

## Literature Survey

S.No	TITLE	AUTHORS	PROBLEM ADDRESSED	TECHNOLOGY USED	LIMITATION	REFERENCE
1.	A novel method for Handwritten Digit Recognition with Neural Networks	MALOTHU NAGU, N VIJAY SHANKAR, K.ANNAPURNA	A couple of techniques researched in this specific paper are Routine Recognition and Unnatural Neural Network( ANN). Both techniques usually are defined and diverse methods for every single technique is also discussed.	Bayesian Decision theory Nearest Neighbor rule Linear Classification	The program had more trouble identifying numeral. This may be caused by the fact that the digit is running together or maybe it is not fully attached. The system acquired not been secure.	<a href="http://ijcsit.com/docs/Vo lume%202/vol2issue 4/ij csit2011020463.pdf">http://ijcsit.com/docs/Vo lume%202/vol2issue 4/ij csit2011020463.pdf</a>
2.	Handwritten digits recognition with artificial Neural Network	K. Islam, G.Mujtaba, R.G. Raj, H.F. Nweke	In this study, we implemented a multi-layer fully connected neural network with one hidden layer for handwritten digits recognition. The testing has been conducted from a publicly available MNIST handwritten database.	Convolutional neural network with two layers with 32 images and another with 64 images with some neurons on each layer.	From the MNIST database, we extracted 28,000 digits images for training and 14,000 digits images for performing the test. Our multilayer artificial neural network has an accuracy of 99.60% with test performance.	2017 International Conference on Engineering Technology and Technopreneurship (ICE2T)
3	A method for handwritten recognition using Deep Learning	Rohini.M , Dr.D.Surendran	With this paper, the writer compares the results of probably the most widely used Machine Learning Methods like CNN- convolution neural systems and with Heavy Learning algorithm like multilayer CNN using Keras with Theano and Tensorflow.	CNN Multilayer Perceptron	Typically the complexity of the code and the task is bit more as compared to normal Machine Learning methods	<a href="http://troindia.in/journal/ijcesr/vol6iss6part2/32-36.pdf">http://troindia.in/journal/ijcesr/vol6iss6part2/32-36.pdf</a>

4.	Offline handwritten digit recognition using neural network	Sumedha B Hallale, Geeta D Salunke	Optical character recognition is a typical field of application of automatic classification methods. In this paper, we have introduced a whole new idea of recognition of isolated handwritten digits which is known to be a difficult task and still lacks a satisfactory technical solution.	A boosting method was applied to improve the results by using experts that learn different distributions of the training set and combining its results	Back propagation neural network is one of the simplest methods for training multilayer neural networks. In this paper, we designed a back propagated neural network and trained it with a set of handwritten digits. The average success rates of recognition of all digits are 91.2%..	International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering 2 (9), 4373-4377, 2013
5.	Character Recognition using Artificial Neural Network	Pranjali Pohankar, Namrata Taralkar, Snehalata Karmare, Smita Kulkarni	A neural network is a machine designed to model the way in which the brain performs a particular task. Character recognition techniques help in recognizing the characters written on paper documents and converting it in digital form. Handwritten character recognition is a very difficult problem due to great variation of writing style, different size and shape of the character. Neural network is a technique used to improve the accuracy and efficiency of the handwritten character recognition system.	Author has focused mainly on neural network approaches. Three approaches compared and evaluated for their accuracy and efficiency. Author concluded with more efficient approach as CNN.	The error back propagation algorithm is used to train the MLP networks. The main advantage of back propagation neural network (BPN) method is that it can fairly approximate a large class of functions. The aim of the paper is to use the improved neural network technique to recognize the offline handwritten characters	International Journal of Electronics Communication and Computer Engineering 5 (4), 2014