

Fingerprint recognition with converting fingerprint features to binary code using hamming distance

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Abstract — In this paper try to improve fingerprint recognition methods with converting fingerprint features to a simple binary code. To achieve this goal after preprocessing and feature extraction, fingerprint image convert to two 64 bits code that this conversion lead to small database and flexible comparison. A simple algorithm is used for converting features to binary codes and this algorithm has more speed than algorithms that using feature coordination. Also, due to not depending to real coordinates of feature location it is more accurate. With using a more efficient method of converting gray level image to binary image better result is achieved. The binary results images have very good quality with less false minutia that lead to more accuracy and speed. Preprocessing methods that used in this paper are effectively robust on rotation and scaling in fingerprint.

Index Terms— biometric systems, minutiae extraction, fingerprint recognition, hamming code.