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 | BASc.

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.