

Fingerprint Recognition by Using Iterative Closest Point

*Assis .Prof. Dr. Ban N. Dhannoon ,** Rajaa .D. Reasan ali,

*Department of Computer/ College of Science/AL - Nahrain University

1. Abstract

Fingerprints are the oldest and most broadly used form of biometric identification. Everyone is known to have unique, immutable fingerprints. Fingerprint identification and recognition considered popular technique in many security and law enforcement applications. There are many systems rely on the matching of fingerprints using various methods and algorithm based on find position and orientation of ridge endings and bifurcations within the fingerprint image in level (level2,level3) we've focus on the other feature (bifurcation) which is found in detected ridges by applying a (3x3) mask to find bifurcation point. Also, we've find distances between bifurcation points.

Key words---Fingerprint recognition, bifurcation, ICP algorithm, Bifurcation matching

2. Introduction

The preprocessing stage is considered as a necessary step in the reliable model since extraction and matching stages depends greatly upon the quality of the input fingerprint image. Therefore, a. Preprocessing should cover four main steps. The first step is image noise elimination; the model used Gaussian filter for removing the image noise. An automatic binarization is applied on the gray level image; that is based on determination of optimum threshold value equal to 128. feature extraction includes Extract bifurcation points (level2) ,fingerprint to have unique, immutable Fingerprints. As most automatic fingerprint recognition Systems are based on local ridge Features known as minutiae, pattern minutiae accurately and rejecting false ones is very important. However, fingerprint images get degraded and corrupted due to variations in skin and impression conditions. Thus, image enhancement techniques are employed prior to minutiae extraction. A critical step in automatic fingerprint matching is to