

Project Design Phase-I

Proposed Solution Template

Date	26 october 2022
Team ID	PNT2022TMID49294
Project Name	A Novel Method For Handwritten Digit Recognition System
Maximum Marks	4 marks

Proposed solution template

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	<ul style="list-style-type: none"> ➤ HANDWRITTEN digit recognition is the ability of a computer system to recognize the handwritten inputs like digits, characters etc. ➤ Handwriting recognition system is the most basic and an important step towards this huge and interesting area of Computer Vision. ➤ It is a widely used and deeply understood dataset and, for the most part, is “solved.” ➤ Handwritten character recognition is an extensive exploration area that formerly contains detailed ways of perpetration which include major literacy datasets, popular algorithms.
2.	Idea / Solution description	<ul style="list-style-type: none"> ➤ Supervised learning in spiking neural networks was adopted in for handling the MNIST handwritten digit recognition problem ➤ Different data augmentation techniques , such as random rotation, zoom range, and random horizontal and vertical shifts are used in experiments. ➤ The dataset consist of 60,000 training images and 10,000 test images.
3.	Novelty / Uniqueness	<ul style="list-style-type: none"> ➤ An agent-centric approach to handle novelty in the visual recognition domain of handwriting recognition (HWR). ➤ Novelty, of course, is not unique to the HWR domain. In general, the ability to act appropriately and effectively in novel situations that occur in open worlds, as opposed to closed datasets, has been singled out as a crucial challenge in AI that is inhibiting progress in multiple domains.
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> ➤ One of the most well-known and widely used techniques are convolutional neural networks (CNNs), a kind of neural networks which are able to automatically extract relevant features from input data. ➤ In recent years, deep learning-based techniques have been gaining significant interest in the research community for solving a variety of supervised, unsupervised and reinforcement learning problems.
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"> ➤ Active areas of research include: Online Recognition,

		<p>OfflineRecognition, Signature Verification, Postal-Address Interpretation,Bank-Check Processing, Writer Recognition.</p> <p>➤ 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.</p>
6.	Scalability of the Solution	