

LITERATURE SURVEY

A Novel Method for Handwritten Digit Recognition System

Author name: Vijay Laxmi Sahu, Babita Kubde

Year of Publishing: 2013

Description:

This paper presents detailed review in the field of Off-line Handwritten Character Recognition. Various methods are analyzed that have been proposed to realize the core of character recognition in an optical character recognition system. The recognition of handwriting can, however, still is considered an open research problem due to its substantial variation in appearance. Even though, sufficient studies have performed from history to this era, paper describes the techniques for converting textual content from a paper document into machine readable form. Offline handwritten character recognition is a process where the computer understands automatically the image of handwritten script. This material serves as a guide and update for readers working in the Character Recognition area. Selection of a relevant feature extraction method is probably the single most important factor in achieving high recognition performance with much better accuracy in character recognition systems.

Author name: Tirtharaj Dash

Year of publishing: 2013

Description:

An efficient Offline Hand Written Character Recognition algorithm is proposed based on Associative Memory Net (AMN). The AMN used in this work is basically auto associative. The implementation is carried out completely in 'C' language. To make the system perform to its best with minimal computation time, a Parallel algorithm is also developed using an API package OpenMP. Characters are mainly English alphabets (Small (26), Capital (26)) collected from system (52) and from different persons (52). The characters collected from system are used to train the AMN and characters collected from different persons are used for testing the recognition ability of the net. The detailed analysis showed that the network recognizes the hand written characters with recognition rate of 72.20% in average case. However, in best case, it recognizes the collected hand written characters with

88.5%. The developed network consumes 3.57 sec (average) in Serial implementation and 1.16 sec (average) in Parallel implementation using OpenMP.

Author name: Rajib Lochan Das, Binod Kumar Prasad Goutam Sanyal

Year of publishing: 2012

Description:

Recognition rate of handwritten character is still limited around 90 percent due to the presence of large variation of shape, scale and format in hand written characters. A sophisticated hand written character recognition system demands a better feature extraction technique that would take care of such variation of hand writing. In this paper, we propose a recognition model based on multiple Hidden Markov Models (HMMs) followed by few novel feature extraction techniques for a single character to tackle its different writing formats. We also propose a post-processing block at the final stage to enhance the recognition rate further. We have created a data-base of 13000 samples collected from 100 writers written five times for each character. 2600 samples have been used to train HMM and the rest are used to test recognition model. Using our proposed recognition system we have achieved a good average recognition rate of 98.26 percent.

Author name: Om Prakash Sharma, M.K. Ghose and Krishna Bikram Shah

Year of publishing: 2012

Description:

This paper presents an Improved Zone based Hybrid Feature Extraction Model using Euler Number, which not only improves the feature extraction process which was implemented in Diagonal Based Feature Extraction [1] but also helps in efficient classification of the handwritten alphabets. The use of Euler Number in addition to zoning increases the speed and the accuracy of the classifier as we are able to reduce the search space by dividing the character set into three groups.

Author name: T. Som and Sumit Saha

Year of publishing: 2011

Description:

In the present paper, we have given a method to recognize a handwritten character by using Fuzzy membership function. Ten sample images of each character in matrix form are fused together to make one standard matrix of the character. The unknown character to be tested for identification is also converted to an image matrix and compared with each standard matrix and thereby recognized by using the Fuzzy scores generated. Several binary images have been tested to demonstrate the effectiveness of the system. This method improves the character recognition method of Chakraborty and Sil (2005) in terms of accuracy.

SUBMITTED BY: BijuPatson