Abstract

Face recognition indeed plays a major role in the biometrics security environment. Facial marks as for example freckles, moles, scars etc that are soft biometric traits have played a crucial role in identifying the human face. To provide secure authentication, we require robust methodology for recognizing and authentication of the human face. However, there are numbers of difficulties in recognizing the human face and authentication of the person perfectly. The difficulty includes low quality of images due to sparse dark or light disturbances. To overcome such kind of problems, powerful algorithms are required to filter the images and detect the face and facial marks. This technique comprise extensively of detecting the different facial marks from that of low quality images which have salt and pepper noise in them. Initially we applied (AMF) Adaptive Median Filter to filter the images. The filtered images are then extracted to detect the primary facial feature using a powerful algorithm like Active Shape Model (ASM) into Active Appearance Model (AAM). Finally, the features are extracted using feature extractor algorithm Gradient Location Orientation Histogram (GLOH).

References
Biometrics Security: Facial Marks Detection from the Low Quality Images

Biometrics Security: Facial Marks Detection from the Low Quality Images

descriptors” MIKOLAJCZYK AND SCHMID: A PERFORMANCE EVALUATION OF
LOCAL DESCRIPTORS.

- Hong-rui Wang, Jian-li Yang, Hai-jun Sun, Dong Chen, Xiu-ling Liu, “An improved
Region Growing Method for Medical Image Selection and Evaluation Based on Canny Edge
Detection” 978-1-4244-6581-1/11/$26.00 ©2011 IEEE.

- John Canny, A computational approach to edge detection, IEEE
Transactions on Pattern Analysis and Machine Intelligence, vol. PAMI-8, No. 6, November
1986.

- Mikolajczyk, K., Schmid, C. Indexing based on scale invariant interest points.

- N. A. Spaun, Forensic biometrics from images and video at the Federal Bureau

- M. A. Turk and A. P. Pentland, Face Recognition Using Eigenfaces, in
Proceedings, IEEE Conference on Computer Vision and Pattern Recognition, pp. 586-591,
June 1991.

- JAEWON SUNG, TAKEO KANADE, DAIJIN KIM, A Unified Gradient-Based
Approach for Combining ASM into AAM, International Journal of Computer Vision 75(2),

- D. G. Lowe, Object recognition from local scale-invariant features, in Proc.

biometric for suspect and victim identification, in Proc. Biometric Symposium, Biometric

- S. Belongie, J. Malik, and J. Puzicha. Shape matching and object recognition using
522, 2002.

Index Terms

Computer Science

Security

Keywords

Face recognition Facial marks Soft biometrics Active Shape Model
Active Appearance Model

Adaptive Median Filter
GLOH