

Date	21 October 2022
Team ID	PNT2022TMID07039
Project Name	A Novel method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Step-1: Team Gathering, Collaboration and Select the Problem Statement

Template

A Novel Method for Handwritten Digit Recognition

Handwritten digit recognition is one of the significant areas of research and development with a streaming number of possibilities that could be attained. Handwriting recognition (HWR), also known as Handwritten Text Recognition (HTR), is the ability of a computer to receive and interpret intelligible handwritten input from sources such as paper documents, photographs, touchscreens and other devices [1]. Apparently, in this paper, we have performed handwritten digit recognition with the help of MNIST datasets using Support Vector Machines (SVM), Multi-Layer Perceptron (MLP) and Convolution Neural Network (CNN) models. Our main objective is to compare the accuracy of the models stated above along with their execution time to get the best possible model for digit recognition.

10 minutes to prepare
1 hour to collaborate
2-3 people recommended

Share template feedback

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

Learn how to use the facilitation tools

Use the Facilitation Superpowers to run a happy and productive session.

Open article →

Define your problem statement

The handwritten digit recognition is the capability of computer applications to recognize the human handwritten digit. 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 written digits system is a way to tackle this problem which uses the image of a digit and recognizes the digit present in the image. Convolutional neural network models created using Pytorch library over the MNIST Dataset to recognize handwritten digits.

PROBLEM

Handwritten Digit Recognition is the capability of computer applications to recognize the human handwritten digit. 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 written digits system is a way to tackle this problem which uses the image of a digit and recognizes the digit present in the image. Convolutional neural network models created using Pytorch library over the MNIST Dataset to recognize handwritten digits.

Key rules of brainstorming
To run an smooth and productive session

- Stay in topic.
- Encourage wild ideas.
- Defer judgment.
- Listen to others.
- Go for volume.
- If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP
You can select a sticky note and hit the pencil switch to switch size to start drawing!

Arul

Reliable approach of recognition

Identification of Letter case

Beautin

Efficient algorithm that can recognize hand written digits

Assistive technology tools for writing

Calvin Joel

Extremely precise in translating fonts

Various real life time uses

Accurate prediction of image

Fast recognition of digits

Effective conversion

It should be trusted

Identification of language of given input

High capacity of a computer to take inputs from source

Arul Jothi

Classification of similar characters

Analysis based on the shape of digit image

Keerthivasan

Training of convolutional network

Producing a rich description of the digits

veracious extract of information

Provide high quality image

Automatically infer rules for recognizing of handwritten digits

Perfect image restoration

The results can be more accurate in more number of neurons

Use pattern matching for effective conversion

Quick translation of signatures and notes

Results should be error free

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

20 minutes

Category 1

Reliable approach of recognition

veracious extract of information

The results can be more accurate in more number of neurons

Category 2

Automatically infer rules for recognizing of handwritten digits

High capacity of a computer to take inputs from source

Efficient algorithm that can recognize hand written digits

Category 3

Accurate prediction of image

Training of convolutional network

Analysis based on the shape of digit image

TIP
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your "mind."

Step-3: Idea Prioritization

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes

