

# Fingerprint Matching with Optical Coherence Tomography

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## Abstract

Fingerprint recognition is an important security technique with a steadily growing usage for the identification and verification of individuals. However, current fingerprint acquisition systems have certain disadvantages, which include the requirements of physical contact with the acquisition device, and the presence of undesirable artefacts, such as scars, on the surface of the fingerprint. This paper evaluates the accuracy of a complete framework for the capturing of undamaged, undistorted fingerprints from below the skins surface using optical coherence tomography hardware, the extraction and conversion of the subsurface data into a usable fingerprint and the matching of such fingerprints. The ability of the framework to integrate with existing fingerprint recognition systems and its ability to operate as an independent stand-alone system are both evaluated.