Srikanth Malla

in   /srikanthmalla

Contact Information:
37 William street Apt 2C, Worcester MA, 01609   ✉ smalla@wpi.edu ☎ +1(774)253-9046

Experience:
Carnegie Mellon University
Visiting Scholar, Machine Learning Department   Katerina Fragkiadaki (May'17-Aug'17)
I 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 for fast motions (when using only monocular camera).
Research Associate, Field Robotics Center   Sebastian Scherer (Sept15-April16)
Industrial Inspection (examining cracks in industrial boilers) takes lot of time and money. UAVs can cut down both of those factors effectively. For this application, I worked on system integration, controls and real time coverage planner to optimize flight time.

Education:
Worcester Polytechnic Institute   Jan 2017 - (Expected Dec 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 - Present
Deep Learning, Computer Vision and Sensor Fusion

Relevant Proficiency:
Software and Programming: C, C++, Python, MATLAB, ROS, OpenCV, PCL, OpenRave, TensorFlow, 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
For Baxter robot to perform manipulation tasks, Hidden Markov Model is trained by extracting features from configuration space. Several demonstrations are collected using VICON motion capture and VR Headset. Bi-RRT* is implemented to tackle dynamic obstacles.
Gesture Controlled Unmanned Aerial Vehicle (UAV)
An Interface between ARDrone (UAV) and Sensors (Kinect, LEAP) is developed with ROS. Artificial Neural Network is trained to classify different gestures.
LEAP sensor: https://goo.gl/jI2MuZ   KINECT sensor: https://goo.gl/zEODg8
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.
Person Following UAV   https://goo.gl/5SUABr
Built a quadrotor and automated it to follow GPS coordinates using onboard navigation system. Developed an Android Application to send the GPS co-ordinates to the Quadrotor.
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.

Publication:
Vaegae Naveen,Venkata Lakshmi Narayana K, Srikanth Malla Development of an Intelligent Pressure Measuring Technique for Bellows using Radial Basis Function Neural Network Sensors and Actuators, A. Physical http://goo.gl/eC5X3z
Harjatin Singh Baweja, Tanvir Parhar, Srikanth Malla Gesture Control Interface Using Machine Learning Algorithms. International Journal of Advanced Research in Computer Science and Software Engineering (IJARCSSE),Volume. 5, Issue. 09 (2015) ISSN: 2277-128X. http://goo.gl/BxX6ZC

Awards and Achievements:
MHRD Scholarship, Central Govt of India   **Special Achiever Award**, VIT