



Space saving Implementation of Face Recognition technology in Biometrics

¹MANJU BALA, Department- Computer Science Engg., : Choudhary Devilal University Sirsa

²Kapil Kaswan, Assistant professor, Department- Computer Science Engg., : Choudhary Devilal University Sirsa

Abstract: A face recognition system is a group of programs for automatically recognize a person from a digital graphics or a video frame. Way to do this is by comparing selected characteristics from graphics and face database. Some facial recognition applications identify facial features by extracting landmarks, or features from graphics of subject's face. In this research we have studied & evaluate different edge detection techniques. We have seen that canny edge detector gives better result as compared to others with some positive points. It is less sensitive to noise, adaptive within nature, resolved problem of streaking, provides good localization & detects sharper edges as compared to others.

Keywords: Face Recognition, Biometrics, Canny Edge Detection, Robert, Prewitt, Sobel.

[1] Introduction

A face recognition system is a group of programs for automatically recognize a person from a digital graphics or a video frame. Way to do this is by comparing selected characteristics from graphics and face database. It is generally used within security systems & could be compared to other identifications such as fingerprint or eye iris recognition systems.

Some facial recognition applications identify facial features by extracting landmarks, or features from graphics of subject's face. For example, an algorithm could analyze relative position, size and shape of eyes, nose, cheekbones and jaw. These features are then used to search for other images with matching characteristics. Other applications normalize a group of face images and then compress face properties, only saving data within graphics that is useful for face recognition. A probe graphics is then compared with face data. One of earliest successful systems is based on template matching techniques applied to a set of salient facial characteristics, providing a compressed face representation.

Recognition algorithms could be divided into two main approaches like geometric, which overviews at important characteristics or photometric, which is a statistical approach that distills graphics into properties and compares these properties with templates to eliminate variances. Popular recognition algorithms include Principal Component Analysis using Eigen faces, Elastic Bunch Graph Matching using Fisher Face Algorithm (FFA), Linear Discriminate Analysis, The Hidden Markov model, and neuronal motivated dynamic link matching.

Now rising development claimed to achieve more correctness is three-dimensional face recognition. This technique use 3D sensors to capture information about shape and size of a face. This information is then used to identify distinctive characteristics on

surface of a face, such as outline of eye, nose, forehead and chin.

One advantage of 3D facial recognition is to identify a face from a range of viewing angles, including a profile view that it is not vary by changes within lighting like other methods. 3-D data points from a face highly improve precision of facial recognition. 3D research is improved by development of sophisticated sensors that do a better work of capturing 3D face image. Up to a hundred or more of these graphics sensors could be placed on same IC chip-each sensor observing a different part of spectrum. Sensors work by projecting structured light onto face.



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