A Novel method for handwritten digit recognition – Literature Survey

Team Members :

BHARATH KUMAR AS -913119104013

ASHWIN VIJAY TV- 913119104301

BARATH BALAJI - 913119104009

SHIVA RAKESH- 913119104096

Abstract:

Optical character recognition is one of the capabilities of computers to perceive text from external sources, for example, e-structures, e-archives, etc. OCR is a technique to recognize handwritten or printed text by a PC. It converts handwritten, printed, or photo of any documents into digitized format. OCR is mainly applied in the research fields of pattern recognition, machine learning, and computer vision. Here in this paper, we use OCR and k-nearest neighbor algorithm and classifier for text recognition. The project is equipped to recognize both handwritten and printed for cursive writing of the following styles; San-Serif, Tahoma, Comic Sans, and Calibri.

Due to the complex and irregular shapes of handwritten text, it is challenging to spot and recognize the handwritten words. In low-resource scripts, retrieval of words is a difficult and laborious task. The need for increasing the number of samples and introducing variations in the extended training datasets occur with the use of deep learning and neural network models. All possible variations and occurrences cannot be covered in an efficient manner with the use of the existing preprocessing strategies and theories.

Using an efficient neural network for recognition and segmentation will definitely improve the performance and accuracy of the results; in addition to reduce the

efforts and costs. This paper investigates and compares between results of four different artificial neural network models. The same algorithm has been applied for all with applying two major techniques, first, neural-segmentation technique, second, apply a new fusion equation. The neural techniques calculate the confidence values for each Prospective Segmentation Points (PSP) using the proposed classifiers in order to recognize the better model, this will enhance the overall recognition results of the handwritten scripts.

This paper presents a comprehensive review of Handwritten Character Recognition (HCR) in English language.The handwritten character recognition has been applied in variety of applications like Banking sectors, Health care industries and many such organizations where handwritten documents are dealt with. Handwritten Character Recognition is the process of conversion of handwritten text into machine readable form. For handwritten characters there are difficulties like it differs from one writer to another, even when same person writes same character there is difference in shape, size and position of character. Latest research in this area has used different types of method, classifiers and features to reduce the complexity of recognizing handwritten text.