that achieved perpetual and stratospheric flight.
- Proficient in optimising processes, creating procedures and writing documentation.
- Designed and built a Power-Over-Tether system for a large quadcopter to enable long-duration flights.
- Designed, built, and programmed a 3D printed hovercraft from scratch, controlled over RF.
- Confident in setting up and maintaining multiple servers running inside a Proxmox hypervisor.
- Experience with networking, VLANs, IT Management and general network security.
- Programmed a drone using OpenCV to detect, follow and orientate itself with specific objects.
- Designed and programmed an earth fault detection system that uses LoRa and LTE-m.
- Programmed a UR5 collaborative robot arm to make a cup of coffee (University).
- Designed, built and programmed an autonomous robot for Robocup (University).
- Programmed a remote-controlled helicopter in C with PID control for smooth and reliable flight (University).
- Programmed an FPGA board in VHDL to implement programs, such as controlling an LCD screen (University).
- Programmed a PLC using ladder logic to implement a smart and robust PD controller (University).

8 COMMUNITY SERVICE AND SPORTING INVOLVEMENT

- Completed the Canteen 'Run For a Life' with a total of 127 Km in 5 days to raise money for cancer in 2013.
- Played soccer for Papanui Football Club and St Bede's.
- Competed in Motorcross.

9 REFERENCES

These are available upon request.