

# Digit Recognition using Neural Networks

## Abstract:

Digit recognition system is the working of a machine to train itself or recognizing the digits from different sources like emails, bank cheque, papers, images, etc. and in different real-world scenarios for online handwriting recognition on computer tablets or system, recognize number plates of vehicles, processing bank cheque amounts, numeric entries in forms filled up by hand (say — tax forms) and so on

## Problem Statement:

Implement a simple image classification based on a deep neural network.

## Dataset Information:

The Street View House Numbers (SVHN) dataset is a real-world image dataset and has been obtained from house numbers in Google Street View images

Fragments of this dataset were preprocessed:

- fields of photos that do not contain digits were cut off;
- the photos were formatted to the standard 32X32 size;
- three color channels were converted into one channel (grayscale);
- each of the resulting images was represented as an array of numbers;

## Scope:

- Image processing using Keras library
- Babysitting the neural network and Hyperparameter optimization

## Learning Outcome:

The students will get a better understanding of how basic image processing can take place using deep neural networks from scratch.