

# Matt Wulff

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## Skills

Product Design, PCB Design, VLA Control, Motor Control, Power Electronics, DFM & DFA, Python, C/C++, Claude/Curser, Jira, SolidWorks, Catia, Autodesk Inventor, AutoCAD, 3D Printing, Prototyping, Manufacturing, Sensor Design,

## Education

### McMaster University

Bachelor of Mechatronics Engineering (Co-op)  
Engineering Award Of Excellence Scholarship

*Present*  
*Ontario, Canada*

## Experience

### Tesla

BIW Manufacturing Engineering

*September 2023 – August 2024*  
*California, USA / China*

- Lead vision guided robotics at Tesla, reducing part loading time down from **50 seconds** down to **10 seconds** with **savings over \$250k** per component used, every year
- Worked with key vendors to develop a cost effective washer by means of 3 trials and countless design meetings which allowed me to **reduce the cost by \$125k** and size by over **50%**
- Led the investigation into utilizing fast, force-sensing robots to deburr castings more efficiently and cost-effectively. Collaborated across departments to procure testing equipment, manage vendors, and conduct trials
- Wrote Tesla's **DFM and DFA handbook** that all Manufacturing Engineers are now required to read

### Skygauge Robotics

Product Design

*May – September 2023*  
*Ontario, Canada*

- Spearheaded the design of a waterproof drone case capable of protecting sensitive drones from 2 meter plus impacts
- Lead the design and construction of an acoustic chamber for drone testing and QA, **reducing decibel levels by 20%**
- Accelerated drone production by optimizing fixtures, creating detailed documentation, and developing enhanced testing procedures
- Automated drone levelling using code and laser levels, achieving a **cost savings of ~ \$300 per drone** over its lifetime

### 2Ri Robotics

Engineering Technician

*July – August 2022*  
*Ontario, Canada*

- Problem solved robotic arm failures while devising and implemented **cost effective repair** solutions
- Manufactured thousands of industrial cables for Fanuc in highly efficient manor, helping them solve their supply shortages during covid
- Operated technical PM's on robots in running factories to reduce downtime and facilitate high OEE

### 3D Alive

Founder and Lead Designer

*2019 - 2021*  
*Ontario, Canada*

- Ran a 3D printing and engineering consulting business to provide clients with accelerated, low cost solutions
- Provided high quality Designs and Parts to solve deeply complicated problems

## Personal Projects

### Robotic Arm

- Designed three generations of robotic arms using off-the-shelf components, culminating in a fully autonomous, wirelessly controlled final design. Final Design Specs: 6DOF • 1 m workspace •  $\pm 1$  mm repeatability • Sub-\$500 build cost • Integrated three motor types

### Drone Club Lead

- Lead mechanical design for McMaster University drone club which included sourcing Motors, Electronics, Hardware all while balancing design constraints and key requirements

### Compound Pharmacy

- Built a functional drug vending machine that fully automates prescription-customized medications using Raspberry Pi, fingerprint sensors, stepper motors, servos, and precision scales. Improving efficiency, accuracy, and eliminating human error in medicine dispensing.