

Research Colloquium
Department of Computer Science

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will speak on:

*Heuristic-based Search in Unknown Indoor Environments
Using Cooperative Robotic Teams*

11:00 a.m. on Tuesday, February 28 in Houser 108

Implementation of intelligent, real-world tasks on teams of small mobile robots is a popular focus of research as computational power trends upward and sensor cost and power requirements trend downward. However, robot navigation in the real world can present challenges due to unavailable maps or ambiguous sensor data. If we could design algorithms in which one or more robots could completely cover an unknown area in an expeditious manner, we would support the implementation of some high level search tasks such as finding people in fires or explosives in malls.

This talk discusses a paradigm shift that moves beyond SLAM fundamentals to utilize sensor-based navigation with the goal of decreasing task duration while increasing coverage. We present empirical studies on necessary navigation strategies as well as the combination of vision and odometry to plan efficient trajectories. Along with design and implementation of search behaviors, we present a novel research platform called the eROSI.
