A NOVEL METHOD FOR HANDWRITTEN DIGIT RECOGNITION SYSTEM

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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 is affected by this problem?	The handwritten digits are not always of the same size, width, orientation and justified to margins as they differ from handwriting of one person to another.
What are the boundaries of the problem?	One of the difficulties in the overall recognition of hand-written digits is the variation and distortion of the hand-written digit collection, because different cultures will employ multiple handwriting methods and control to extract the characters and identical patterns from their recognized language.
What is the issue?	Digital image recognition is also a major issue.
When does the issue occur?	As 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 distinctiveness and collection in the composition styles of numerous people additionally affect the instance and presence of the digits.
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. Think about, for example, the ZIP codes on letters at the post office and the automation needed to recognize these five digits.
Why is it important that we fix the problem?	It is a hard task for the machine because handwritten digits are not perfect 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 image.
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 was used to solve the issue?	Deep learning techniques are used in the handwritten digit recognition system to tackle this problem which uses the image of a digit and recognizes the digit present in the image. Convolutional Neural Network model created using Python library over the MNIST dataset to recognize handwritten digits.