



# OLIVER STUITJE

Bachelor of electrical and electronics  
Engineering (Hons) (2021-2024)

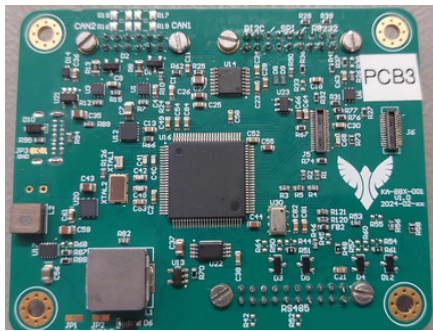
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New Zealand, Christchurch

Enthusiastic, easy to get along, works proactively and with initiative!

## PROJECTS



### AIRCRAFT BLACKBOX



### LI-ION BREAKOUT



### ENGINE SIMULATOR



## EXPERIENCE

2024

NOW

### Junior Avionics Engineer

Kea Aerospace - stratospheric capable aircraft

- Product development (schematic, PCB, 3D modelling)
  - Using **Altium Designer** and **SolidWorks**
  - **Aircraft Black Box**
    - PCB and Embedded system development with **STM32 HAL** to configure common communication protocols such as **RS485**, **RS232**, **UART**, **CAN**, **SPI** and **I2C**
  - **Li-ion Battery Charging breakout board**
  - **21700 / 18650 charger**
- Completed assigned project on time while taking on other responsibilities
  - Flight testing and preparation
  - Avionics diagnostics and troubleshooting
- Designing products to meet relevant safety standards and regulations (such as **DO-160G regulatory standard**)
- Integration and operational procedures for avionics and aircraft launch systems
  - Spearheaded weather balloon launch procedure, tracking multiple balloons during and managing data acquisition during real-time flight operations
- Teamwork
  - Excellent communication with different engineering teams
  - Working alongside talented team members to achieve stratospheric flight for our aircraft
  - **Peer to peer review and assessment**
- Proficient using **Laser Cutter** and **3D printers**
  - 3D printed product enclosures
  - Laser cut Wing cradles made from MDF material

2023

2024

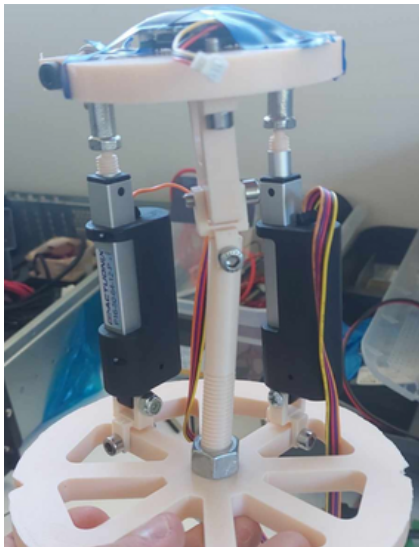
### Design Engineer Intern

Link Engine Management - performance engine ECUs

- Spearheaded product development of **Engine Simulator** top board
  - Using **Cadence OrCAD**
  - Schematic, PCB and enclosure design (with peer-to-peer review)
  - Designed complex multi-page schematics
- 3D modelling and assembly
  - Using **OnShape** and **Solidworks**
- Product Assembly and testing
  - SMD components
  - Creating wiring looms / harnesses



WIFI DATALOGGER



THRUST VECTORING



HOME WORKSTATION



RACING (NO. 18)



## PERSONAL PROJECTS (AT HOME)

### LoRaWAN Low power wireless data logger

With in-built SD card storage

- A datalogging device that I finished to completion in my spare time. It is an Ultra-Low power long range LoRaWAN communication platform.
  - 1+ year battery life using x2 AAA batteries
  - 1km+ range in urban environment (not LOS)
  - Extremely small (fits in the palm of your hand)
- Developed my skills in PCB design, schematic design using **KiCAD**
- Learned embedded system development, and getting familiar with communication protocols like **I2C**, **SPI** and **UART**.
- Bought and used many different MCUs and other components for personal projects
  - Espressif, ATmega, STM32, RPI
  - DC brush and servo motors, IR sensors, radio

### 2-axis gimbal Thrust Vector Control system

Using PID control, Arduino, imu, and 2 motors

- Designed prototype TVC system controlled by arduino. It uses an imu mounted at the base of the rocket mount plate (blue tape at the top) to track the rocket's current angle relative to the bottom plate.
- Developed my skills in
  - 3D printing
    - Mount is all 3D printed not including fasteners
  - Embedded systems
    - programmed using Arduino IDE (C++)
  - Electro-Mechanical Design
    - Integrating motors with a mechanical 3d print
  - Control systems
    - using PID control to actuate motors that rotate rocket to a user specified angle in real-time

### Complete electronics workstation at home

Oscilloscope, DC power supply, Soldering iron...

- Purchased my own equipment to learn and develop my engineering skills at home. I've used this station for the projects seen above



## REFERENCES

**Daniel De Gouw - Avionics engineering team lead**

Kea Aerospace

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**Philipp Sueltrap - Chief Technical Officer**

Kea Aerospace

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**Tom Walsh - Hardware engineering team lead**

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