Appearance-Based Models of Locations for Mobile Robots

Gregory Dudek
Center for Intelligent Machines
School of Computer Science
McGill University
jdukek@cim.mcgill.ca

This talk will discuss the synergy of computer vision and mobile robotics. Key issues for such robots are estimating their current location in both qualitative and quantitative terms. In addition, estimating the 3D layout of the environment is critical for both collision avoidance and the completion of many tasks. This talk will discuss these problems using evidence accumulation as a robot moves, using raw measurements obtained from appearance-based computer vision. The inferences from appearance will be made using statistical learning.