COMPUTER VISION DISTINGUISHED SPEAKER SERIES

School of Electrical Engineering & Computer Science
University of Central Florida

Model-Based Human Pose Tracking

Dr. David Fleet
University of Toronto

Future computer vision systems will be able to recognize people and their activities. This will enable myriad new applications, including smart mobile devices, advanced surveillance systems, and new perceptual man-machine interfaces. Towards this end, the detection, tracking and pose estimation of people from digital video are key problems. Pose estimation is especially challenging because image measurements are often insufficient to fully constrain 3D pose. As a consequence, current formulations rely heavily on learned generative and/or discriminative models of human pose and motion.

This talk presents a probabilistic latent variable model for modeling human pose and motion, called the Gaussian Process Dynamical Model (GPDM). The GPDM is a form of probabilistic nonlinear dimensionality reduction for time-series data. The formulation of the GPDM and its applications to modeling and tracking human pose will be described. We will also point to several exciting new directions that are poised to advance the state of the art in people tracking.

2:00pm, February 7, 2008
Harris Engineering Center, Room 101
http://www.eecs.ucf.edu/~vision

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BIOGRAPHY



I joined the Department of Computer Science at the University of Toronto in October, 2003. Prior to that I worked in the Digital Video Analysis and Perceptual Document Analysis Groups at the Palo Alto Research Center (PARC) for 4 years. Before that I was on faculty at Queen's University in Kingston.

I currently serve as Associate Editor-In-Chief for IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), and I am a Fellow of the Canadian Institute for Advanced Research (CIAR).

My research interests include aspects of computer vision, image processing, visual perception and visual neuroscience. Most of my specific research has focused on mathematical foundations and algorithms for visual motion analysis, and models for motion perception and stereopsis.