PREET SHAH

University of Waterloo | Mechanical Engineering

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SUMMARY OF QUALIFICATIONS

- Enhanced skills in **SolidWorks modelling** and **drawing, AutoCAD, Python,** and **RobotStudio** through **internship** as part of the **innovation team** at **Linamar**
- Designed **front** and **rear wing mounts** using **SolidWorks** for **UWaterloo Formula Electric** design team, enhancing applicable 3D designing skills
- **Programmed** event driven embedded system using **C++** and **RobotC** with Lego NXT technology to analyze automated forklift systems
- **Modelled** and **3D printed** multiple designs created through **SolidWorks** and **AutoCAD** to improve assembly skills

WORK EXPERIENCE

Mechanical Engineering CO-OP
Jan'18 - Apr'18

Linamar Corporation - Innovation HUB

- **Created 3D models** of raw and finished part **dunnage** using **SolidWorks**
- **Designed guide assembly** that would correctly position dunnage so it can be **accurately traced by robot**
- Performed **Finite Element Analysis** on dunnage to **visualize bending stress** when being picked up by robot
- Assisted in **designing an end of arm tool**, to be placed on an **ABB IRB 2600 robot**, which can perform **multiple tasks** such as lift different sized dunnage
- **Strengthened** ability in **Python** and **RobotStudio** by **creating** and **testing** various **programs** for **beta-level ABB robots**
- **Revised model drawings** to ensure correct **dimensioning**, **datum positions**, and **GD&T** labelling

Project Engineering Intern
May'17 - Aug'17

Elite Machining Ltd.

- **Procured** precise tools and parts required by the machinists
- Generated programs using **TRUMPF Vector Marking Machine** to **laser mark** products based on specifications found on **customer drawings**
- Trained in **Quality Control** methods and in **creating programs** for the **Coordinate Measuring Machine**

Aerodynamics Team Member
Oct'17 - Present

UWaterloo Formula Electric Car Team

- Conceptualized **mounting design** for the **front and rear wings** on **SolidWorks**
- Utilized **Star CCM+** to **simulate air flow** and determine areas of **high and low pressure** on various components of the car to better understand the **downforce generated**
- **Conducted tensile tests** to determine **carbon fibre configuration** with the highest strength to weight ratio

ADDITIONAL EXPERIENCE

Entrepreneur - *Junior Achievement*
Oct'14 - Apr'16

- President of two companies where I gained first hand **leadership experience**
- Wrote business plans and assisted in generating financial reports

Volunteer - *Youth Central and Public Library*
Sep'13 - May'16

- Helped remove invasive plants from provincial parks
- Assisted in running various events for charities and children's amusement
- Participated in the Computer Buddy and ESL Teen Talk programs within library

SKILLS

Programs:
AutoCAD - SolidWorks - Catia - Inventor
Star CCM+ - C++ - Python - HTML5 - CSS3
JavaScript - JQuery - BootStrap - RobotC
RobotStudio - MS EXCEL

Machining skills:
Lathes - Electric Saws - Drill Press - CMM

PERSONAL PROJECTS

Formula 1 Car Model
Jan'18 - Present

- **Created** multiple **technical drawings** of different **parts** that make up the **car**
- Used the **surfacing**, **lofting**, and other features within **SolidWorks** to **design** and **model** the **wheels**, **rims**, **front wing**, and **body** of the car
- **Conducted CFD simulations** using **SolidWorks** to **analyze air flow** around front wing

Web Developer
Feb'17 - Present

- Self-taught in **HTML5, CSS, JavaScript, jQuery, and Bootstrap**
- Utilized Bootstrap and HTML5 to create a **responsive personal webpage**

Mechatronic System Designer
Jan'17 - May'17

- Collaborated with four members to **program a Lego NXT robot** to investigate **efficient automation of forklifts in warehouses**
- **Devised mechanical chassis design** of the robot
- Designed and **manufactured prototype functional parts using SolidWorks**
- Assisted in **compiling and debugging** code in **C++ and RobotC**

EDUCATION

University of Waterloo
Bachelors of Applied Science
Mechanical Engineering
2nd Year, Class of 2021
Sept'16 - Present