Natthawat Boonchaiseree 2009: Focal Point Detection Based On Half Concentric Lens for Fingerprint Registration. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Associate Professor Vutipong Areekul, Ph.D. 104 pages.

This thesis proposes the novel algorithm to detect the Focal Point which is the identical feature that is used to refer the point for fingerprint registration. The new algorithms applied the procedure of focal point detection by using Half Concentric Lens model with directional field in order to increase the efficiency. Moreover, this thesis presents the formation of error measurement in 2 methods which have been separated as two types; triangle measurement and Manually-mark projection measuremt.

According to the experiment of three FVC databases; FVC2000DB2a, FVC2002DB2a and FVC2004DB1a, It is found that the overview of FVC2000DB2a shows the good performances because fingerprint images have a good quality. Furthermore, the focal point indicates some prospect. However, It is found that some partial fingerprint image and FVC2004DB1a database has low error. However, It is found that there are elastic distortion of fingerprints which make triangular error measurement formation has such a high error and focal point in some finger print images aren't quite consistent

The overview of focal point in this presentation is very high effiency, low complexity and good stability for applying to the fingerprint recognition, especially fingerprint registration.

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