Shaipranesh S

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EDUCATION

Birla Institute of Tech. and Science (BITS) Pilani
BS in Computer Science and Msc in chemistry
Aug 2020-Present | Pilani, India
GPA: 8.52 / 10.0

The Indian Public School, CBSE
Grad. May 2020 | Erode, India
12th: 95.4%

COURSEWORK

Math
Linear algebra
Probability and statistics
Calculus
Differential equations

Coursera
Deeplearning specialization- Andrew Ng

SKILLS

Proficient:
C++ • C • Python • Pytorch • Tensorflow• ROS• OpenCV• Git
Familiar:
JAX • R• Gazebo

PROJECTS

Zero-DCE implemenatation | Spring 2022
Robotics researcher, Team Robocon, BITS Pilani
Implemented a deep learning model for uniform enlightening of darkened images. Was used in the team's drone project for traversal in dark areas and better object detection.

- Read and implemented a Pytorch version of the CNN model from the Zero-DCE paper.
- Tested the model against 2 data-sets and was able to achieve good results in less training time than the paper.

PRM + A* robot | Spring 2022
Robotics researcher, Team Robocon, BITS Pilani
A gazebo simulation of a turtlebot3 using Probabilistic Road Maps to sample out nodes from the map to move and uses A* algorithm to find the shortest path from the start to goal. Then programmed and tune PID to help the robot steer.

- Used ROS to program the path-planning algorithm and created a custom Gazebo environment to test the system out.

Image processing robot | Fall 2021
Robotics researcher, CRISS Robotics, BITS Pilani
Programmed a custom line follower robot which only has a RGB-camera for sensor and to follow a coloured line. Also, programmed the bot to scan for AR tags and follow them.

- Used ROS and OpenCV to program the robot and implemented a PID controller for smooth travel of the robot.

EXPERIENCE

Ferminet improvement and implementation(Google Summer Of Code) | MAY 2022 - Present
Guide: Dr. Peter Eastman, Stanford University and Tony Davis, Deepchem

- Was selected for Google Summer Of Code for this project under the organisation Open Chemistry, which aims to develop libraries for computational chemistry.
- Working towards implementing and improving the Deep-learning model Ferminet, a neural network which aims to find the electronic configuration(positions) of a molecule system as accurately as possible. Has material science and drug discovery applications.
- More on the project can be found here

Classification of plastics using Multi-spectral images using Neural Networks |Jun 2022 - Present
Guides: Dr. Madan Kumar Lakshmanan, CSIR-CEERI, Chennai

- Investingating Radial Basis Neural network, SVM and Discriminant analysis techniques to sort plastics into their specific type from hyper-spectral images obtained by fusing camera images with Near Infrared spectra.

POSITIONS OF RESPONSIBILITY

Mentor, Peer Mentorship Program | Aug 2021 - Present
Selected based on academic record, ethics and peer review to guide 7 freshmen mentees in academic and co-curricular pursuits.