Bhavishey Thapar

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EDUCATION

RYERSON UNIVERSITY
Artificial Intelligence
2021-2023 | MEng.

UNIVERSITY OF WATERLOO
Mechatronics Engineering
Graduated 2019 | BASc.

SKILLS

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

COURSEWORK

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

ONLINE
C++ Nanodegree
Python Programming

AWARDS

General Motors Design Seed Fund
Magna New Mobility Award

INTERESTS

Tennis
Volleyball
Table Tennis
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

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.

DIGITAL THEREMIN
May 2018 - August 2018 | Waterloo, ON

- Created a music instrument controlled without physical contact from the player using Atmega328, IR distance sensor, a reflectance sensor written in C.
- Interfaced with sensors using communications protocols such as UART, I2C.

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.