Introduction*[[1]](#footnote-1)*

Handwritten Digit Recognition has been the subject of intensive research for decades. With recent advancements in processing power and computing capabilities, recognizing handwritten digits has attained much attention lately. Handwritten digits are a common part of everyday life. One of the trivial uses is in the US Postal Department which requires digitization of zip codes. The biggest challenge to date has been presence of noise in the data due to the huge variation in writing styles of different people. Hence it is hard for any algorithm to function perfectly.

Though there are many algorithms that are being used for handwritten digit recognition, few have outperformed. Supported vector Machines, Artificial neural Networks, K-Nearest Neighbor and Random Forest have shown unmatched accuracies when predicting.

For testing these algorithms, the testing samples can be generated offline either by scanning the text images written by hand or it can be generated optically using pen based computer screen. The latter is formally known as an online method.

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