

# MATT STOKES - Vancouver, BC Canada

Passionate about **purpose-driven** deep-tech development.  
Main areas of research and exploration are problem-focused **robotics** and aerospace. [View Portfolio](#)

- +1 236-888-7616
- [m2stokes@uwaterloo.ca](mailto:m2stokes@uwaterloo.ca)
- [linkedin.com/in/url-matt-stokes](https://www.linkedin.com/in/url-matt-stokes)

## EXPERIENCE

### Rugged Robotics - Houston, TX

#### Mechanical Engineering Co-op

Co-op - 4 months (Jan. 2024 - April. 2024)

- Redesigned an **entire subsystem** of the Mk1 platform, incorporating injection molded components to reduce **cost** of the sub-system by **83%** and drastically increasing usability in the field.
- Designed and implemented multiple high-precision measurement rigs, utilizing **Solidworks**, **SW FEA** and **GD&T**. Reduced localization error rooting from measurement sensor modules by several orders of magnitude.

### Prosper Robotics - Remote

#### Mechatronics Engineer, Contractor

Contract (June 3, 2024 - Present)

- Designing custom **high-dexterity, low-DOF end-effector**. Reduces time to complete gripping operations > **30%**. Incorporates an **additional, under-actuated digit** enabling gripping operations **previously impossible without aids/custom tools**.
- Mnf. includes machined, injection molded, sand-casted parts. Assembly designed for safe operation in human environments.

### X: The Moonshot Company - Mountain View, California

#### Intern/Student

Sponsored Educational Experience - 3 months (Summer 2022)

- Selected out of a pool of international applicants to participate in **3-months** of programming provided by **GoogleX**, culminating in an internship-style program on the **X campus**.
- Worked on the **Rapid Evaluation team** engaging in **R&D** in X's in-house **fabrication facility**. Ending the process with a V1 **physical product**.

## TECHNICAL PROJECTS

- **Patch - Transdermal Hollow Body Microneedle Arrays for MDR Bacterial Infections**
  - ◆ Raised **\$5k** from 1517 and other research based funds.
  - ◆ **Technical lead** in small student research team
  - ◆ Developed a novel approach to **medicinal drug administration** utilizing **3D-printed** hollow-body **transdermal microneedle arrays** and pressurized drug packets.
  - ◆ I designed **six iterations** of the microneedle arrays using principles derived from independent research into microfluidics as well as an **interchangeable drug-packet** and **dispensing** system.
- **Transradial Prosthetic Arm**
  - ◆ Raised over **\$1k** from 1517 fund.
  - ◆ **Five years of experience** developing prosthetic arms, projects, projects include Elbow Actuated-non-powered prosthetic for children 9-13 yrs; **ECG**, Powered Prosthetic < \$250; and **11-DOF** Myo-Electric Prosthetic.

## EDUCATION

### Honors Bachelors of Mechatronics Engineering

University of Waterloo, ON

2023-2028

Relevant Courses:

- MTE 121 (**C++**, **RobotC**, **ROS2**), MTE100 (**Solidworks**, Autocad, Drafting, **Microsoft Office**)

**Alumni - prev. Innovate, Accelerate The Knowledge Society**

## SKILLS

### Technical Software

- CAD: Fusion 360, **Solidworks**, Autocad
- Programming: **C++**, Typescript, **Javascript** (Next.js, React.js), vanilla CSS, **ROS2**, CMake
- Version Control: **git** + Github

### Hardware and Techniques

- 3D Printing (DLP, SLA, FDM)
- Soldering
- Technical Freehand Drafting

## Current Projects

- **Serial-Parallelized Bipedal Research Platform**
  - ◆ 14 DOF Biped Platform based on disney research paper.
  - ◆ Designed fully in Solidworks with FEA.
  - ◆ Currently designing custom actuators with Cycloidal drives.
- **UWATERLOO HACKERFAB**
  - ◆ Building a semiconductor fab facility at Waterloo University.
  - ◆ Lithography and photoresist based, single layer integrated circuit fabrication.

## OTHER LINKS

- [Portfolio Website](#)
- [Hobby 3D Printing Account](#)
- [Twitter](#)

