

KEYNOTE TALK
Tuesday, December 1, 2009
8:30AM – 9:30 AM / Ballroom 4-5

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Looking at People in Action: Detection, movement recognition and event modeling and recognition

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Abstract

Analyzing videos of human activity has numerous applications in visual surveillance and video indexing. This talk addresses recent research at the University of Maryland on algorithms and systems for detecting people in video, representing and recognizing their individual movements, and then reasoning about their movements and interactions with one another to recognize events in which they participate. Human detection has received considerable attention during the past several years, and good levels of detection performance have been achieved. I will describe our research on using a rich repertoire of feature channels to detect humans in images. The approach combines shape, color and texture using the classical statistical method of partial least squares. Many approaches to human movement modeling (e.g., bending down, and running) involve detection and tracking of body extremities and/or internal joints. However, almost all of these methods work only for isolated people. I will present some ongoing research that attempts to track the head, hands and feet of multiple, interacting people. Finally, human movements are not, ordinarily, performed in isolation but in the context of ongoing activities – such as playing a game like baseball or basketball. I will close by describing research on inferring “syntactic” models of groups of movements in baseball videos, and show how these models help to improve individual movement detection and recognition.

Speaker Bio-Sketch: *Larry S. Davis* received his B.A. from Colgate University in 1970 and his M. S. and Ph. D. in Computer Science from the University of Maryland in 1974 and 1976 respectively. From 1977-1981 he was an Assistant Professor in the Department of Computer Science at the University of Texas, Austin. He returned to the University of Maryland as an Associate Professor in 1981. From 1985-1994 he was the Director of the University of Maryland Institute for Advanced Computer Studies. He is currently a Professor in the Institute and the Computer Science Department, as well as Chair of the Computer Science Department. He was named a Fellow of the IEEE in 1997.