A NOVEL METHOD FOR HANDWRITTEN DIGIT RECOGINTION SYSTEM

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YEAR : 2020

ABSTRACT: Due to increased usage of digital technologies in allsectors and in almost all day to day activities to store and pass information, Handwriting character recognition has become a popular subject of research. Handwriting remains relevant, butpeople still want to have Handwriting copies converted intoelectronic copies that can be communicated and stored electronically. Handwriting character recognition refers to thecomputer's ability to detect and interpret intelligible.Handwriting input from Handwriting sources such as touchscreens, photographs, paper documents, and other sources.Handwriting characters remain complex since different individuals have different handwriting styles. This paper aims to report the development of a Handwriting character recognition system that will be used to read students and lectures Handwriting notes. The development is based on an artificial neural network, which is a field of study in artificial intelligence.Different techniques and methods are used to develop a Handwriting character recognition system. However, few of the focus on neural networks. The use of neural networks fo recognizing Handwriting characters is more efficient and robust compared with other computing techniques. The paper also outlines the methodology, design, and architecture of the Handwriting character recognition system and testing and results of the system development. The aim is to demonstrate the effectiveness of neural networks for Handwriting character recognition.

DEEP BIG SIMPLE NEURAL NETS EXCEL ON HANDWRITTEN DIGIT RECOGNITION

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YEAR: 2010

ABSTRACT: Good old on-line back-propagation for plain multi-layer perceptrons yields a very low 0.35% error rate on the famous MNIST handwritten digits benchmark. All we

need to achieve this best result so far are many hidden layers, many neurons per layer,

numerous deformed training images, and graphics cards to greatly speed up learning.

HAND WRITTEN DIGIT RECOGNITION USING CNN

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YEAR: 2019

ABSTRACT: Digit Recognition is a noteworthy and important issue. As the manually written digits are not of a similar size, thickness, position and direction, in this manner, various difficulties must be considered to determine the issue of handwritten digit recognition. The uniqueness and assortment in the composition styles of various individuals additionally influence the example and presence of the digits. It is the strategy for perceiving and arranging transcribed digits. It has a wide range of applications, for example, programmed bank checks, postal locations and tax documents and so on.The aim of this project is to implement a classificatio n algorithm to recognize the handwritten digits. The after effects of probably the most broadly utilized Machine Learning Algorithms like SVM, KNN and RFC and with Deep Learning calculation like multilayer CNN utilizing Keras with Theano and Tensorflow. Utilizing these, the accuracy of 98.70% utilizing CNN (Keras + Theano) when contrasted with 97.91% utilizing SVM, 96.67% utilizing KNN, 96.89% utilizing RFC was obtained

RECOGNITION OF HNDWRITTEN DIGIT USING CNN

AUTHOR: Md. Anwar Hossainα & Md. Mohon Ali

YEAR: 2019

ABSTRACT: Humans can see and visually sense the world around them by using their eyes and brains. Computer vision works on enabling computers to see and process images in the same way that human vision does. Several algorithms developed in the area of computer vision to recognize images. The goal of our work will be to create a model that will be able to identify and determine the handwritten digit from its image with better accuracy. We aim to complete this by using the concepts of Convolutional Neural Network and MNIST dataset. We will also show how MatConvNet can be used to implement our model with CPU training as well as less training time. Though the goal is to create a model which can recognize the digits, we can extend it for letters and then a person's handwriting. Through this work, we aim to learn and practically apply the concepts of Convolutional Neural Networks.

HANDWRITTEN DIGIT RECOGNITION FOR BANKING SYSTEM

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YEAR:2021

ABSTRACT: The aim of a handwriting digit recognition system is to convert handwritten digits into machine readable formats. The main objective of this work is to ensure effective and reliable approaches for recognition of handwritten digits and make banking operations easier and error free. Handwritten digit recognition system (HDR) is meant for receiving and interpreting handwritten input in the form of pictures or paper documents. Traditional systems of handwriting recognition have relied on handcrafted features and a large amount of prior knowledge. Training an Optical character recognition (OCR) system based on these prerequisites is a challenging task. Convolutional neural networks (CNNs) are very effective in perceiving the structure of handwritten characters/words in ways that help in automatic extraction of distinct features and make CNN the most suitable approach for solving handwriting recognition problems. Our aim in the proposed work is to recognizing written character on cash deposit/ withdrawal/ and other transaction, we are proposing to develop an automatic banking deposit number recognition system which is able to recognize the handwritten account number and amount number on the cash deposit slip and thus automate the cash deposit process at bank counter.

HANDWRITTEN RECOGNITION USING MACHINE LEARNING ALGORITHMS

AUTHOR: S M Shamim, Mohammad Badrul Alam Miah , Angona Sarker

, Masud Rana & Abdullah Al Jobair

YEAR:2018

ABSTRACT: Handwritten character recognition is one of the practically important issues in pattern recognition applications. The applications of digit recognition includes in postal mail sorting, bank check processing, form data entry, etc. The heart of the problem lies within the ability to develop an efficient algorithm that can recognize hand written digits and which is submitted by users by the way of a scanner, tablet, and other digital devices. 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. Several machines learning algorithm namely, Multilayer Perceptron, Support Vector Machine, Naïve Bayes, Bayes Net, Random Forest, J48 and Random Tree has been used for the recognition of digits using WEKA. The result of this paper shows that highest 90.37% accuracy has been obtained for Multilayer Perceptron.

A NOVEL METHOD FOR HAND WRITTEN DIGIT RECOGNITION USING DEEP LEARNING

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YEAR:2019

ABSTRACTS: Handwritten digit recognition has recently been of very interest among the researchers because of the evolution of various MachineLearning, 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 Tensorflow. MNIST is a dataset which is widely used for handwritten digit recognition. The dataset consist of 60,000 training images and 10,000 test images.The artificial neural neworks can all most mimic the human brain and are a key ingredient in image processing field.For example Convolution Neural networks with back propagation for image processing.