

# Bhavishey Thapar

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## EDUCATION

### UNIVERSITY OF TORONTO

AEROSPACE ENGINEERING  
(ROBOTICS)  
2023 | MEng.

### RYERSON UNIVERSITY

COMPUTER ENGINEERING (AI)  
2023 | MEng.

### UNIVERSITY OF WATERLOO

MECHATRONICS ENGINEERING  
2019 | BSc.

## SKILLS

- C/C++
- Python
- SQL
- Matlab/Simulink
- Fusion 360
- Linux
- JIRA
- Raspberry Pi
- Autodesk Eagle
- Microcontrollers

## COURSEWORK

### GRADUATE

State Estimation  
Development Of UAVs  
Machine Learning  
Neural Networks  
Robot Motion Planning

### UNDERGRADUATE

Autonomous Vehicles  
Image Processing  
Multivariable Control Systems  
Digital Control Applications  
Automatic Control Systems  
Actuators and Power Electronics  
Electromechanical Machine Design  
MEMS

## AWARDS

General Motors Design Seed Fund  
Magna New Mobility Award

## INTERESTS

Tennis  
Volleyball  
Reading

## RELEVANT EXPERIENCE

### GEOTAB | AUTOMOTIVE SUPPORT ENGINEER

July 2019 - June 2021 | Oakville, ON

- Leverage Big Data, API's and third party data via Google Big Query (SQL) and Python Notebooks to create dashboards and queries for support engineering/sales teams.
- Responsible for troubleshooting issues related to Engine Data using knowledge of standard CAN protocols such as OBDII and J1939.

### PARAGON SYSTEMS | MECHATRONICS ENGINEERING INTERN

Sept 2017 - Dec 2017 | Concord, ON

- Part of an award-winning team for successfully building and delivering automated end of line testing machines for Brose in Michigan.
- Fabricated and installed structural, pneumatic and electric systems on power seat assembly testers for Daimler AG, Ford and Volvo.

### HONDA MANUFACTURING | MECHATRONICS ENGINEERING INTERN

Jan 2017 - April 2017 | Alliston, ON

- Tested and inspected manufacturing processes to improve product quality.

## ADDITIONAL EXPERIENCE

### UNIVERSITY OF TORONTO AEROSPACE TEAM | AVIONICS TEAM

Sept 2021 - Present | Toronto, ON

- Working towards developing a system for a fixed wing UAV to detect landing zones using object detection algorithms running on a stereo camera with the goal of successfully landing the UAV on the landing zone.

### ROBOT ARM CONTROLLER

January 2019 - April 2019 | Waterloo, ON

- Designed a feedback controller in MATLAB for a non-linear two link robot arm MIMO system using a Kalman filter as the state estimator.
- Implemented the controller using the LQG optimal control technique.

### SCALED AUTONOMOUS CITY

Sept 2018 - March 2019 | Waterloo, ON

- Built a 1/18th scaled city for autonomous drive testing using AutoCAD.
- Designed PCB in Eagle as breakout board for the scaled autonomous vehicle.
- Used computer vision techniques and OpenCV to create an algorithm for lane detection in Python.

### WATERLOO ALTERNATE FUELS TEAM | ELECTRICAL TEAM

Sept 2018 - January 2019 | Waterloo, ON

- Conducted research for motor selection to re-engineer a 2018 Chevrolet Blazer as part of the EcoCAR 4 competition to reduce vehicle emissions.
- Designed motor mounts in Siemens NX to integrate the motor into the car.

### AUTONOMOUS UNDERWATER VEHICLE

January 2018 - March 2018 | Waterloo, ON

- Designed and built an underwater ROV capable of guiding through underwater obstacles and were placed 2nd in the competition.
- Used a Raspberry Pi single board computer with an ARM processor to interface with sensors and electronic speed controllers for the BLDC motors.