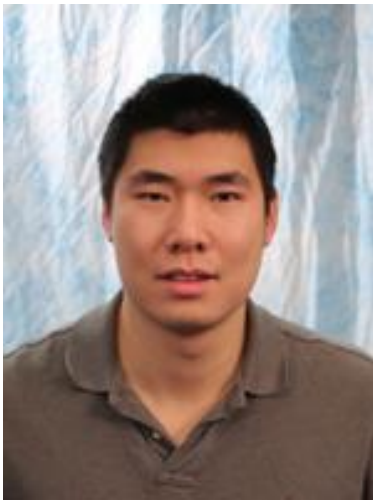


The Field Robotics Center

Seminar Series

Wednesday, 24th January

NSH 1507 12:00 – 1:00pm



Lunch will be served

Ji Zhang

Postdoctoral Fellow
Robotics Institute
Chief Scientist of Kaarta

From Robust Real-time SLAM to Safe Collision Avoidance

Abstract: State estimation plays a critical role in a robotic system. The problem is to know where the robot is and how it is oriented. This is very often a building block in the navigation system, which modules in charge of higher level tasks are relied on. Challenges are to carry out state estimation in 6-DOF, in real-time at high frequencies, with high precision, robust to aggressive motion and environmental changes. The talk will start with state estimation leveraging range, vision, and inertial sensing. Then, it will discuss more recent work regarding autonomous navigation of lightweight UAVs in cluttered environments, avoiding obstacles at high speeds. The talk will finish with the latest results and take aways.

Speaker Bio: Ji Zhang is postdoctoral fellow at the Robotics Institute of CMU. He received his PhD degree in Feb. 2017. His PhD research focused on ego-motion estimation and mapping. His methods are ranked #1 and #2 on the odometry leaderboard of the internationally well-known KITTI Vision Benchmark, and won the Microsoft Indoor Localization Competition in 2016 and 2017. His recent work inclined toward collision avoidance of aerial vehicles. Ji Zhang is founder and Chief Scientist of Kaarta, a CMU spin-off commercializing 3D lidar mapping and 3D modeling technologies as the outcome of his research work.



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