Devesh Datwani

Worcester, MA 01609 | (978) 809-5026 | dbdatwani@wpi.edu
https://github.com/deveshdatwani | http://www.linkedin.com/in/deveshdatwani | http://www.deveshdatwani.com/

OBJECTIVE

Seeking full time autonomy intern position for the summer of 2022

EDUCATION

MS in Robotics Engineering, Worcester Polytechnic Institute, Worcester, MA, USA, May ‘23
BE in Mechanical Engineering, Mumbai University, Mumbai, India May ‘18

SKILLSET

Languages: Python, C, C++, HTML-CSS
Hardware Stack: Arduino Uno, Raspberry Pi 3+
Libraries/Frameworks/Tools: GIT, Sklearn, Tensorflow, OpenCV, Numpy, Pandas, MATLAB, Django, Flask, Linux
Certifications: Introduction to Self-Driving Cars, Applied Machine Learning, Robotics: Aerial Robotics, Python Programming

PROJECTS

Human Pose Estimation With CNN March 2022
- Implemented the DeepPose model from scratch to train on FLIC, MPII human pose datasets for pose estimation
- Created a tensorflow pipeline to fetch, augment and load custom dataset to be fed into an AlexNet for regression
- Increased detection accuracy by reducing MSE by xx % by cascading two AlexNets as per the DeepPose publication

Traffic Sign Detection Using Mask R-CNN Network November 2021
- Implemented adaptations to the Mask R-CNN network to enhance its performance in detecting traffic signs
- Augmented training dataset of 10,000+ traffic sign images to create motion blur, rain and condensation effects
- Enhanced mAP values of the model from 0.05 to 0.25 by training the model on the augmented dataset

Trajectory Tracking for Autonomous Vehicles November 2021
- Implemented PID and linearized feedback controllers for an autonomous vehicle based on the bicycle model
- Simulated the controllers in Google’s CARLA environment on custom trajectories

Plasma Actuators for Flow Induction in Hollow Pipes, **(patent pending)** 2017 - 2018
- Experimented with plasma actuators for flow induction inside hollow pipes without the use of moving parts
- Designed and fabricated plasma actuators that induced volumetric air flow of 9000 liters/hr

Drone/RC Plane Design, Fabrication and Flying, 2011 - 2020
- Designed, fabricated and flight-tested fixed-wing RC planes and quad copters
- Built fixed wing aircraft powered by electronic and nitro-methane power plants
- Gained hands on experience with aerodynamics and electronics involved in aerial vehicle design

EXPERIENCE

Graduate Student Assistant, Surface Metrology Lab, WPI, Worcester, January 2022 - Present
- Carrying out multiscale analysis on cloud point data obtained from 3D microscopic imaging techniques
- Building software functionalities that conducts regression on multiscale 3D data to understand and predict surface erosion

Team Member, Space Goat, WPI, Worcester, September 2021 - January 2022
- Represented Worcester Polytechnic Institute at the NASA Extreme Terrain Mobility Challenge 2022
- Integrated 6 degrees of freedom gyro, accelerometer, inertial measurement unit and ultrasonic sensor board with the robot
- Contributed in the firmware code to sense acceleration and obstacles in robot motion path for accurate and safe traversement