A NOVEL METHOD FOR HANDWRITTEN DIGIT RECOGNITION SYSTEM

PROBLEM STATEMENT 1:

Handwritten digit recognition is the challenging problem, The purpose of this project is to take the handwritten digits as an input process the digits, train the artificial neural network effectively by using the algorithm to recognize the pattern.

It analyses the behaviour of classification techniques (CNN) in a large handwriting dataset (MNIST) to predict a digit. Machine-learning techniques, particularly when applied to Neural Networks like CNN, have played an increasingly important role in the design of these recognition systems.

Several methods have been developed in handwritten digit recognition and these methods have been classified into categories: knowledge-based methods, feature-based methods, template-based methods, and appearance-based methods. Errors in Digit recognition cause severe problems like digits written on a bank cheque if recognized erroneously could result in unfortunate consequences.

The goal of our work is to create a model that will be able to recognize and classify the handwritten digits from images by using concepts of Convolution Neural Network. Though the goal of our research is to create a model for digit recognition and classification, it can also be extended to letters and an individual's handwriting.

PROBLEM STATEMENT 2:

The handwritten digits are not always of the same size, width, orientation and justified to margins as they differ from writing of person to person. The similarity between digits such as 1 and 7, 5 and 6, 3 and 8, 2 and 7 etc. so, classifying between these digits is the major problem for computers.

PROBLEM STATEMENT 3:

The problem is faced more when many people write a single digit with a variety of different handwritings. Lastly, the uniqueness and variety in the handwriting of different individuals also influence the formation and appearance of the digits.

With the help of simple neural network we cannot recognize the digits correctly, the result will not be accurate, so we will be using CNN for this recognition of digits which gives the accurate results.