V.S.B.ENGINEERING COLLEGE, KARUR

Department of Computer Science and Engineering

IBM NALAIYA THIRAN

LITERATURE SURVEY

TITLE : A Novel Method For Handwritten Digit Recognition System

DOMAIN NAME : Artificial Intelligence

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ABSTRACT:

Hand writing recognition is one of the compelling research works going on because every individual in this world has their own style of writing. It is the capability of the computer to identify and understand handwritten digits or characters automatically. Because of the progress in the field of science and technology, everything is being digitalized to reduce

the human effort. Hence, there comes a need for handwritten digit recognition in many real-time applications. MNIST data set is widely used for this recognition process and it has 70000 handwritten digits. We use artificial neural networks to train these images and build a deep learning model. Web application is created where the user can upload an image of a handwritten digit. This image is analyzed by the model and the detected result is returned on to UI

INTRODCUTION:

Handwriting digits and character recognition have become increasingly important in today's digitized world due to their practical applications in various day to day activities.

It can be proven by the fact that in recent years, different recognition systems have been developed or proposed to be used in different fields where high classification efficiency is needed. Systems that are used to recognize Handwriting letters, characters, and digits help people to solve more complex tasks that otherwise would be time consuming and costly.

A good example is the use of automatic processing systems used in banks to process bank cheque. Without automated bank cheque processing systems, the bank would be required to employ many employees who may not be as efficient as the computerized processing system. The handwriting recognition systems can be inspired by biological neural networks, which allow humans and animals to learn and model non-linear and complex relationships [1, 2]. That means they can be developed from the artificial neural network [4]. The human brain allows individuals to recognize different Handwriting objects such as digits, letters, and characters.

However, humans are biased, meaning they can choose to interpret Handwriting letters and digits differently [8]. Computerized systems, on the other hand, are unbiased and can do very challenging tasks that may require humans to use a lot of their energy and time to do similar tasks. There is a need to understand how human-reads under writing.

The human visual system is primarily involved whenever individuals are reading Handwriting characters, letters, words, or digits. It seems effortless whenever one is reading handwriting, but it is not as easy as people believe. A human can make sense of what they see based on what their brains have been taught, although everything is done unconsciously. A human may not appreciate how difficult it is to solve handwriting

LITRATURE SURVEY :

The author [1] said that, Hand written character recognition is a translationproblem of human writings into machine editable text format. In this paper,Convolutional Neural Networks (CNN) is presented for handwritten character recognition. Handwritten character was transformed into graphs based on its underlying skeleton structure. Edges of the extracted graph were categorized into shape types and vertices were extracted from each ofthe edges and their layer wise evaluation using deep learning. Matching procedure of the graph was performed in Convolutional Neural Networks (CNN) approach. Performance evaluation of the proposed method was conducted using validated kaggle data set which exclude ambiguous and unidentified writing samples. The use of neural network can improve the quality of recognition while achieving good performance and encouraging

The author [2] said that, Handwritten digit recognition has recently been of very interest among the researchers because of the evolution of various Machine Learning, Deep Learning and Computer Vision algorithms. In this report, We compare the results of some of the most widely used Machine Learning Algorithms like CNN- convolution neural networks and with Deep Learning algorithm like multilayer CNN using Keras with Theano and Tensor flow. MNIST is a data set which is widely used for handwritten digit recognition. The data set consist of 60,000 training images and 10,000 test images. The artificial neural networks can all most mimic the human brain and are a key ingredient in image processing field. For example ConvolutionNeural networks with back propagation for image processing. The applications where these handwritten digit recognition can be used are Banking sector where it can be used to maintain the security pin numbers, this can be also used for blind peoples by using sound output.

T**he author[3] said that**, handwritten digits are varying from person to person because each one has their own style of writing, means the same digit or character/word written by different writer will be different even in different. Recognizing the letters and digits written by user must be recognized in order to simplify the work of human and improve the system by giving an additional capability of user written instruction. This paper presents survey on handwritten digit recognition systems using neural network

REFERENCE :

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2) Dr. SurRohini , Mendran D

3) Chaskar Shubham D