Abstract

Fingerprints are the most widely used biometric features for person's identification and verification. Because of their uniqueness and consistency overtime, fingerprints have been used for identification for many years. Fingerprint has features that can be represented in terms of global (singular point) and local features (bifurcation and termination). These features are used for automatic identification and verification. This dissertation attempts to present Graph based index generation from the minutiae of the skeleton images which is both rotation and transformation invariance. The graph can be generated by using either K-means or DBSCAN. The effectiveness of these two clustering approach is analyzed by F-measure method. For reducing fingerprint searching complexity, database is clustered and a profile is generated for each cluster which served as the classification purpose. The search complexity is further reduced by iteratively splitting each of the class into hierarchy of sub-clusters till each of the sub-clusters contains objects which are less than threshold value or a similarity threshold can no longer be increased.