ABHI PATEL

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EDUCATION

Ontario Tech University Sept. 2017 to Current
BEng Mechatronics Engineering 2022

SUMMARY

Engineering student interested in developing skills to excel in the field of computer vision and robotics. Possesses a wide range of technical skills with strong fundamentals, complemented by effective communication and teamwork.

SKILLS

PROGRAMMING LANGUAGES: Python, C++, Java, MATLAB, HCL, Shell Scripting
OS: Linux, Windows
LIBRARIES/TOOLS: ROS, Keras, Flask, Numpy, Scipy, Matplotlib, Pandas, GIT, Airflow, Docker, Terraform, Vagrant
ELECTRICAL AND MECHANICAL: CAD Modelling (Solidworks), FEA Simulations, Rapid Prototyping, 3D Printing, Soldering and Wiring, Engineering Project Management (MS Project)
COURSEWORK: Object Oriented Programming, Statics, Solid Mechanics, Dynamics, Calculus I and II, Differential Equations, Concurrent Engineering And Design, Circuit Analysis, Introductory Electronics, Numerical Methods, Statistics and Probability
COURSEWORK (OTHER): Machine Learning (Coursera), Object Oriented Data Structures in C++ (Coursera)

EMPLOYMENT

TELUS
Scarborough
Data Engineering Co-op
May 2019 to Dec. 2019

- Followed DataOps practices and applied IAC on Google Cloud Platform to Telus Insights
- Experience with Apache Airflow, Vagrant, Terraform, Docker
- Wrote scripts for data wrangling
- Followed sophisticated git workflows and participated in code reviews
- Experience in working on a large codebase

CAROBOT LEARNING AND RESEARCH ORGANIZATION
Markham
Hardware Developer
May 2018 to Aug. 2018

Applied the engineering design process to develop an Arduino powered robot car for students to assemble during class
Taught the CR101, CR102, and CR201 Robotics and Programming classes

PROJECTS

SELF DRIVING RC CAR
June 2018 to Aug. 2018

•Modified an RC car by attaching a raspberry pi to stream camera and ultrasonic sensor data to a computer over a TCP connection
• Solved a multi-label classification problem via the implementation of a neural network in Keras to output steering direction from the image inputs
• Interfaced an Arduino with the RC controller for control

MACHINE LEARNING COLLECTION
A repository of (un)supervised classification algorithms written from scratch

AWARDS

UofTHacks VI · 3RD PLACE — Jan. 2019

UofTHacks VI · BEST IOT HACK USING QUALCOMM DEVICE — Jan. 2019

Unifor · UNIFOR LOCAL SCHOLARSHIP — Sept. 2017

ACTIVITIES

UOIT MARS ROVER CLUB · Junior Programming Executive

- Designed and developed ROS nodes for sensor integration, navigation, and teleoperation
- Created a URDF model of the rover, simulating using Gazebo and RVIZ
- Tested system consisting of stereo cameras, and LIDAR on the Jetson TK1 embedded development board
- Designed ROS coding challenge for new club members

UOFTHACKS VI - HACKATHON
Collaborated to develop PotholePal, a proof-of-concept Arduino robot that gathers pothole data, and transmits geotags to an IPhone app using an MQTT server.

UOTTAHACKS - HACKATHON
Collaborated to create an augmented reality game using OpenCV.