

The Field Robotics Center

Seminar Series

Thursday, 9th October

GHC 2109 10:30 – 11:30am



Pratik Agarwal

University of Freiburg, Germany

Metric Global Localization using Street View

Abstract: Accurate global localization is one of the central challenges in mobile robotics. Most of the existing methods use GPS or model it as a pose estimation problem in a previously computed map. In this talk, I will present a novel approach to metric localization that neither requires the construction of a consistent map, nor a previous visit of the environment. The central idea is to leverage geotagged imagery on Google

Street View as an accurate source of global positioning. Only a monocular camera with odometric estimates are used to make this approach as general as possible. I will present the accuracy of the method when using a robotic platform in a parking lot with visual fiducials as ground truth, and results of the approach applied to urban scenarios with Google's Tango mobile device.

Speaker Bio: Pratik Agarwal received his B.E. degree in Computer Science and Engineering from Manipal Institute of Technology, India in 2010, and M.S.E. in Computer Science and Engineering from University of Michigan, Ann Arbor in 2012, where he also worked as a research assistant at the APRIL robotics laboratory. Currently, he is a Doctoral Research Assistant at the Autonomous Intelligent Systems Lab, University of Freiburg, Germany. His research interests include robust robot mapping and localization, sparse linear algebra and multi-object multi-sensor tracking.



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