A Novel Method for Handwritten Digit Recognition System

Domain: Artificial Intelligence

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Hardware Requirements:

● Processor : Intel Core i5

● HDD: 1TB

● RAM: Minimum 2GB; Recommended 4GB

Software Requirements:

● Operating system : Windows 10

● Dataset: IAM Dataset(Words, Lines)

● Programming Language: Python

● Numpy : Core package providing powerful tools to manipulate data arrays, such as our character images.

● OpenCV : OpenCV is a large open-source library for image processing, character recognition, and machine learning. It canscan handwritten images.

● Autocorrect : It is used to correct the spelling. It supports many languages.

● Tensorflow : Tensorflow is the core open source library to help you develop and train Machine Learning models.

Survey Papers:

Paper 1:

- Author Name : Gaurav Surve
- Title : Handwritten Character Recognition
- Publication website : https://www.ijcrt.org/
- Published Date : April 4, 2022
- Objective : Handwritten digit recognition has a wide range of applications, including identifying postal codes on envelopes, processing largescale financial statements, and processing bank form input. It was often thought that people who used computers for business had to change their input style to match what the computer expected, whether they were typing or filling out forms with letters.
- Technology used: Tensor flow - Tensor flow is the core open source library to help you develop and train Machine Learning models.

Paper 2:

- Pre-processing techniques involved in the character recognition
- **Publication Year**: 2013
- **Author**: K. Gaurav, Bhatia P. K

This paper deals with the Various pre-processing techniques involved in the character Recognition with different kind of images ranges from a Simple handwritten form based documents and documents Containing colored and complex background and varied Intensities. In this, different preprocessing techniques like Skew detection and correction, image enhancement techniques Of contrast stretching, binarization, noise removal techniques, Normalization and segmentation, morphological processing Techniques are discussed. It was concluded that using a single Technique for preprocessing, we can’t completely process the Image. However, even after applying all the said techniques Might not possible to achieve the full accuracy in a Preprocessing system