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## Patent Search

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### Abstract:

Fingerprints, as part of biometrics, play crucial role in unique identification of humans across the globe. It is essential to detect fingerprints accurately. However, it is indispensable for biometrics based identity detection systems to deal with distorted fingerprints as well. For genuine cases, it is important to rectify distorted fingerprints. The current invention is aimed at having a framework for detection and rectification of distorted fingerprints. It is cloud-assisted approach that makes the system scalable and available. The system has three important modules. First module is named as fingerprint registration module that captures fingerprint of humans, enhance them using SIFT analysis, extract minutiae, generate minutiae table and save it to fingerprint database. The second module is known as fingerprint verification module which takes care of uniquely identifying humans. It captures live fingerprint, matches with fingerprints in the database to accept or reject it based on the purpose of an application for which fingerprint is given by customer. In case of any distorted fingerprint, for whatever reason, the third module takes care of finding its genuineness and performs rectification of fingerprint so as to allow smooth functioning in future. The invention is realized using deep learning and image processing. The current invention has many stakeholders who are immensely benefited. They include government organizations dealing with unique identification of citizens, banks, insurance companies, crime and criminal investigation departments, general public, researchers and academia.

### Complete Specification

#### Claims:We Claim:

1. A system for cloud assisted approach for detection and rectification of distorted fingerprints.
2. A registration module that captures live fingerprint of a human, generate minutiae tables, verify integrity and register to cloud based database.
3. A verification module that checks whether a customer or user's fingerprint matches with one of the registered fingerprint to allow or deny access to an application.
4. A module for fingerprint distortion detection and rectification that leverages smooth functioning of applications for human identity establishment.
5. A SIFT analysis based method for detecting quality of fingerprint and enhance its quality prior to registration.
6. An integration module to ensure the realization of the intended system.
7. A solution to the problem of unique human identity establishment considering fingerprint distortions and rectification.

Description:FIFI D OF INVENTION

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