

Opportunistic Sensing for Object and Activity Recognition from Multi-Modal, Multi-Platform Data

Place
lab logo
here if
desired

Objective:

- Research on active utilization of multi-modality sensors to achieve optimized performance for autonomous sensing by identifying and exploiting dynamic opportunities.
- Develop theory and principles of opportunistic sensing that integrates feature selection, signal collection, and data exploitation to provide practical methodologies, algorithms and design tools with performance robust to uncertainty and adaptive to variations in dynamic operating conditions

Approach:

- Development of a fundamental theory for the determination of minimum data representation: sparsity and low-dimensional manifold
- Development of methods for object recognition with compressive sensing that couples the minimum data representation with objective characterization
- Methods for collaborative sensing using stationary and mobile platform carrying disparate sensors.
- Experimental Validation

Technical Success:

- Kickoff will be held on Oct 27 at Rice University.

