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Topic: Symmetric hash functions for fingerprint minutiae

Abstract: We present a method of hashing fingerprint minutiae information to a set of numbers. The purpose of this hashing is the same as the purpose of hashing text passwords - to eliminate the need to keep original fingerprint templates in the database. The fingerprint matching can be done using only hashed values, and original minutia information cannot be restored using hashed values.

The main difficulty in constructing such hash functions for fingerprint applications is caused by the difficulty of ordering minutiae or extracting some ordered features. In our algorithm we avoid these difficulties by considering symmetric functions and localized sets of minutiae. The algorithm could also be modified to use different symmetric functions resulting in cancellable fingerprint templates.

Biography: Sergey Tulyakov received an M.S. in Computer Science from the University at Buffalo in 2000 and is currently pursuing a Ph.D. His research at CUBS has focused on projects such as the Fingerprint Identification, Handwriting Address Interpretation and the United Kingdom Address Interpretation Systems.

Sergey's work has improved handwritten word recognizers and combination of word recognizers. He also developed an address block location algorithm for the Handwritten Address Interpretation project as well as database functions and support for the fingerprint project. His research interests include handwritten character and word recognition and combination of classifiers.