

Mechatronics Engineer

Jack Ulbrich-Baker

About Me

I am a passionate Engineering student with a drive to develop and work with cutting edge technology. My interests include space exploration and development of robotics for space, as well as FPGA development and ASIC design.

I am driven and have completed many projects demonstrating these skills. Including a FPGA board develop using a Lattice ECP5 FPGA, DDR3L memory, USB C, JTAG, mezzanine board connectors for additional carrier board development and flash storage for bitstream configurations.

Experience

Electrical Engineer *Monash Nova Rover*

September 2022 - Current

Monash Nova Rover is a student team that competes in the Australian rover challenge (ARC) and the University rover challenge (URC) which 30 universities from around the world are invited to complete.

This month, Monash Nova Rover came first in the ARC, while I operated the rover for two of the tasks, achieving the highest score for both tasks.

I have been selected to represent Monash Nova Rover in the URC which is held in USA (Utah). Last year we came 2nd in the URC (a worldwide competition).

My role in Monash Nova Rover is in the Electrical sub-team which handles all the hardware for power delivery, communications and computing on the rover. In this team I have worked with Jetson Carrier board development, CAN bus, motor control, SPI, I2C and SMD soldering and PCB assembly I have also helped secure sponsorships with external companies.

Experience

Technical Sales Engineer *Sunlock*

October 2022 - Current

I assist customers with solar array system design and feasibility, including technical details on specific products and their ability to withstand structural loads. I am in charge of developing the new adjustable tilt system that is expected to sell over 100,000 units each year

Bartender *Youngs Wine Rooms*

November 2021 – November 2022

I was in charge of training new staff, creating new cocktail menu items and managing and servicing various equipment e.g. Coffee machine, beer taps, soda water machine, etc.

Sushi Chef *Sushi Bros*

February 2019 – November 2022

Sushi Bros produces fresh sushi that is delivered to schools as an alternative to a canteen lunches.

I was in charge of training new staff and the production of sushi for daily. On a typical day we would produce ~500 sushi an hour.

Education	Skills	Achievements	Contact
Monash University BEng (Hons): <i>Mechatronics engineering (artificial intelligence)</i> BCom: <i>Behavioral Economics</i>	<ul style="list-style-type: none">• Programming – MATLAB, C++, Python, C, VHDL, Verilog and R• Altium• Solidworks• Excel	<ul style="list-style-type: none">• Achieved first place while operating the rover in the 2023 ARC• Selected to attend the University rover challenge in 2023.• Avalon Airshow representative	0490 844 898 JackUBaker@gmail.com https://www.linkedin.com/in/jackulbrichbaker/