

Ganesh IYER

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Education

May 2020	Carnegie Mellon University, School of Computer Science Masters of Science in Robotics Systems Development	Pittsburgh, PA
August 2016	Mumbai University Bachelors of Engineering in Electronics and Telecommunication Engineering Aggregate CGPA - (8.11/10) Selected Courses : Signal, Image & Video Processing, Fuzzy Logic & Neural Networks, Computer Networks	Mumbai, India

Work Experience



July 2017 June 2018	INTERNATIONAL INSTITUTE OF INFORMATION AND TECHNOLOGY, Graduate Research Assistant, Hyderabad <ul style="list-style-type: none">Developed self-supervised deep-learning models for visual odometry and extrinsic calibration.Contributed to the traffic-sign detection platform for the Mahindra RISE Self-driving Car challenge, improving overall detection accuracy by 20-30%.
August 2016 June 2017	SWAAYATT ROBOTS, Research Intern and Developer, Bhopal, India <ul style="list-style-type: none">Designed a fast stereo depth map computation pipeline using SemiGlobal Matching and Siamese Convolutional Networks, which was applied to dense reconstruction for mapping.Created a facial pose tracking system from RGBD point clouds for Advanced Driver Assistance Systems.Improved vehicular-data annotation time by a factor of 10 by implementing an annotation package for tight segmentation and tracking using multi-scale template matching and particle filters.Integrated onboard vehicle sensors and actuators with the perception and motion planning modules.

Publications

GEOMETRIC CONSISTENCY FOR SELF-SUPERVISED END-TO-END VISUAL ODOMETRY, CVPR-W 2018

 Paper  Project Page Ganesh Iyer*, Krishna Murthy*, Gunshi Gupta, K. Madhava Krishna, Liam Paull

CALIBNET : GEOMETRICALLY SUPERVISED EXTRINSIC CALIBRATION USING 3D SPATIAL TRANSFORMER NETWORKS, IROS 2018

 Paper (preprint)  Project Page Ganesh Iyer, Karnik Ram R., Krishna Murthy, K. Madhava Krishna

Academic Projects

TELEPRESENCE ROBOT WITH STEREOSCOPIC VISION

Final Year Project, Mumbai University

 PROJECT LINK

DECEMBER 2015

- Conceptualized and engineered an inexpensive telepresence platform, capable of streaming 3D immersive live video using Raspberry Pi over a wireless network.
- Stabilized camera gimbal movement using complimentary filter for jitter-free stream.

GENERATIVE ADVERSARIAL NETWORK

Self-Initiated Project

 PROJECT LINK

NOVEMBER 2017

- Implemented a Deep Convolutional Generative Adversarial Network on the LFW-Labeled Faces in the Wild Dataset to generate natural looking face images.

GRID TRAVERSAL ROBOTS

eYantra Robotics Competition, IIT Bombay

 PROJECT LINK

DECEMBER 2013

- Demonstrated BFS, Dijkstras', and Order-Picking algorithms on small robotic platforms, simulating toy-warehouse situations.
- Led a team of 4 and achieved the National Level Finalist (5th in India) position for the Warehouse Management Theme.

Skills

Programming Languages	Python, C/C++, HTML/CSS (familiar)
Libraries	Numpy, Tensorflow, OpenCV, Theano, Keras, Point Cloud Library, Caffe/PyTorch (familiar)
Frameworks	Robot Operating System (ROS), LightWeight Communication and Marshalling (LCM), g2o : General Graph Optimization(familiar), Ceres Solver (familiar), MATLAB (familiar)