Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID24119
Project Name	A Novel Method For HandWritten Digit Recognition System
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	It is easy for the human to perform task accurately by practicing it repeatedly and memorizing it for the next time. Handwritten digit recognition is the capability of computer applications to recognize the human handwritten digits. The handwritten digit recognition system is a way to tackle this problem which uses the image of a digit present in the image. In this competition , the goal is to correct identify digits from a dataset of tens of thousands of handwritten images and experiment with different algorithm to learn what works well and how techniques compare
2.	Idea / Solution description	The algorithm used in convolution Neural Network(CNN). This will prepare the trained model which will be used to classify the digits present in the test data. Thus we can classify the digits present in the image as : class 0,1,2,3,4,5,6,7,8,9.
3.	Novelty / Uniqueness	Novelty in handwritten papers might include, among the other things , a change in the writer, character properties, writing attributes , or overall document appearance. Instead of examining each element separately , we believe that an integrated agent capable of processing known characters and novelities concurrently is a superior technique. The handwritten digit recognition problem can be seen as a sub task of the optical character recognition problem .
4.	Social Impact / Customer Satisfaction	There are many benefits associated with the handwriting recognition system. In addition to reading postal addresses and bank check

		amounts, it is also useful for reading forms. Furthermore, it's used in fraud detection because it makes it easy to compare two texts and determine which one is a copy. As a result, this system fulfills customers' expectations, as it is a novel method for recognizing handwritten digits, ensuring high accuracy for the model and meeting all customer expectations. Users will save a lot of time and effort if the system provides various synonyms for the words recognized. Due to the fact that the users in rural areas will be using their own regional language, this proposed system should be able to detect those digits as well. As the systeis being used in socially crowded places such as banks to checkdetect those digits as well. As the system is being used in socially crowded places such as banks to check amounts, it should be fast and reliable. As it is designed to solve real-world problems, it should be highly reliable and trustworthy in every way, and users throughout the world should be able to use it effectively.
5.	Business Model (Revenue Model)	The applications where these handwritten digit recognition can be used are Banking sector where it can be used to maintain the security pin numbers, it can be also used for blind peoples by using sound output. Some of the research areas include signature verification, bank check processing, postal address interpretation from envelopes etc.
6.	Scalability of the Solution	One of the approaches to make the handwritten digit recognition system scalable is to make use of cloud-native methods. For example, one of the cloud solutions for making Al scalable is IBM Cloud. IBM Cloud Build helps run and manage Al models, optimize decisions at scale across any cloud. The advantage of using cloud to make solutions scalable is that we can deploy our Al application on the specific cloud environment that best supports our business needs. We can take advantage of built-in security capabilities and Al model monitoring. We can Automate Al lifecycles with ModelOps pipelines, deploy and run models through oneclick integration and also prepare and build models visually and programmatically.

		Looking at these advantages, we can drive better business outcomes by optimizing our decisions and also make our solution scalable using cloud