

Computing for Human Services

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Chapter 29

Integrated Authentication Model: Face Verification

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29.1. Introduction

This chapter is focusing on one of the essential biometrics which is face verification. This chapter is an integral part with the previous one that was related to fingerprint. It shows the main design and implementation results for face verification.

29.2. Face verification system

Face verification system is basically described in figure 2. Whenever the user needs to get access to medical data that have categorize as level 2 in security, the system snaps a picture of the user. The camera mostly will be plugged on the screen. The image will go through some kind of image processing to enhance the image. After that, the face should be detected from the image. Extracting the feature -using eigenface- is the next step.

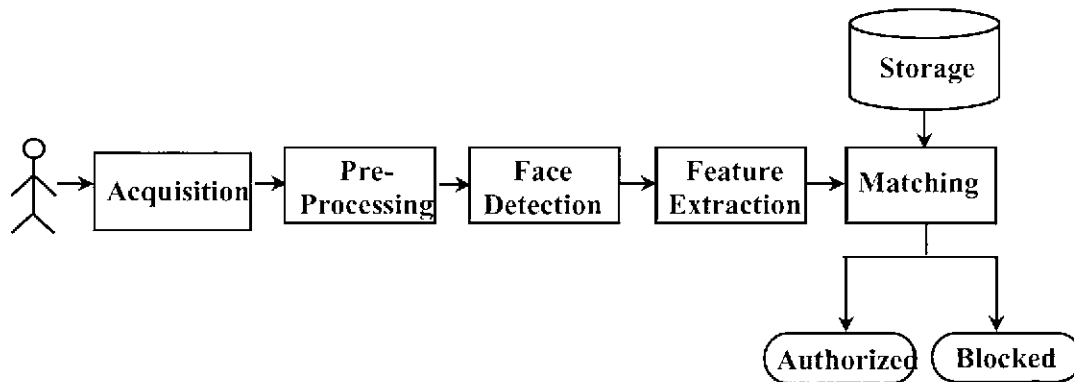


Figure 2: Face verification system blocks.

Based on a password, the system accesses the database to retrieve the information related to user with that password. If the password belongs to someone in the database, the system starts comparing the eigenface template for that user with the new coming face. Finally the last decision of authorizing or blocking the user from accessing the data depending on how familiar is this face with the eigenface template in the database.

The algorithm for the facial verification using eigenfaces is basically described as follow. First, the original images of the training set are transformed into a set of eigenfaces E.