Abstract

New challenges in computer applications such as web searching, multimedia data retrieval, data mining, face recognition and handwriting recognition has attracted many researchers. Handwriting identification is one of the important research topics in the area of Pattern recognition and image processing. Many methods have been reported for identification of writer
based on handwriting. In this paper, we propose a novel approach to identify the writer based on Kannada language using empirical mode decomposition (EMD). We have made an attempt to identify the writer with an assumption that text is fixed. As each writer, handwriting visually differs from one another, each writer’s handwriting may be regarded as a different texture. These textures are taken as a unique characteristic to identify the writers. These textures are decomposed using EMD, which in turn generates series of intrinsic mode functions. The first four IMFs are considered for our purpose. Thus each handwritten image forms a 4-dimensional vector and is called Writer features. These features are stored for identification of test writer. The k-NN classifier is used to identify the test writer. The proposed method has been tested on a stored features containing handwriting features of 50 writers including machine printed one. Experiment result prove the robustness and flexibility of our approach. With this new approach encouraging experimental results have been obtained.

Reference

- Bangy Li and Tieniu Tan, Online Text-independent Writer Identification Based on Temporal Sequence and Shape Codes 2009 10th International Conference on Document Analysis and Recognition.


Index Terms

Computer Science

Pattern Recognition
Key words

Writer identification

Empirical mode decomposition (EMD)
Feature extraction

Hilbert-Huang transforms

Kannada Language

k-Nearest Neighbor classifier