CORE SKILLS

1. **Material characterization:** SEM, UV-Vis, EDX, Optical Microscopy, and knowledge of XRD techniques
2. **Nanofabrication:** wet chemistry, spin coating, thermal evaporation,soft lithography, and knowledge of sputtering, PECVD
3. **R&D:** project management,literature searches, iterative product development/experiment design, technical presentations
4. **Design and Communication:** SolidWorks, MATLAB, Python, Microsoft Office Suite, Confluence

RELEVANT EXPERIENCE

**Biosensor Engineer, FluidAI and Microfluidics Lab, Waterloo, Ontario** May 2023 – August 2023

* Led R&D of biosensor used in diagnosis of anastomotic leaks (**patent application begun**); performed fundamental literature searches, developed fabrication SOPs, optimized sensor for high sensitivity/low analyte detection limit
* Extensively documented research creating timelines/projected outcomes minimizing resource use/development time
* Characterized coating materials using **SEM, EDX, and UV-Vis** as well as optical microscopy

**Research Assistant, Printable Electronic Materials Lab (PEML), Waterloo, Ontario** Jan. 2023 - Current

* Characterized polymer donors for organic photovoltaics (OPV) devices using **EQE and OFET tests**
* Constructed novel OPV devices; **spin coating, thermal evaporation**, **glovebox/fume hood** experience
* Automated SCLC and PCE calculations using Python increasing efficiency of analysis of devices by **40%**
* Optimized film thickness and annealing temperatures maximizing device PCE to conduct accurate comparisons between different active layer polymer blends

**The Zero Experience Workshop** Sep. 2022 – Nov. 2022

* Analyzed major problems like climate change and space debris and explored process of building a start-up with 3 different design groups to gain business experience

KEY PROJECTS

**Troubleshooting Device Fabrication Process (PEML)** Dec. 2022 – Feb. 2023

* Established/executed fabrication troubleshooting procedures identifying problems/solutions within 1 week of testing
* Optimized EQE and solar simulator settings/measurement procedure achieving identical results between devices

**Team 4421 Competition Robot (FIRST FRC)** Jan. 2022 - Feb. 2022

* + Led team to **5th place in Canada** by designing robot SolidWorks model within first week of 6-week total build season allowing teammates double the time for assembly/troubleshooting
	+ Managed 10+ people, coordinated multiple design projects/sub-teams, and optimized productivity to complete robot in 6-week time frame

**Finance Tool (Personal Project)** Sep. 2022 - Current

* + Automated stock search and criteria optimization using **Google Sheets, Python, and Apps Script/JavaScript** algorithms
	+ **Increased data collection efficiency by 50%** by developing bots to parse websites and automate data collection/analysis using Selenium library for Python
	+ Performed data/graph analysis and optimized algorithms; **cut run time by 25%**

**Deoiling Hydro-cyclone (SHAD McGill)** Jul. 2021

* Designed CAD model of deoiling hydro-cyclone for use in sewer and drainage systems to preserve Canada’s freshwater resources; done in 2-week timeframe and presented project to industry experts and professors at McGill University

AWARDS

1. **Schulich Leader Scholarship**, University of Calgary, awarded to students with outstanding achievements in academics/STEM
2. **Dean’s List Awardee,** University of Waterloo, awarded to the students with the highest GPA’s in their program
3. **Winner of the FIRST FRC Canadian Pacific Regional**, FIRST Robotics, awarded to the team that places 1st at the Canadian Pacific Regional Competition

EDUCATION AND PROFFESIONAL DEVELOPMENT

1. Candidate for Bachelor of Applied Science, Nanotechnology Engineering, University of Waterloo, Waterloo, Ontario
2. MATLAB training, University of Waterloo, Waterloo, Ontario
3. Alberta Secondary School Diploma, Clear Water Academy, Calgary, Alberta
4. Hack the North, University of Waterloo, Waterloo, Ontario
5. SHAD McGill, McGill University, Montreal, Quebec
6. The Zero Experience, University of Waterloo, Waterloo, Ontario
7. C++ Introductory Training Course, LinkedIn Learning
8. Python Training Course, LinkedIn Learning
9. ARCT in Piano Performance, Royal Conservatory of Music