

# Sparse Planning Graphs for Information Driven Exploration

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## 1 MATLAB Simulation

We have implemented a MATLAB simulation (Figure 1) of the mutual information exploration strategy outlined in the midterm report.



Figure 1: MATLAB Simulation

## 2 Hardware Test Platform

We decided to use a ground robot instead of a quadrotor as our test platform because it has simpler dynamics and is safer to operate. A ground robot (Figure 2) has been equipped with a laser scanner to facilitate data collection. It can be controlled by joystick as well as by an onboard controller. We are fusing laser scans with IMU measurements to obtain state estimates to feed into the onboard controller. Additionally, the ground robot's planner will be adapted from the quadrotor planner.

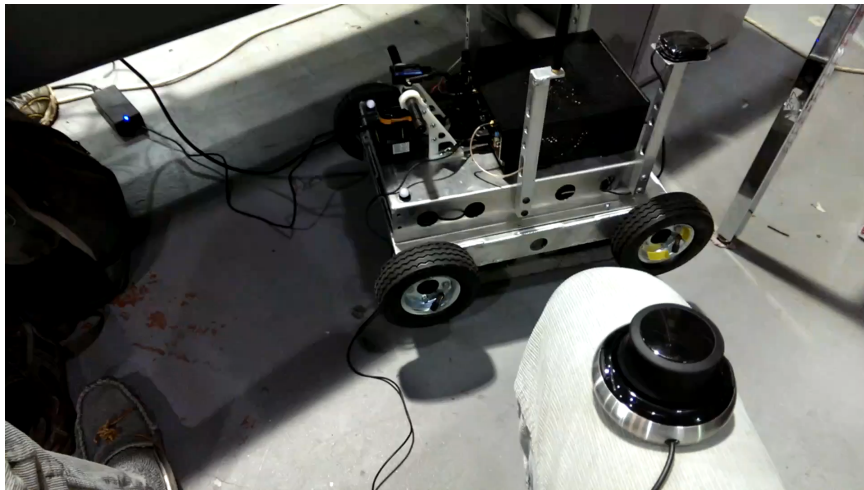


Figure 2: Ground robot