Ideation phase
Literature Survey

Date	19 September 2022
Team ID	PNT2022TMID48349
Project Name	A Novel Method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Paper -1

Handwritten digit recognition using deep learning algorithm.

- ***Rithik Dixit.***

Abstract :

The reliance of humans over machines has never been so high such that from object classification in photographs to adding sound to silent movies everything can be performed with the help of deep learning and machine learning algorithms. Likewise, Handwritten text recognition is one of the significant areas of research and development with a streaming number of possibilities that could be attained. Handwriting recognition (HWR), also known as Handwritten Text Recognition (HTR), is the ability to receive and interpret intelligible handwritten input from sources such as paper documents, photographs, touch-screens and other devices . Apparently, in this paper, we have performed handwritten digit recognition with the help of MNIST datasets using Multi-Layer Perceptron (MLP) and Convolution Neural Network (CNN) models. Our main objective is to compare the accuracy of the models stated above along with their execution time to get the best possible model for digit recognition.

Reference : https://arxiv.org/pdf/2106.12614.pdf

Paper -2

Recognition of Handwritten Digit using Convolutional Neural Network

Md. Anwar Hossain

Abstract :

Humans can see and visually sense the world around them by using their eyes and brains. Computer vision works on enabling computers to see and process images in the same way that human vision does. Several algorithms developed in the area of computer vision to recognize images. The goal of our work will be to create a model that will be able to identify and determine the handwritten digit from its image with better accuracy. We aim to complete this using the concepts of Convolutional Neural Network and MNIST dataset. Though the goal is to create a model which can

recognize the digits, we can extend it for letters and then a person's handwriting. Through this work, we aim to learn and practically apply the concepts of Convolutional Neural Networks.

Reference : https://core.ac.uk/download/pdf/231148505.pdf

Paper -3

Handwritten Digit Recognition using Machine Learning Algorithms.

- Mohammad Badrul Alman Miah

Abstract :

Handwritten character recognition is one of the practically important issues in pattern recognition applications. The applications of digit recognition includes in postal mail sorting, bank check processing, form data entry, etc. The heart of the problem lies within the ability to develop an efficient algorithm that can recognize hand written digits and which is submitted by users by the way of a scanner, tablet, and other digital devices. This paper presents an approach to off-line handwritten digit recognition based on different machine learning technique. The main objective of this paper is to ensure effective and reliable approaches for recognition of handwritten digits. Several machines learning algorithm namely, Multilayer Perceptron, Random Forest, J48 and Random Tree has been used for the recognition of digits using WEKA.

Reference : https://globaljournals.org/GJCST_Volume18/3-Handwritten-Digit-Recognition.pdf

Paper- 4

Effective Handwritten digit recognition using deep neural network.

- ***Kolla bhanu prakash***

Abstract :

This paper proposed a simple neural network approach towards handwritten digit recognition using convolution. With machine learning algorithms like KNN,SVM/SOM, recognizing digits is considered as one of the unsolvable tasks due to its distinctiveness in the style of writing. In this paper, Convolution Neural Networks are implemented with an MNIST dataset of 70000 digits with 250 distinct forms of writings. The proposed method achieved 98.51% accuracy for real-world handwritten digit prediction with less than 0.1 % loss on training with 60000 digits while 10000 under validation.

Reference: http://www.warse.org/IJATCSE/static/pdf/file/ijatcse66922020.pdf