MANAN MADAN

Projects

- Learning Perspectives:

> Implemented K-Means, K-Modes clustering on real-world categorical data
> Implemented NLP Techniques, such as chunking, chinking, etc.

- VISTA:

> Implemented Web-Scraping using requests,urllib, and beautifulSoup
> Also implemented several graph algorithms to extract meaning information from structured data

- OpenPi Bot:

> Coded a differential drive mobile robot in Gazebo
> Implemented ROS Navigation Stack

- Kinodynamic Path Planning

> Coded a Path Planner Inspired from the A * Star Algorithm that takes into account robot's kinetic constraints
> Simulated it in OpenCV

- Lane Detection:

> Lane Detection using Canny Edge Detection, masking and contour detection from the footage of the DASH-CAM of the car

Work Experience

Research Intern

NSIT,Delhi

April 2020 - July 2022

- Implement several clustering algorithms for clustering real-world categorical data
- Studied and implemented different types of encoding and decoding techniques to process data
- Worked on several algorithms and tools for natural language processing and web-scraping such as chunking, chinking, regex parser , etc.

Software Lead

Team ARES Robotics, Delhi

August 2018 - Present

- Implemented full ROS navigation stack on simulation as well as on hardware platform
- Implemented and Tested AMCL (Adaptive Monte Carlo Localisation) using ROS
- Implemented the Extended Kalman Filter for fusing the output of the various sensor in order to accurately localize the robot
- Coded an autonomous differential drive robot with various sensors such as Depth Camera, IMU, GPS, from scratch in Gazebo.

Education

Netaji Subash Institute of Technology, Delhi
University of Delhi
2018-2022

BE Instrumentation and Control
CGPA - 7.52 (Upto 3rd sem)

Contact

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Skills

Languages: C,C++,Python
Robotics: ROS, GazeboSensor Fusion, Kalman Filters, OpenCV, Perception (RANSAC, PointCloud Filtering, Object Detection)
Path Planning
Frameworks: NLTK, Spacy, Pandas, Matplotlib, Networkx, BeautifulSoup, TextBlob, Regex

Certifications

C++ and Data Structures
> By Coding Ninjas
Data Structures
> By UCSD
Algorithms and Data Structures
> By UCSD
Algorithms on Graph
> By UCSD
Arduino Programming
> By Udemy

Achievements and Awards

> Came in 10th place in Indian Rover Championship
> Top 1% in JEE Advanced 2018