

Kajal Damji Gada

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EDUCATION

University of Maryland, A. James Clark School of Engineering

Master of Engineering, Robotics

GPA: 3.74/4.0

College Park, MD

May, 2017

NMIMS University, Mukesh Patel School of Technology Management & Engineering

Bachelor of Technology, Electronics & Telecommunication

GPA: 3.28/4.0

Mumbai, India

Master of Business Administration, Technology Management

May, 2015

WORK EXPERIENCE

Qualcomm

Engineer

San Diego, CA

January 2018 – present

- Developed applications as software module in C++ and implemented on aerial and ground robots using ROS.
- Built software module for Qualcomm chip 8x96 using docker for cross-compilation.
- Debugged hardware interfaces and real-time protocols between software modules for smooth application runs.

Reality AI

AI Engineer (June 2017 - December 2017) | Intern (January 2017 - May 2017)

Columbia, MD

January 2017 – December 2017

- Applied machine learning techniques for object detection and classification in images and videos using MATLAB.
- Developed a function to extract various objects from images to create a database of templates.
- Machine Learning techniques - normalized cross-correlation, SVM and neural network.

Autonomy, Robotics, and Cognition Laboratory - University of Maryland

Graduate Assistant

College Park, MD

January 2016 – May 2016

- Experimentally evaluated path planning algorithms - RRT and RRT* with Open Motion Planning Library (OMPL).
- Tested the algorithm to move Baxter's arm with collision avoidance using motion planning framework MoveIt on ROS.

PROJECT WORK: MACHINE LEARNING

Teaching a computer to play Tic-Tac-Toe with Q-learning and Neural Network

December 2016

- Programmed to learn the winning strategy of Tic-Tac-Toe by playing the game with itself on a reward-based methodology.
- Compared the result with win-loss based method of neural network and found both to be effective.

Learning a function based on input-output point using CMAC

September 2016

- Implemented an Cerebellar Model Arithmetic Computer (CMAC) method to approximate a function using MATLAB.
- Designed based on input and output data points over various iterations to drive error to zero.

PROJECT WORK: VISION AND PERCEPTION

Texture Synthesis by non-parametric sampling

May 2016

- Created a large image of a given texture by placing close match pixel neighbours around the sample over multiple iterations.
- Tested using multiple texture samples for varying window size and threshold values.

Panorama image by image stitching using SIFT features

March 2016

- Identified the matching features (SIFT) between images to obtain the affine transform that aligns the adjacent images.
- Evaluated the best affine transform using RANSAC and used it to stitch the images for creating a panorama.
- Enhanced the final image to a single intensity using normalization and filled up the empty spaces using bilinear interpolation.

PROJECT WORK: PATH PLANNING AND NAVIGATION

Localizing a robot using particle filter approach with Python

April 2016

- Implemented particle filter on the laser scan data for estimating the robot's position and orientation in the map.
- Reduced the sensing noise by comparing the actual vs expected laser scan data, computed using robot's odometer reading.

Map building from laser scan data and visualized in Rviz

April 2016

- Implemented an occupancy grid-based approach to compute the map of the environment for a mobile robot.
- Identified the occupied (or obstacles) cells on the map by combining the laser scan data with the robot's odometry.
- Used RViz in Robot Operating System (ROS) to visualize the mobile robot and the mapped environment.

SKILLS

- Programming experience in C, C++, Python and MATLAB.
- Competent in OpenCV, ROS, Gazebo, Rviz and V-rep.