DIGITAL CLASSIFICATION (MNIST) FOR HANDWRITTEN CHARATERS

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ABSTRACT

Machine learning is the process that allows the system to automatically acquire a knowledge and improve from experiences without being obviously performed. The problem of recognizing the handwritten digits has occupied a very large space in the field of pattern classification. In ancient searches the study shows that neural network and machine learning have efficient and effective performance. Deep learning and neural networks algorithm is the branch of machine learning that can automatically capture the different patterns in the data, and then use the uncovered patterns to predict the future data. So we are going to develop a system which recognize the handwritten scanned digits, where the user provides the input and displays the output. The methods of machine learning with the help of MNIST Database, Python thus the image sensed by the system as the user

Provides the input to it than the system shows the recognized pattern accordingly.

Keywords – Machine learning, handwritten digits, Pattern classification, neural network, deep learning.

LITERATURE SURVEY

In [1] this System, “Wan Zhu” conduct an experiment implementing Back-propagation Neural Network to achieve the classification of the MNIST handwritten digit database. In the experimental model, 28 * 28 = 784 pixels are regarded as input and 10 different classes of digits from 0 to 9 as output.

In [2] 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.

INTRODUCTION

Machine learning and deep learning plays an important role in computer science. The handwritten digit recognition is the ability of computer to recognize human handwritten digits. It is a hard task for the machine because handwritten digits are not perfect and can be made with many different flavors. Handwritten digit recognition needs proper understanding of classification of digits and the difference between the minor and major points to properly differentiate between different digits which can be only possible with proper training and testing. In Handwritten recognition computer receives and understand handwritten input from sources such as paper documents, user input, touch-screens and other devices. The main goal in digit recognition is feature extraction is to remove the redundancy from the data and gain a more effective embodiment of the word image through a set of numerical attributes.

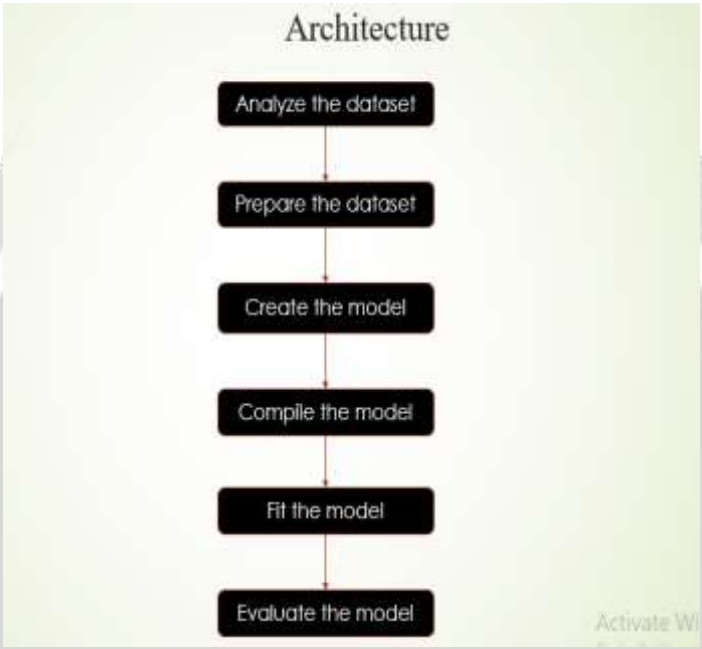
PROPOSED SYSTEM

These days, an ever-increasing number of individuals use pictures to transmit data. It is additionally main stream to separate critical data from pictures. Image Recognition is an imperative research area for its generally used

applications. In general, the field of pattern recognition, one of the difficult undertakings is the precise computerized recognition of human handwriting. Without a doubt, this is a very difficult issue because there is an extensive diversity in handwriting from an individual to another individual. In spite of the fact that this

In [3] In this system, for improving the performance of handwritten digit recognition, the system evaluated Variants of Convolution Neural Network to avoid complex pre-processing ,costly feature Extraction and a complex classifier combination

Difference does not make any issues to people, yet, anyway it is increasingly hard to instruct computers to interpret general handwriting. For the image recognition issue, for example, handwritten classification, it is essential to make out how information is depicted onto images.



CONCLUSION

Nowadays Machine learning is counted as the important aspect of human's life. So we are going to develop a system which recognize the handwritten scanned digits, where the user provides the input and displays the output. The methods of machine learning with the help of MNIST Database, Python. Thus the image sensed by the system as the user provides the input to it than the system shows the recognized pattern.

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