

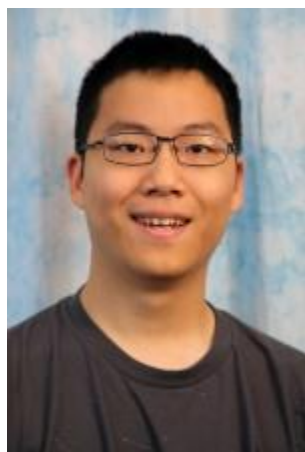
The Field Robotics Center

Seminar Series

Wednesday, 27th July

GHC 2109 3:00 – 4:00pm

Lunch will be served



Daniel Lu

M.S. Student

Robotics Institute

Vision-Enhanced Lidar Odometry and Mapping

Abstract: As self driving car technology advances, it is important for mobile robots and autonomous vehicles to navigate accurately. Vision-Enhanced Lidar Odometry and Mapping (VELO) is a new algorithm for simultaneous localization and mapping using a set of cameras and a lidar. By tightly coupling sparse visual odometry and lidar scan matching, VELO is able to achieve reduced drift error compared to using either one or the other method. Moreover, the algorithm is capable of functioning when either the lidar or the camera is blinded. Incremental Smoothing and Mapping is used to refine the pose-graph, further improving accuracy. Experimental results obtained using the publicly available KITTI data set reveal that VELO achieves around 1% translation error with respect to distance travelled, indicating it has comparable performance to state-of-the-art vision- and lidar-based SLAM methods.

Speaker Bio: Daniel Lu is an MS student at the Robotics Institute at Carnegie Mellon University advised by Prof. George Kantor. Daniel received his Bachelor's of Applied Science in Engineering Physics from the University of British Columbia in 2014. His research currently focuses on perception and pose estimation using a combination of cameras and lidar for autonomous terrestrial vehicles.



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