Literature Survey

Title of the paper	Author of the paper	Abstract
Handwritten digit recognition: benchmarking of state-of-the-art techniques	Cheng-LinLiu Kazuki Nakashima Hiroshi Sako Hiromichi Fujisawa	This paper presents the results of handwritten digit recognition on well-known image databases using state-of-the-art feature extraction and classification techniques. The tested databases are CENPARMI, CEDAR, and MNIST. On the test data set of each database, 80 recognition accuracies are given by combining eight classifiers with ten feature vectors.
Handwritten Digit Recognition with a Back Propagation Network	Y. LeCun, B. Boser, J. S. Denker, D. Henderson, R. E. Howard, W. Hubbard, and L. D. Jackel AT&T Bell Laboratories, Holmdel, N. J. 07733	We present an application of back-propagation networks to hand-written digit recognition. Minimal preprocessing of the data was required, but architecture of the network was highly constrained and specifically designed for the task.
A Novel Handwritten	Ali Abdullah Yahya 1,	An enormous number of

Digit Classification System Based on Convolutional Neural Network Approach	Jieqing Tan 2 and Min Hu 2	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.
A novel method for Handwritten Digit Recognition with Neural Networks	M. Nagu,N. Shankar,K. Annapurna	Character recognition plays an important role in the modern world. It can solve more complex problems and makes humans' job easier. An example is handwritten character recognition. This is a system widely used in the world to recognize zip code or postal code for mail sorting. There are different techniques that can be used to recognize handwritten characters. Two techniques researched in this paper are Pattern Recognition and Artificial Neural Network (ANN).
Handwritten Digit Recognition using Neural Network	Arkaprabha Basu	The project is to take a picture of a character and process it up to recognize the image of that character like a human brain recognizes the various digits.The project contains the deep

		idea of the Image Processing techniques and the big research area of machine learning and the building block of the machine learning called Neural Network.
Handwritten Digit Recognition Using Machine Learning: A Review	Anchit Shrivastava, Isha Jaggi, Sheifali Gupta, Deepali Gupta	In this paper, reviews of different methods of handwritten digit recognition were observed and analysed. The task for handwritten digit recognition has been troublesome due to various variations in writing styles. The existing methods and techniques for handwritten digit recognition were reviewed and understood to analyse the most suitable and best method for digit recognition.
Handwritten Digit Recognition Using CNN	Mayank Jain, Gagandeep Kaur, Muhammad Parvez Quamar, Harshit Gupta	The fundamental target of this paper is to give effective procedures to acknowledge transcribed numerical by looking at different existing arrangement models. This paper thinks about the exhibition of Convolutional Neural Network (CCN). Results demonstrate that CNN classifier beat over Neural Network with critical improved

		computational effectiveness without relinquishing execution. Handwritten digit recognition can be performed using the Convolutional neural network with the MNIST database from Machine Learning.
Handwritten Digits Recognition: Image correlation VS Machine learning	Sara Elouafig	Optical Character Recognition (OCR) is a subfield of Image Processing which is concerned with extracting text from images or scanned documents. In this project, they have chosen to focus on recognizing handwritten digits available in the MNIST database. The challenge is to use basic Image Correlation, also known as Matrix Matching, techniques in order to maximise the accuracy of the handwritten digits recognizer without going through sophisticated techniques like machine learning.