Sharmitha Ganesan

sharmithaganesan08@gmail.com | www.linkedin.com/in/sg5899 | https://github.com/sharmithag | 240.726.3931

WORK EXPERIENCE

RESEARCH ASSISTANT (RA) Apr 2022*

Maryland Robotics Center, University of Maryland College Park, MD

Working as an RA under Dr. Derek Paley (Director of Maryland Robotic Center) on local perception for autonomous navigation of E-Scooters inside the campus area.

HARDWARE DESIGN INTERN Jan – Apr 2020

Fossilshale Embedded Technologies Pvt. Ltd., Bangalore, India

Design of UAV controller board and comparing UAV state estimation principles for indoor operation.

PROJECT EXPERIENCE

Computer Vision/Perception

- Semantic segmentation of input from ZED2i camera to perform local path planning in real time for e-scooter navigation | Point Cloud Processing of segmented frames to feed in to the movebase planner |NVIDIA Jetson Orin and Nano Developer Kit platforms are used | Link
- Software Development of Human detector and tracker using YOLOv5s deep learning model using C++ |Link
- Design of an autonomous mobile bot and performed localization using encoders and IMU sensors |Link
- Controlling a differential drive robot using hand gestures involving perception and serial communication | Link
- Classical Implementation of Feature Matching, Perspective Geometry and Structure From Motion | Link

Machine Learning/Deep Learning

- Data collected from a car like robot (mobile robot) with LiDAR driven in open and corridor environments is trained and tested to predict future action commands | Link
- Implementation of Neural Network using logistic regression to distinguish between two classes of objects*
- Development of custom convolutional neural network model for different pathway samples like roads, trails, sidewalks, grass etc.,*

Robot Modeling & Planning

- Modeling of Rover like model using SOLIDWORKS and simulating it in ROS Gazebo | Link
- Path planning algorithms like A* and RRT* are applied to the problem of an autonomous navigation of a wheelchair in an airport environment | Link

EXPERTISE

Programming Languages: C++, PYTHON, MATLAB

Tools: ROS 1 & 2, GAZEBO, SOLIDWORKS, TensorFlow, Keras, OpenCV,Open3D,ROSBAG,ROSPY,PCL_ROS, RViz

EDUCATION

Master of Engineering in Robotics, University of Maryland,College Park 2021 – 2023*

COURSEWORK: Software Development for Robotics, Machine Learning, Planning and Perception for autonomous robots, Robot Modeling. GPA : 3.7/4

Bachelor of Technology in ECE, Pondicherry Engineering College, India 2016 – 2020

NOTABLE PROJECTS: UV_wearable , sign_language_to_voice-model , anti_glare_goggles GPA : 9.2/10