Srikanth Malla

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Contact Information:

906 Oakes Street, East Palo Alto, CA 94303   ✉ mallasrikanth004@gmail.com 📞+1(774)253-9046

Experience:

Honda Research Institute

Research Engineer   (Jan'18-Present)

Worked on 3D scene understanding (3D Mapping using LiDAR sensor, sensor fusion with GPS-IMU sensors, 3D detection, joint 2D-3D multi object tracking, action recognition). Currently working on future trajectory forecasting for self driving application.

Carnegie Mellon University

Visiting Scholar, Machine Learning Department   Katerina Fragkiadaki (May'17-Aug'17)

Worked on developing Ego-motion estimation for UAVs with low cost sensors (Monocular Camera, IMU) using Deep Learning Techniques. IMU sensor is used to over come the problem of less or no visual correspondances during fast motions.

Research Associate, Field Robotics Center   Sebastian Scherer (Sept15-April16)

For the application of Industrial inspection using UAVs, I worked on system integration, controls and real time coverage planner to optimize flight time.

Education:

Worcester Polytechnic Institute   Jan 2017 - Sept 2018

Master of Science in Robotics Engineering   GPA: 4.0/4.0

Vellore Institute of Technology, Vellore, India   July 2012 - May 2016

Bachelor of Technology in Electronics and Instrumentation   GPA: 8.79/10

Udacity, Self Driving Car NanoDegree   July 2017 - Jan 2018

Deep Learning, Computer Vision and Sensor Fusion

Relevant Proficiency:

Software and Programming: Python, C++, PyTorch, TensorFlow, OpenCV, ROS, PCL, MATLAB, C, OpenRave, Keras, Multisim, Solid Works, MoveIt, OpenAI, Gazebo, MuJoCo

Hardware: ATMega 328, MSP 430, 8051/52, Odroid U3, Udoo, Raspberry Pi, Pixhawk

Robots: Baxter, UAVs (custom built, DJI), Kuka Youbot, Turtle Bot

Projects: http://srikanthmalla.com/projects.html

Learning from Demonstration (LfD) for Manipulation   https://goo.gl/c5RGUE

Hidden Markov Model is trained by extracting features from configuration space for Baxter robot to perform manipulation tasks. Several demonstrations are collected using VICON motion capture and VR Headset. Bi-RRT* is implemented to tackle dynamic obstacles.

Inventory Management Robot   https://goo.gl/mmbx2V

Developed a mobile robot and equipped it with custom made 3DOF robotic arm. KINECT sensor was used for RGBD mapping and localization using RTABMap.

Inertial Odometry using LSTM

Sudden rotations couldn't be captured by visual odometry (because of no correspondences in images), an extra sensor Inertial Measurement Unit (IMU) is used to capture that motion, this gives advantage of predicting better ego motion and could be fused with visual odometry.

Sensor Fusion for Autonomous Cars

Implemented Extended and Unscented Kalman Filter techniques for fusing Lidar and Radar Data on the Udacity Simulator for Autonomous Cars.

Publications: https://bit.ly/2CIbnGB

Srikanth Malla, Behzad Dariush and Chiho Choi. "TITAN: Future Forecast using Action Priors" **CVPR 2020 [Oral]**

Isht Dwivedi, **Srikanth Malla**, Behzad Dariush, Chiho Choi, "SSP: Single Shot Future Trajectory Prediction" **IROS 2020**

Abhishek Patil, **Srikanth Malla**, Haiming Gang, Yi-Ting Chen, "The H3D Dataset for Full-Surround 3D Multi-Object Detection and Tracking in Crowded Urban Scenes", **ICRA 2019**

Chiho Choi, Abhishek Patil, and **Srikanth Malla** DROGON: A Causal Reasoning Framework for Future Trajectory Forecast ECCV 2020 (submitted)

Vaegae Naveen Kumar, Venkata Lakshmi Narayana Komanapalli, and **Srikanth Malla**. "Development of an intelligent pressure measuring technique for bellows using radial basis function neural network." **Sensors and Actuators A: Physical 238 (2016): 240-248.**

REVIEWER: IEEE-Transactions on Intelligent Vehicles (2020), IROS (2020)