An Invariant Signature Recognition Using Static and Dynamic Features

Abdullah I. Alshoshan
Computer Engineering Department, College of Computer/Qassim University, Saudi Arabia

Abstract:

Handwritten signature is the most common secured personal biometric authentication, especially in Banks. Signature verification system (SVS) can be classified into two methods: off-line verification, which deals with signature information, which is in a static format, like image, and on-line verification, which requires a stylus pen and an electronic tablet, connected to a computer to grab the dynamic signature information as well as the static characteristics of signature. An important issue in signature verification and identification is the invariance of the signature's features. In this paper, off-line signature verification and identification, like the normalized Fourier descriptor (NFD) and the normalized central moment (NCM), and on-line signature verification and identification, like normalized signature speed and acceleration will be discussed. These features are combined using neural network (NN). The implementation and the testing of the design are accomplished and analyzed, and comparisons of the efficiency of each invariant algorithm are discussed, whatever is the language or shape of the signature. A data set of on-line (dynamic) and off-line (static) invariant features of the signature is also built and tested.

Keywords:

signature recognition, image analysis, pattern recognition algorithms.