

The Field Robotics Center

Seminar Series

Wednesday, 12 Dec

NSH 1507 Noon-1pm
Pizza will be served



Mark Desnoyer

PhD Candidate

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Visual Utility to Direct Processing and Speed Up Vision Algorithms

Abstract: One of the fundamental problems in computer vision is that most computer vision algorithms are too computationally expensive to use in real-time systems. Though some speed up approaches have been found for specific algorithms (e.g. SURF vs. SIFT), there is a more general class of approaches that keep coming up in the literature and in practice. We'll call these approaches visual utility approaches. In a visual utility approach, we first estimate where the useful visual information will be in an image and then direct our higher level system to process those regions that are most likely to be useful. This talk will examine the general structure of visual utility approaches, identify some characteristics of problems that make them more like to benefit from visual utility and provide some guidelines for applying visual utility for a given task. We will also present a detailed analysis of visual utility systems for pedestrian detection problems, whose results generalize to object detection systems in general.

Speaker Bio: Mark Desnoyer is a Ph.D student in the FRC advised by David Wettergreen. He holds a B.Eng in Electrical Engineering from Cornell University and a Masters in Robotics from Carnegie Mellon. He has also worked as a software engineer for Google and CBS Interactive. His research interests include computer vision, machine learning, sensing technologies and field robotics.



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