EE Seminar Series

Dallas Chapter of IEEE Signal Processing Society Presents

Recent Advances in Face Recognition

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ECSS 2.102 (TI Auditorium)

Over the last twenty years, much progress has been made in still image-based recognition, accompanied by meticulous performance evaluation of many state-of-the art algorithms. It is widely believed that the face recognition problem has been solved for frontal images acquired in controlled illumination conditions. However, when variations due to pose, illumination and aging are present, the performance of many existing algorithms is not good enough for deployment. In this talk, I will discuss two new algorithms for pose and illumination invariant face recognition using still images. These algorithms are derived using generalized photometric stereo and albedo estimation using a non-stationary Wiener filter. I will then discuss model-based approaches for face recognition across aging in children and adults. Finally, I will discuss the video-based face recognition problem and present two algorithms, one based on the particle filter and the other based on statistical inference on manifolds. The talk will conclude with suggestions for future research directions in this area.

Prof. Chellappa received the M.S.E.E. and Ph.D. Degrees in Electrical Engineering from Purdue University, West Lafayette, IN, in 1978 and 1981 respectively. Since 1991, he has been a Professor of Electrical and Computer Engineering and an Affiliate Professor of Computer Science at University of Maryland (UMD), College Park. He is also affiliated with the Center for Automation Research (Director) and the Institute for Advanced Computer Studies (Permanent member). Recently, he was named a Minta Martin Professor of Engineering. Over the past 26 years, he has published numerous book chapters, peer-reviewed journal and conference papers. He has co-authored and edited many books in visual surveillance, biometrics, MRFs and image processing. His current research interests are in face and gait analysis, 3D modeling from video, surveillance and monitoring, hyper spectral processing, and computer vision. Prof. Chellappa served as the associate editor of four IEEE Transactions and as the Editor-in-Chief of IEEE Transactions on Pattern Analysis and Machine Intelligence. He served as a member of the IEEE Signal Processing Society's Board of Governors and as its Vice President of Awards and Membership. He has also served as a General and Technical Program Chair/Co-Chair for several IEEE international, national conferences and workshops. Prof. Chellappa has received several awards, including an NSF Presidential Young Investigator Award, four IBM Faculty Development Awards, an Excellence in Teaching Award and the Technical Achievement Awards from the IEEE Signal Processing Society and the IEEE Computer Society. He also received the Outstanding Innovator Award from the Office of Technology Commercialization, the A.J. Clark School Engineering Faculty Outstanding Research Award, the Distinguished Faculty Research Fellow Award and the Distinguished Scholar-Teacher Award. He co-authored two papers that received Best Paper Awards from the International Conference on Pattern Recognition. He is a Golden Core Member of IEEE Computer Society and also received the Meritorious Service Awards from the IEEE Computer Society and the IEEE Signal Processing Society. He is a Fellow of IEEE, the International Association of Pattern Recognition and the Optical Society of America.

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