A NOVEL METHOD FOR HANDWRITTEN DIGIT RECOGINTION SYSTEM

Domain: Artificial Intelligence

PROBLEM STATEMENT:

The problem statement is to classify handwritten digits. The goal is to take an image of a handwritten digit and determine what that digit is. The digits range from zero (0) through nine (9).

Who does the problem affect?	The handwritten digits are alwaysof the different size, broad, orientation and justified to margins as they verying from writing of person to person.
What are the boundaries of the problem?	Difficulties in the entire recognition of written digits is the various types and splitting of the numbers, because unique structure of writing will employ multiple handwriting skills and trying to extract the characters and similar patterns from their Specified language.
What is the issue?	Digital recognition is an indispensible issue for scanning a document.

When does the issue occur?	The manually written digits aren't of a comparable size, thickness, position and direction, numerous difficulties need to be taken into consideration to decide the problem of handwritten digit recognition. The variation and collection of composition styles of different people will be affected die to the instance and digits identification.
Where does the issue occur?	Recognizing handwritten text is a problem that can be traced back to the first automatic machines that needed to recognize individual characters in handwritten documents. For example, the ZIP codes on letters needed to be identified.
Why is it important that we fix the problem?	It is a hard task for the machine because **written digits are imperfect** and can be made with many different shapes and sizes. The handwritten digit recognition system is a way to tackle this problem which uses the image of a digit and recognizes the digit present in the identified images.

What solution to solve this issue?	**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.
What methodology used to solve the issue?	Deep learning techniques are used in orderv to the handwritten digit recognition system is a way to handle this problemwhich uses practice images and identifies the digit on the image. **Convolutional Neural Network model** using Pythonlibrary over the dataset from the MNIST to Find digits.