Parv K. Parkhiya

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EDUCATION

Carnegie Mellon University – School of Computer Science Pittsburgh, PA
Master of Science, Robotics System Development May 2020

International Institute of Information Technology (IIIT) Hyderabad, India
Bachelor of Technology (Honours), Electronics and Communication | ***GPA: 9.91/10*** May 2018

RESEARCH EXPERIENCE

Robotics Research Center, International Institute of Information Technology Hyderabad, India
Honours Student under Dr K Madhava Krishna June 2016 - May 2018

- Conceptualized and implemented (C++) monocular Object-oriented Simultaneous Localization and Mapping **(SLAM)** using deep Convolutional Neural Network (CNN) and pose graph optimization
- Demonstrated improvement over existing state of the art SLAM methods in challenging scenarios
- [Publication]: **(ICRA 2018)** – "Constructing Category-Specific Models for Monocular Object SLAM"

PROJECTS

IIIT, Hyderabad

Doubly Convolutional Neural Network (DCNN) January 2017 - May 2017

- Implemented DCNN (TensorFlow) where parameter sharing across filters decreased total parameters by factor of 4.7 resulting in better generalization of CNN for supervised learning
- Demonstrated better accuracy compare to traditional CNN with same number of parameters

Lane Detection Module for Autonomous Car August 2016 - December 2016

- Engineered computationally efficient lane detection module (C++, OpenCV) using RANSAC based particle filter and image processing resulting in better planning and control of autonomous car

Augmented Reality (AR) for 3D Room Decor August 2016 - December 2016

- Developed (Matlab) custom marker and its robust detection, pose estimation followed by Gaussian blending of rendered image with input image to create realistic augmented images

SKILLS

Programming Languages: C, C++, Verilog, VHDL, Python
Hardware: Microcontroller (Arduino, AVR, VEX), FPGA (ZedBoard), Quadcopter (Parrot Bebop, AR)
Software: Optimizers (Ceres-Solver, GTSAM, GCO), Linux, ROS, LIBSVM, OpenCV, Gazebo, Unity, TensorFlow, Matlab, Cadence, Xilinx Vivado

SELECTED COURSEWORK

Computer Vision	Statistical Methods in AI	Linear Control System
Mobile Robotics	Learning for Manipulation (in-progress)	Engineering Systems

AWARDS AND ACTIVITIES

Institute Gold Medal IIIT Hyderabad, India | for graduating B. Tech class of 2018
Coordinator of Literary Club IIIT Hyderabad, India | June 2016 - May 2017