Title: Human Face Recognition; Challenges, Achievements and New Trends

Face recognition is widely used as an efficient biometric identification technique which is applied to recognize an unknown individual by analyzing and comparing their facial image to the available database of known identities. It has a wide range of applications such as social networking, border monitoring, access control and law enforcement. The accuracy of face recognition is affected by variation in the appearance of face due to poor illumination, head pose, facial expression, partial occlusion, blur, aging or other degradation. In recent years, many identification techniques were proposed in order to increase the accuracy of recognition versus appearance changes, poor illumination, occlusion and blur. In holistic based approaches the whole face area is employed to extract features and deciding on the identity label. Local Approaches capture the underlying image structure by describing only local parts of the image. In this talk a review of the effectiveness of pre-processing algorithms is presented. A comparison of holistic as well as local techniques is presented. Challenges faced with either technique explained and some improvements are suggested. Techniques to combat poor illumination and occlusion are discussed. Fusion of classifiers to improve the recognition rate is presented. Some new trends in human face recognition are discussed.