Abstract

1. Name  
   K. R. Radhika, Asst Prof, Dept. of ISE, B.M.S. College of Engineering, Bangalore

2. USN  
   1BM06PEM02

3. Degree Registered  
   Ph.D

4. Research center  
   Dept of E&C, B.M.S.C.E

5. Guide  
   Dr. M. K. Venkatesha, Principal, R.N.S. Institute of Technology, Bangalore 560063

6. Co-Guide  
   Dr. G. N. Sekhar, Vice Principal, B.M.S. College of Engineering, Bangalore

7. Topic  
   On-line and Off-line Biometric behavioral pattern authentication system. (BBPAS)

Introduction to study

Biometric security technology play a vital role for most security sensitive systems in modern society like banks, wireless transactions, web commerce and government organizations. The techniques must be reliable, cost effective and easily accessed by the authorized person. The simplest means of authentication universally from ancient times is handwritten signature and moving towards voice signature. The challenging features of authentication process in both the types vary for same person during different times.

Need for the present study

The aim of the proposed research is to develop both online and offline authentication system. The design of authentication system requires proper data acquisition, preprocessing, feature extraction, comparison process, and performance evaluation. The problem space consist dynamic parameters such as speed, pressure, vibrations, utterances and static parameters like size, orientation, peaks, valleys. The proposed system would utilize some of the stated combinations. The offline approach may require some of the intelligent image processing with stochastic data tolerant systems. Verification and proper recognition as the sample population grows need to be tested in fast and reliable way with set of performance evaluation techniques namely analytical, simulation or emulation.
**Objectives/scope**

**Dynamic verification:**

Online method depends on control factors, for appropriate digitization of signal. The input will be represented in time varying signals. The system will plot the input data on various domains for processing. Some of the transforms such as Fast Hadmard transform, Fourier transform, wavelet functions or an innovative novel transform can be used. Soft computing method which would be used to compare the data plotted in various domains.

**Static verification and recognition:**

Each user’s copy of enrollment would be stored in a database. The method depends on size and sophistication of the database. No two data samples are fully identical, even after the transformation therefore threshold has to be built into the system for adaptation and learning. The stored data information will be plotted on various domains. Unlike online method the correctness of the system is primarily depend on storing and retrieval of the samples. The existing database techniques may have a short fall of reproducing the original information. This shortfall may be addressed by object oriented or relational databases. Clustering based techniques can be efficiently used for recognition process. The versatility of the learning rate of the proposed system is based on any supervised or unsupervised computing methods.

**Probable chapter scheme**

1$^{st}$ Chapter : Introduction
2$^{nd}$ – 4$^{th}$ Chapter : On-line authentication
5$^{th}$ – 7$^{th}$ Chapter : Off-line authentication
8$^{th}$ chapter : References

**References**

For On-line authentication:


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