ABHI PATEL

AbhiP202@gmail.com
abhipatel.netlify.app
647-741-8735
/in/abhi-patel-0/
B33Boy

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 excellent communication and teamwork.

Skills

PROGRAMMING LANGUAGES
Python
C++
Java
MATLAB
HCL
Shell Scripting

OS
Linux
Windows

LIBRARIES/TOOLS
ROS
Keras, Tensorflow, PyTorch
Flask
Numpy, Scipy, Matplotlib, Pandas
Airflow
Docker
Terraform, Vagrant

ELECTRICAL AND MECHANICAL
CAD Modelling (Solidworks, NX)
3D Printing
Engineering Project Management (MS Project)

COURSEWORK
Object Oriented Programming
Data Structures
Microprocessors and Digital Systems
Calculus I and II, Differential Equations
Circuit Analysis, Introductory Electronics, Electronic Circuit Design
Control Systems
Kinematics and Dynamics of Machines
Numerical Methods
Sensors and Instrumentation
Actuators and Power Electronics

COURSEWORK (OTHER)
Machine Learning (Coursera)
Deep Learning Specialization (Coursera)
Object Oriented Data Structures in C++ (Coursera)

Education

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

Employment

Telus — Remote
Cloud Development Contractor — Jan. 2020 to Sept. 2020
- Wrote Terraform code to create GCP infrastructure (e.g. Stackdriver alerts and metrics, Bigquery datasets and tables, Cloud Storage buckets, PubSub topics, publishers, and subscribers) for the Telus Insights project
- Hosted knowledge transfer sessions on Terraform
- Assisting in API, and validation testing vendor code for ETL pipelines

Telus — Scarborough, Ontario
Data Engineering Co-op — May 2019 to Dec. 2019
- Followed IAC practices on Google Cloud Platform (GCP) for the Telus Insights project
- Gained experience with Apache Airflow data ingestion pipelines, Vagrant for virtual machine configuration, Terraform to define GCP infrastructure, and Docker for containerization based workflows
- Wrote python scripts to wrangle data from internal site
- Followed sophisticated git workflows and participated in code reviews

CAROBOT Learning and Research Organization — Markham, Ontario
Hardware Developer — May 2018 to Aug. 2018
- Applied the engineering design process to develop an Arduino car for students to assemble during class
- Taught the CR101, CR102, and CR201 Robotics and Programming classes

Projects

Meme Vault — Aug. 2020 to Sept. 2020
An application that stores and retrieves memes by indexing them based on user provided descriptions and optical character recognition.

Data-Driven Algorithms Collection — Jan. 2020 to Current
A collection of algorithms written from scratch. Includes matrix factorizations, linear and logistic regression, K-means clustering, PCA, Eigenface.

Bus Trip Planner — July 2020 to July 2020
Data exploration project where bus routes from the City of Brampton's Open Data portal were extracted, visualized, and path finding algorithms such as breadth-first and depth-first search were applied.

Pothole Pal — Jan. 2019 to Jan. 2019
A proof of concept (POC) demonstrated by an ultrasonic sensor on an Arduino powered car to simulate the ability for a car or autonomous vehicle to drive over a surface and detect potholes in the real world.

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

Awards

UofTHacks VI · 3rd Place — Jan. 2019

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.