Ganesh **Iyer**

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https ://epiception.github.io

Education

May 2020 **Carnegie Mellon University, School of Computer Science** Pittsburgh, PA
Masters of Science in Robotics Systems Development
Selected Courses : Computer Vision, Manipulation, Estimation & Control, Robot Mobility, Systems Engineering

August 2016 **Mumbai University** Mumbai, India
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

Work Experience

July 2017 – June 2018 **International Institute of Information and Technology, Graduate Research Assistant, Hyderabad**
- 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**
- 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 over a wireless network. Achieved a stable and jitter-free stream using complimentary filters for stabilized camera gimbal movements.

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, PyTorch/Caffe (familiar)
Frameworks	MATLAB, Robot Operating System (ROS), LightWeight Communication and Marshalling (LCM), g2o : General Graph Optimization(familiar), Ceres Solver (familiar)