

TIME-VARYING-GEOMETRY OBJECT SURVEILLANCE USING A MULTI-CAMERA ACTIVE-VISION SYSTEM

Matthew Mackay, Robert G. Fenton, and Beno Benhabib

Department of Mechanical and Industrial Engineering,
University of Toronto, 5 King's College Road
Toronto, ON, Canada, M5S 3G1
EMAIL: mackay@mie.utoronto.ca

Abstract

This paper presents a novel, agent-based sensing-system reconfiguration methodology for the recognition of time-varying-geometry targets (objects or subjects). A multi-camera active-vision system is used to improve form-recognition performance by selecting near-optimal viewpoints along a prediction time horizon. The proposed method seeks to maximize the target visibility in a cluttered, dynamic environment. Simulated experiments clearly show a tangible potential performance gain.