Abstract

Biometrics have been used from ages for authentication purpose but the key advantages of hand vein pattern that is “hand vein pattern are 100 times more unique than other physiological features” are attracting many researchers. In this paper we have proposed an efficient authentication system using hand vein pattern. The concept of information sets has been used for feature extraction so as to have control over the local information. The information set based features has already been implemented on biometrics like ear and face. Till now these features have not been implemented on hand vein pattern based verification systems hence we have explored their suitability on hand veins. All the experiments have been carried out on hand vein database developed at IIT, DELHI. We have used Hanman classifier to check the accuracy of extracted features. Then we have optimized the Hanman classifier performance by using genetic algorithm. The optimized results shows that the proposed system in 99% efficient. We have also compared Hanman classifier accuracy with accuracy obtained from k-nearest neighbor and SVM classifier.
References


Index Terms

Computer Science Information Sciences

Keywords

Hand vein, Biometrics, Information sets, Fuzzy sets, Hanman classifier, T-norms, Genetic
algorithm.