Low-cost, contactless and accurate 3D fingerprint identification system

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A touchless 3D fingerprint identification system is on the way. Credit: Pogrebnoj-Alexandroff

Traditional fingerprint identification by pressing or rolling of finger against the hard surface often results in partial or degraded images due to improper finger placement, skin deformation, slippages, or smearing.

Therefore touchless 3D finger imaging can provide more accurate personal identification as rich information is available from 3D fingerprint images.

This project at the Hong Kong Polytechnic University designs and develops a low-cost, faster, more accurate and touchless 3D fingerprint identification system for high security applications. The advanced biometric identification using proposed system will enable the low-cost, faster, hygienic and more accurate identification of humans for wide range of civilian/forensic applications.

Special Features and Advantages

- Contactless 3D fingerprint recovery and matching using single fixed camera
- Extended minutiae representation and matching in 3D space
- Simultaneous 2D and 3D Fingerprint matching for higher accuracy/security
- Lower cost and superior performance than state-of-the-art 3D fingerprint systems
- Proprietary 3D fingerprint algorithms protected by awarded US Patent

Applications

- High security automated immigration crossing
- Touchless fingerprint identification for improved hygiene
- Automated detection of surgically altered fingerprints

Provided by Hong Kong Polytechnic University