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Topic: Model-based Face Recognition

Abstract: A face model is a function that maps a vector of parameters onto an image of a face. By varying the parameters, different face images can be generated. The most well known face models are "Active Appearance Models" (AAMs) introduced by Cootes an Taylor, and "3D Morphable Models" proposed by Blanz and Vetter. Model-based face recognition is a general paradigm which operates by first fitting the face model to the novel image(s) of the probe subject and then determining who the probe is by comparing the novel face model parameters with the parameters of the people in the database. Almost any classification algorithm could be used. We believe that model-based face recognition is one of the most promising paradigms for the next generation of face recognition systems for the following reasons: (1) face models provide a compact coding of faces, (2) fitting a face model solves the registration problem, (3) model based face recognition naturally deals with pose variation, and (4) model based face recognition can be used to integrate the information in a video sequence to perform face recognition from video. In this talk I we describe our recent research on face model construction and face model fitting.

Biography: Dr. Baker is a Research Scientist in the Robotics Institute at Carnegie Mellon University, where he conducts research in Computer Vision. Before joining the Robotics Institute in September 1998, he was a Graduate Re-search Assistant at Columbia University, where he obtained his Ph.D. in the Department of Computer Science. He also spent a summer visiting the Vision Technology Group at Microsoft Research. His research focuses on face analysis (detection, tracking, recognition, expression, and gaze estimation) and 3D reconstruction (stereo, shape-from-silhouette, scene flow, 3D human tracking, and image-based rendering.) He received his B.A. in Mathematics from the University of Cambridge in June 1991, his M.Sc. in Computer Science from the University of Edinburgh in November 1992, and his M.A. in Mathematics from the University of Cambridge in February 1995.