

EE Department Seminars

February 1, 2010, Monday, 3 p.m.
Yorgo Istefanopulos Meeting Lounge (KB 217)

Facial Image Processing and Analysis

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In this talk we present an overview of facial image processing and analysis research activities that have been conducted in Karlsruhe Institute of Technology (KIT) with the emphasis on robust face recognition. In the talk, first, Karlsruhe Institute of Technology will be introduced briefly. Afterwards, developed facial analysis systems will be presented. The rest of the talk will be focused on robust face recognition.

Face recognition has attracted significant amount of research efforts during the last two decades. A plethora of appearance-based face recognition algorithms have dominated the literature. Nevertheless, these approaches are not able to handle the variations that can occur on facial appearance due to changing illumination, occlusion, aging, etc. Only a subset of these approaches, which have been specifically developed to combat against one of these variations, can handle the facial appearance variations that they are developed for. However, for reliable real-world operation, a face recognition algorithm has to handle all the variations that it can confront with. In the robust face recognition part of the talk, this problem will be addressed and a generic face recognition algorithm that performs robustly against the variations in facial appearance will be described. In addition, several face recognition systems that have been developed based on this algorithm will be presented.

Dr. Ekenel is the head of young investigator group on "Facial Image Processing and Analysis" at the Computer Science Department in Karlsruhe Institute of Technology (TH), Germany. He received his B.Sc. and M.Sc. degrees in Electrical and Electronic engineering from Bogazici University in 2001 and 2003, respectively, and Ph.D. degree in Computer Science from the University of Karlsruhe (TH) in 2009. His current research focuses on face processing and content-based image and video retrieval. He has been developing face recognition systems for smart environments, humanoid robots, and video analysis. He had been the task leader for face recognition in the European Computers in the Human Interaction Loop (CHIL) project and he organized face recognition evaluations within the CLEAR 2006, 2007 international evaluation campaigns. He has been responsible for face recognition in the German Humanoid Robots project. He is a committee member of the Core Technology Cluster (CTC) in the French-German Quaero project. He has received the EBF European Biometric Research Award in 2008 for his contributions to the field of face recognition. His research led more than 40 publications in international journals, conferences, and workshops. In addition to the scientific work, many real-world systems have been developed based on his algorithm. With these systems, he received the Best Demo Award at the IEEE International Conference on Automatic Face and Gesture Recognition in 2008. Besides his research activities on face analysis, he has been also leading the video retrieval systems development efforts for the NIST TRECVID 2007, 2008, and 2009 evaluations.