

LITERATURE SURVEY

Team-Id: PNT2022TMID46095

Title: A Novel Method for Handwritten Digit Recognition System

S.NO	TITLE	AUTHORS	ABSTRACT	DRAWBACKS
1.	Hybrid CNNSVM Classifier for Handwritten Digit Recognition.	Ahlawat Savita, Amit Choudhary	The aim of this paper is to develop a hybrid model of a powerful Convolutional Neural Networks (CNN) and Support Vector Machine (SVM) for recognition of handwritten digit from MNIST dataset. The proposed hybrid model combines the key properties of both the classifiers. In the proposed hybrid model, CNN works as an automatic feature extractor and SVM works as a binary classifier. The MNIST dataset of handwritten digits is used for training and testing the algorithm adopted in the proposed model. The MNIST dataset consists of handwritten digits images which are diverse and highly distorted. The receptive field of CNN helps in automatically extracting the most distinguishable features from these handwritten digits. The experimental results demonstrate the effectiveness of the proposed framework by achieving a recognition accuracy of 99.28% over MNIST handwritten digits dataset.	Essentially our testing dataset is too controlled. An ideal dataset should consist of practical examples that we will meet out on the field, meaning that we want a dataset that consists of a variety of lighting, different hands and rescaled images.
2.	A Novel Handwritten Digit Classification System Based on CNN.	Ali Abdullah Yahya, Min Hu	An enormous number of CNN classification algorithms have been proposed in the literature. Nevertheless, in these algorithms, appropriate filter size selection, data preparation, limitations in datasets, and noise have not been taken into consideration. As a consequence, most of the algorithms have failed to make a noticeable improvement in classification accuracy. To address the shortcomings of these algorithms, our paper presents the following contributions: Firstly, after taking the domain knowledge into consideration, the size of the effective receptive field (ERF) is calculated. Calculating the size of the ERF helps us to select a typical filter size which leads to enhancing the classification accuracy of our CNN. our CNN algorithm achieves state-of-the-art results in handwritten digit recognition, with a recognition accuracy of 99.98%, and 99.40% with 50% noise.	As the noise increases, it results in the steady decrease in the accuracy of the handwritten digit recognition.