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A Critical Study on Fingerprint Image Sensing and Acquisition Technology

Krishna Prasad K.[1] & P. S. Aithal[2]

[1]Research Scholar, College of Computer and Information Science, Srinivas University, Mangaluru-575001, Karnataka, India

[2] College of Computer and Information Science, Srinivas University, Mangaluru-575001, Karnataka, India

E-Mail: karanikrishna@gmail.com

ABSTRACT

Automatic Fingerprint Recognition System (AFIS) mainly depends on the quality of the fingerprint captured during the enrollment process, even though a lot of techniques developed in literature for fingerprint matching, all most all system is influenced or affected by the quality of acquisition method. Automated fingerprint identification system requires fingerprint images in a special format. Normally it can't receive and process the photographic image or photo taken from virtual camera or cell camera. There are many special acquisition or sensing strategies to extract the ridge-and-valley structure of finger skin or fingerprint. Traditionally, in law or regulation enforcement packages, fingerprints were especially received offline. Fingerprint acquisition can be specially classified into groups as an offline and live scan. An offline acquisition technique gets input through inked affect of the fingertip on paper and digitized with the aid of the paper with an optical scanner or video digital camera. The live acquisition is received through the sensor that is having the ability to directly digitize the sensing tip of the finger. As the fingerprint sensing, image processing, signal processing, and communication technology advance, an increasing number of new technologies in this acquisition technology are arriving at the main facet. In this paper, we discuss different types of fingerprint acquisition technologies, which involve optical, ultrasonic, capacitance, passive capacitance, and active capacitance. This paper helps to identify new fingerprint acquisition technology.

Keywords: Fingerprint Sensing Technology, Fingerprint image, Optical fingerprint sensor, Ridge, Valley.

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