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Overview on Fingerprinting Authentication Technology (Conference Paper)

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Abstract

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This paper addresses the characteristics, technology, and possible future of fingerprints authentication method. Fingerprint physiology makes it an ideal for biometrics authentication, primarily the tiny details located on its surface called minutiae. Fingerprint scanning systems are designed to detect minutiae. Images of detected minutiae are processed through matching algorithms in order to verify a query fingerprint that is identical to a stored fingerprint. However, fingerprint authentication based on minutiae can be easily bypassed and the need for a more secure method is required. With respect to the issue, this work explores the possibility of detecting the thickness of the skin layer within a fingerprint as a method of biometrics authentication. Current thickness measuring methods that are non-invasive for that task are identified as Laser Scanning Microscopy (LSM), Optical Coherence Tomography (OCT) and Near Infrared Spectroscopy (NIR). Of the three listed, only OCT and NIR methodology seems viable for simple yet reliable use and can become as promising methods for authentication based on skin layer thickness. © 2020, Springer Nature Singapore Pte Ltd.

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Author keywords

Authentication Biometrics Fingerprint Security Skin thickness

Indexed keywords

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Authentication Biometrics Infrared devices Near infrared spectroscopy
Optical tomography Palmprint recognition

Engineering uncontrolled terms

Authentication methods Authentication technology Biometrics authentication
Fingerprint authentication Fingerprint scanning Laser scanning microscopy
Matching algorithm Skin layer thickness

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