Offline Signature Recognition using Hidden Markov Model (HMM)

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Abstract

HMM has been used successfully to model speech and online signature in the past two decades. The success has been attributed to the fact that these biometric traits have time reference. Only few HMM based offline signature recognition systems have been developed because offline signature lack time reference. This paper presents a recognition system for offline signatures using Discrete Cosine Transform (DCT) and Hidden Markov Model (HMM). The signature to be trained or recognized is vertically divided into segments at the centre of gravity using the space reference positions of the pixels. The number of segmented signature blocks is equal to the number of states in the HMM for each user notwithstanding the length of the signatures. Experimental result shows that successful signatures recognition rates of 99.2% is possible. The result is better in comparison with previous related systems based on HMM and statistical classifiers.
Reference

Index Terms

Computer Science  Image Processing

Key words

Offline Signature  DCT Features  Hidden Markov Model