Aditya Nandakumar Dhawale

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EDUCATION

The Robotics Institute, Carnegie Mellon University
Masters of Science in Robotics (MSR)
Expected May, 2020 QPA: 4.11

Indian Institute of Technology, Guwahati
Bachelor of Technology, (B.Tech.), Mechanical Engineering
June 2016 QPA: 7.61

PUBLICATIONS

A. Dhawale and N. Michael, "Efficient Parametric Multi-Fidelity Surface Mapping," in *Robotics: Science and Systems*, July 2020 [Submitted]

A. Spitzer, X. Yang, J. Yao, **A. Dhawale**, K. Goel, M. Dabhi, M. Collins, C. Boirum, and N. Michael, "Fast and Agile Vision-Based Flight with Teleoperation and Collision Avoidance on a Multirotor," in *International Symposium on Experimental Robotics*. Springer, November 2018

A. Dhawale, X. Yang, and N. Michael, "Reactive Collision Avoidance using Real-Time Local Gaussian Mixture Model Maps," in *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, October 2018

A. Dhawale, K. Shaurya Shankar, and N. Michael, "Fast Monte-Carlo Localization on Aerial Vehicles Using Approximate Continuous Belief Representations," in *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2018

EXPERIENCE

The Robotics Institute, Carnegie Mellon University **Aug 16 - Present**
Research Associate; Graduate Student Researcher **Pittsburgh, PA**

- Developed a novel SLAM technique using Gaussian distributions as a succinct and accurate map representation
- The proposed map representation provides $\approx$ 100 times better compression than traditional mapping techniques, thus enabling real world distributed mapping
- Developed a particle filter based localization framework that runs at 10 Hz on Size Weight and Power (SWaP) constrained systems, using lightweight RGB-D sensors
- Constructed a low cost mapping framework for collision avoidance on aerial robots to enable $>$ 10 m/s flights through cluttered environments

The Robotics Institute, Carnegie Mellon University **May 16 - Aug 16**
Robotics Institute Summer Scholar **Pittsburgh, PA**

- Implemented and tested a calibration framework for computing relative transforms between multiple depth and color sensors

Indian Institute of Technology **July 15 - May 16**
Undergraduate Thesis **Guwahati, India**

- Built and developed an Autonomous Underwater Vehicle with autonomous navigation, stereo mapping, and PD control

EXPERTISE

Languages : C/C++, Python, CUDA, MATLAB, ROS, LaTeX
Concepts : SLAM, Computer Vision, Machine Learning