

# Parth Patel

## Contact

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[parthjp.com](http://parthjp.com)

## Achievements

### Academic

- 5 x President's List
- 1 x Dean's List

### National Design League - Ontario Tech Designathon

- 1<sup>st</sup> place in our challenge
- Top 4 overall

### FIRST Robotics (FRC)

- 2 x Regional Winner
- 1 x Provincial Semi-Finalist
- 1 x World Quarter-finalist

### Quadracycle Design - 3<sup>rd</sup> Year Class Competition

- 1<sup>st</sup> place

## Certifications

### SolidWorks

CSWA – Mechanical Design

## Skills

- SolidWorks
- NX Siemens
- Java
- C++
- Matlab
- Arduino
- 3D Printing
- CNC

## Education

**University of Waterloo** | Master of Engineering - Mechanical Engineering  
Waterloo, ON | December 2021 (Expected)

**Ontario Tech University** | Bachelor of Engineering - Mechanical Engineering  
Oshawa, ON | April 2020

- Mechatronics Specialization; **3.9 GPA**

## Work Experience | [parthjp.com/#experience](http://parthjp.com/#experience)

**Ontario Power Generation** | Design Engineer, Intern  
Pickering, ON | May 2018 to August 2019

- Independently initiated and developed an **Excel Macro** which automatically found and informed managers about their incomplete work, **90% faster** than the older method
- Designed a custom mounting bracket and radiation shield using **3D CAD** to allow installation of a pressure transmitter onto existing equipment
- Performed walk-downs and prepared **engineering drawings and analysis** to replace components without impacting existing equipment or operating conditions

**Ontario Tech University** | 3D Printer Design Assistant  
Oshawa, ON | September 2017 to April 2018

- Saved Durham College **hundreds of dollars** in equipment cost by designing a PCA pump which could be **3D printed** to replace real PCA pumps in nursing labs
- **Reduced print failure rate by 10%** by reviewing all parts and assemblies in NX, SolidWorks, and Cura for common points of failure before printing and offered effective solutions

## Extracurricular

**Woburn Robotics** | Mechanical Design and Prototype Mentor  
Scarborough, ON | July 2015 to Present

- Used **SolidWorks** to design parts and assemblies with appropriate tolerance for easy manufacturing and assembly; **Design for Manufacturing** and **Design for Assembly**
- **Manufactured parts and built prototypes** to test concepts and validate the final design

## Projects | [parthjp.com/#projects](http://parthjp.com/#projects)

**Snow/Ice Melting System (Capstone)** | Control System Lead

- Built a 2ft x 2ft prototype of a snow and ice melting system powered using a solar panel and lithium-ion battery which could run autonomously or manually through an app
- Wrote the Arduino code to control a NodeMCU microcontroller and relays which operated the pump and heater based on temperature and snow sensor feedback
- Built CAD models using **NX**, **created drafts** for piping layout, and performed **FEA analysis**

**Autonomous Maze Solving Robot** | Team Lead

- Designed a robot using **NX** to navigate a two-floor maze using the shortest possible path, maneuver around obstacles, and locate a Lego Miner at the end
- Focused on **Design for Manufacturing** and **Design for Assembly** to 3D print and build multiple prototypes quickly and finalize design based on test plan results

**Arduino – Smart Home** | Team Lead

- Built a model home and wrote the Arduino code which calculated the total electricity usage and its respective cost to display on an LCD screen