**ABSTRACT**

In Handwritten digit recognition, we face many challenges because of different styles of writing of different people as it is not an Optical character recognition. The uniqueness and variety in the handwriting of different individuals also influence the formation and appearance of the digits. Digit recognition has many applications like number plate recognition, postal mail sorting, especially in bank check processing etc. 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 and we can get the accurate information of what we want.

MNIST Handwritten digit recognition is used to develop In-depth learning strategies. Many widely used machine and deep learning algorithms, SVM and CNN trained and tested on the same data into finding comparisons between dividers. Using these deeper learning methods, the higher the level of accuracy can be found.

So as to recognise digits of different size, width, orientation of digits hand written this application is used.

**Keywords:**

Handwritten Digit Recognition, Support Vector Machine (SVM), Convolutional Neural Networks (CNN), Deep learning and Machine learning.