

ANIKET GUPTA

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Available: May – December 2022

EDUCATION

Northeastern University, Boston, MA **Expected May 2023**
Candidate for a Master of Science in Robotics Cumulative GPA: 4.0 / 4.0
Relevant Coursework: Deep Learning, Machine Learning, Computer Vision, Robot Sensing and Navigation

Delhi Technological University (DTU), Delhi, India **July 2021**
Bachelors of Technology in Electrical Engineering GPA: 8.4 / 10.0

SKILLS

Languages: Python, C++, MATLAB **Computer Vision:** OpenCV, PyTorch, TensorFlow, Open3D
Robotics Tools: ROS, Gazebo **Tools:** Git, Linux, Latex, AWS

WORK EXPERIENCE

NORTHEASTERN UNIVERSITY, Boston, MA **October 2021 - Present**
Graduate Research Assistant, Field Robotics Lab

- Estimated IMU bias for localization using Dead Reckoning in case of camera failure, achieving a buffer time of above 30 seconds for Infrared visual inertial odometry.
- Explored existing Visual odometry libraries including Kimera and VINSMono to integrate the IMU bias estimation algorithm.

UNMANNED AERIAL SYSTEMS TEAM, DTU, Delhi, India **June 2019 - June 2021**
Project Manager

- Coordinated and managed a multidisciplinary team of 30+ members for multiple applied projects.
- Developed and Demonstrated long-range (50 km) swarming capability to the Indian Air Force on 25 UAVs and won a project funding of INR 35 crores (\$4.7 million).
- Implemented LeGO-LOAM SLAM on a UGV with factor graphs for improved loop closure.
- Developed a 3D monocular visual odometry system using deep learning for online depth estimation.

FLAIRE UNMANNED SYSTEMS, Delhi, India **September 2019 - October 2020**
Software Development Intern

- Trained 2 scalable CNN models in TensorFlow for Human detection and Tracking in both day and night time.
- Integrated the model in main software pipeline for "Follow Me" mode and unit-tested the codebase.

INDRAPRASTHA INSTITUTE OF INFORMATION TECHNOLOGY (IIITD), Delhi, India **May 2019 - July 2019**
Research Intern, Cyber-Physical Systems Lab

- Developed an AI agent to solve "Traveling Salesman" problem by utilizing traditional Value iteration methods.
- Designed a Deep Q-Learning-based controller and solved cooperative path planning problem for multiple agents.
- Assembled and tested complete architecture on a system of 3 agents leveraging Multi-master ROS.

PROJECTS

PERSONAL WEBSITE: aniketgupta01.wordpress.com (For additional information and projects)

GENERATING DENSE DEPTH MAPS USING STEREO AND LIDAR DATA **September 2021 - December 2021**

- Generates high quality and accurate dense depth maps using sparse LIDAR data and stereo images.
- Implemented a multi-branched model with shared features between different branches for efficient learning in PyTorch achieving an RMSE score of 1558 on KITTI benchmark.

DEPTH ESTIMATION USING MONOCULAR CAMERA **December 2020 - February 2021**

- Implemented a deep learning pipeline to predict depth maps using RGB images from a monocular camera and benchmarked it on the NYU depth V2 dataset with an RMSE score of 0.644.

VIEW-INVARIANT HUMAN ACTIVITY RECOGNITION **January 2021 - April 2021**

- Built a dual (motion and skeletal data) branched model for view invariant human activity classification and attained 89.6% recognition accuracy on the NUCLA dataset.

DEEP REINFORCEMENT LEARNING BASED MULTI-AGENT COLLABORATION **April 2020 - July 2020**

- Created a simulation testbed using Matplotlib and Gym on the Linux platform and trained a multi-agent system on TD3 and PPO algorithms.