LITERATURE SURVEY

Hand writing recognition of characters has been around since the 1980s.The task of handwritten digit recognition, using a classifier, has great importance and use such as online handwriting recognition on computer tablets, recognize zip codes on mail for postal mail sorting, processing bank check amounts, numeric entries in forms filled up by hand (for example tax forms) and soon. There are different challenges faced while attempt to solve problem. The handwritten digits are not always of the same size, thickness, or orientation and position relative to the margins. Our goal was to implement a pattern classification method to recognize the handwritten digits provided in the MINIST data set of images of hand written digits (0 to 9). The data set used for our application is composed of 300 training images and 300 testing images, and is a subset of the MNIST data set (originally composed of 60,000 training images and 10,000 testing images).

The general problem we predicted we would face in this digit classification problem was the similarity between the digits like 1 and 7, 5 and 6, 3 and 8, 9 and 8 etc. Also people write the same digit in many different ways the digit ‘1’ is written as ‘1’, ‘1’, ‘1’ or ‘1’. Similarly 7 may be written as 7, 7, or 7. Finally the uniqueness and variety in the handwriting of different individuals also influences the formation and appearance of the digits

Handwriting digits and character recognitions have become increasingly important in today's digitized world due to their practical applications in various day to day activities. It can be proven by the fact that in recent years, different recognition systems have been developed or proposed to be used in different fields where high classification efficiency is needed. Systems that are used to recognize Handwriting letters, characters, and digits help people to solve more complex tasks that otherwise would be time consuming and costly. A good example is the use of automatic processing systems used in banks to process bank cheques. Without automated bank cheque processing systems, the bank would be required to employ many employees who may not be as efficient as the computerized processing system.

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The handwriting recognition systems can be inspired by biological neural networks, which allow humans and animals to learn and model non-linear and complex relationships . That means they can be developed from the artificial neural network. The human brain allows individuals to recognize different Handwriting objects such as digits, letters, and characters . However, humans are biased, meaning they can choose to interpret Handwriting letters and digits differently . Computerized systems, on the other hand, are unbiased and can do very challenging tasks that may require humans to use a lot of their energy and time to do similar tasks. There is a need to understand how human-read under writing .

The human visual system is primarily involved whenever individuals are reading Handwriting characters, letters, words, or digits. It seems effortless whenever one is reading handwriting, but it is not as easy as people believe. A human can make sense of what they see based on what their brains have been taught, although everything is done unconsciously. A human may not appreciate how difficult it is to solve handwriting The human visual system is primarily involved whenever individuals are reading Handwriting characters, letters, words, or digits. It seems effortless whenever one is reading handwriting, but it is not as easy as people believe. A human can make sense of what they see based on what their brains have been taught, although everything is done unconsciously. A human may not appreciate how difficult it is to solve handwriting.

The systematic literature review does not opt for this research as the results gathered through this were not used as the results. Once the required data has been obtained from the literature review, then data analysis is performed. Narrative synthesis is adopted as our data analysis method for our literature review. During the literature review, the data collected through the articles were gathered together and they summarized in a paragraph. The results gathered through this data analysis were documented and these were used for the experimental research method. While conducting the literature review, towards recognition of handwritten digits a critical analysis is taken for the methods used solving this problem.