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Highlights of Qualifications

- Strong research and development skills in mechanical and biomedical engineering which resulted in several awards during my MASc degree including a prestigious NSERC CGS scholarship.
- A Certified SolidWorks Associate with creative engineering design skills which have been used to start an engineering design firm and led to a top 25% finish in an international collegiate design competition.
- A proven self-starter with a passion for engineering who has participated in TOeP and ECHO entrepreneurship programs at the University of Toronto, as well as founded a health-tech startup.

Industry Experience

Co-Founder & Chief Research Officer – Cradle Technology Design May 2017 – Present
Charlottetown, Prince Edward Island, Canada

- **Developed an engineering consultancy** and acquired clients whose projects bring in approximately **$50,000 in annual revenue.**
- **Lead research efforts** and developed a health-tech smartphone app which is now available on Android and iOS.

Student Engineer – MDS Coating Technologies May – September 2016
Slemon Park, Prince Edward Island, Canada

- **Developed of a novel system** for **quality control** of outgoing parts which was integrated into production.
- **Designed and implemented** of a method for **life-cycle prediction** and **monitoring** of fixtures used in production, which resulted in reduced machine downtime and product loss due to fixture failure.
- **Designed tooling and fixtures** for production floor using **CAD tools** (Autodesk Inventor).

Student Product Design Engineer – Advanced Manufacturing Lab May 2015 – April 2016
School of Sustainable Design Engineering, UPEI

- Used advanced manufacturing tools such as **3D printers, laser cutters, and electronics equipment** to produce creative solutions for the general public.
- **Designed and manufactured parts** using CAD software (**Solidworks)** and lab equipment.
- **Performed maintenance and repair** of advanced manufacturing equipment.

Education

Master of Applied Science September 2017 – Present
University of Toronto
Department of Mechanical and Industrial Engineering
Thesis topic: Microfluidic strategies for bioprinting of protein-based arterial constructs

Bachelor of Science in **Sustainable Design Engineering** September 2013 – May 2017
Mechatronics Focus Area
GPA: 4.0/4.3
University of Prince Edward Island

Academic Projects

Microfluidic strategies for bioprinting of protein-based arterial constructs September 2017 – Present
MASc Thesis
University of Toronto

- Fabrication of **microfluidic printheads** for biological payloads using **soft lithography, hot embossing, and silicon deep reactive ion etching.**
- **Carried out mechanical testing and micro-scale characterization** of printed biological structures.
- **Developed a novel method for manipulation of micron-scale biomaterials** for 3D assembly into biologically relevant geometries.

Novel Method for Aircraft Fuel Controller Test Setup September 2016 – April 2017
University of Prince Edward Island

- Developed a device to **reduce setup time** of aircraft fuel controller onto test apparatus, thereby **increasing throughput and generating additional revenue.**
- Project won **People's Choice Award at 2017 UPEI Design Expo.**

Extracurriculars

Entrepreneurship for Cardiovascular Health Opportunities September 2018 – Present
Ted Rogers Centre for Heart Research

- **Developed a business model** for commercializing graduate research during an **intensive 12 week workshop**, culminating in a final **pitch competition.**

Training Program in Organ-on-a-Chip Engineering and Entrepreneurship September 2017 – Present
NSERC/University of Toronto

- Prepared a **business case** based on my graduate research and **pitched at TOeP seminar**

UPEI Baja SAE Team February 2015 – June 2017
University of Prince Edward Island

- **Team President**, **Co-Founder**, and **Chassis Team Lead. Managed** steering and braking **sub-teams.**
- **Performed kinematic analysis** and **designed** vehicle **suspension systems,** resulting in a 50-position jump in rock crawl finish year-over-year**.**

Achievements & Awards

- **NSERC Canada Graduate Scholarship – Master's Program**
- **Barbara and Frank Milligan Graduate Fellowship -** Awarded to MIE graduate students whose thesis research is in the field of biomedical engineering.
- **Department of Mechanical and Industrial Engineering Entrance Award –** Top applicant to the MASc program in the Dept. of Mechanical and Industrial Engineering at the University of Toronto.
- **Engineers PEI Graduating Student Award –** Highest academic standing in SSDE graduating class
- **Clifford A. Shaw Engineering Award –** Highest academic standing in SSDE graduating class
- **Canadian Society for Mechanical Engineering Gold Medal –** Outstanding academic achievement in Mechanical Engineering
- **UPEI Administration & Finance Award in Engineering –** Combining academic performance and professionalism
- **Top Technical Report at 2016 UPEI Engineering Expo –** Technical writing award
- **Top Student in 3rd Year of UPEI SSDE –** Top student overall in 3rd year Engineering
- **Engineers PEI Design Team Prize 2015 –** Best Overall Design at UPEI Engineering Expo
- **Norman F. Stewart Scholarship –** Ranked 2nd for academics after 2nd year Engineering
- **Engineers PEI Prize (Second Place) –** Ranked 2nd for academics after 1st year Engineering