DESIGN PHASE-I

PROPOSED SOLUTION

Date	24-09-2022
Team ID	PNT2022TMID39912
Project Name	A Novel Method For Handwritten Digit Recognition System

PROPOSED SOLUTION:

S. No	Parameter	Description
1.	Problem Statement (Problem to be solved)	The total world is working with the various problems of the deep learning. The goal of the deep learning is to factorize and to manipulate the real-life data and the real-life part of the human interaction or complex ideas or the problems in the real life. The most curious of those is Handwritten digit Recognition because it is the building block of the human certified and the classification interaction between other humans. So, the goal was to create an appropriate algorithm that can give the output of the handwritten digit by taking just a picture of that character. If one asks about Image processing, then this problem can't be solved because there can be a lot of noises in that taken image which can't be controlled by human. The main thing is when human write a handwritten character or digit or for our case digit, he has no single idea whether he has to draw it in the circulated pixels or just same as a standard image given. A machine can do that but not the human. so, by matching only the pixels one can't recognize that. for this project one has to create a model by image processing and the deep learning. Both the techniques will be needed because these two techniques will enhance the technique of the deep learning and that can shape this project.

2.	Idea / Solution description	Handwritten digit recognition using MNIST dataset. It basically detects the scanned images of handwritten digits where our handwritten digit recognition system not only detects scanned images of handwritten digits but also allows writing digits on the screen with the help of an integrated GUI for recognition.
3.	Novelty / Uniqueness	The novelty of this project lies in the thorough investigation of all the parameters of CNN architecture to deliver the best recognition accuracy. In case of simple neural network, the accuracy will be less, while on the CNN the accuracy will be more.
4.	Social Impact / Customer Satisfaction	The ability of the handwritten recognition system is that it reduces the work of the humans, and it is one of the practically important issues in pattern recognition applications. The applications of digit recognition include in postal mail sorting, bank check processing, form data entry all these can be done with the help of handwritten character or digit recognition system.
5.	Business Model (Revenue Model)	In recent times, with the increase of Artificial Neural Network (ANN), deep learning has brought a dramatic twist in the field of machine learning by making it more artificially intelligent. Deep learning is remarkably used in vast ranges of fields. In deep learning, Convolutional Neural Network (CNN) is at the centre of spectacular advances that mixes Artificial Neural Network (ANN) and up to date deep learning strategies. It has been used broadly in pattern recognition
6.	Scalability of the Solution	It is the ability of a computer to recognize the human handwritten digits from different sources like images, papers and classify them into 10 predefined classes (0-9). This has been a topic of boundless research in the field of deep learning. In Handwritten digit recognition, we face many challenges because of different styles of writing of different peoples. This deep learning algorithms is for the accurate handwritten digit recognition.