

Handwritten Digit Recognizer

Project report submitted

In partial fulfilment of the requirements of the degree of

Bachelor of Computer Science

in

SOET

by

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Under the Supervision of

Ms. Pallavi Pandey



SOET

K R MANGALAM UNIVERSITY, GURUGRAM, HARYANA, INDIA

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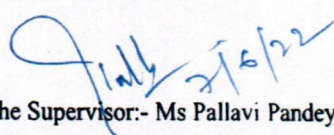
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CERTIFICATE

It is certified that the work contained in the project report titled " Handwritten Digit Recognizer" by the following student:

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has been carried out under my/our supervision and that this work has not been submitted elsewhere for a degree.


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DECLARATION

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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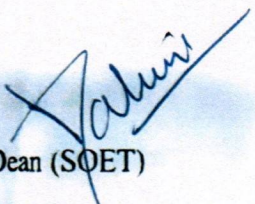
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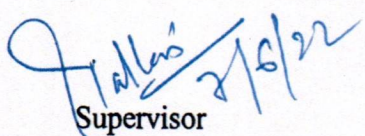
APPROVAL SHEET

This project report entitled **Handwritten Digit Recognizer** by **Piyush Sharma** is approved for the degree of **BSc (Computer Science)**, School of Engineering and Technology.



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Date : 7/6/22

Place: Gurgaon

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The project
input from user in the form of a drawing —
we are given the accuracy of the drawing as compared with the predicted —

ABSTRACT

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application that reads and interprets the input taken from the user, interprets the input by comparing with the records in dataset and provides the output along with the accuracy of the given input.

In simple words this application compares the given writing of the user and compares it with given images in a dataset and matches them, providing output and indicating how accurate the given input is with the data item.

1.1 PROPOSED SYSTEM

To make machines more intelligent, the developers are diving into machine learning and deep learning techniques. A human learns to perform a task by practicing and repeating it again and again so that it memorizes how to perform the tasks. Then the neurons in his brain automatically trigger and they can quickly perform the task they have learned. Deep learning is also very similar to this. It uses different types of neural network architectures for different types of problems. For example – object recognition, image and sound classification, object detection, image segmentation, etc.

The basic purpose of this project is to understand the working of a simple GUI application that reads and interprets the input taken from the user, interprets the input by comparing with the records in dataset and provides the output along with the accuracy of the given input.

In simple words this application compares the given writing of the user and compares it with given images in a dataset and matches them, providing output and indicating how accurate the given input is with the data item.

In Handwritten digit recognition, we face many challenges because of different styles of writing of different peoples as it is not an Optical character recognition. This research provides a comprehensive comparison between different machine learning and deep learning algorithms for the purpose of handwritten digit recognition.

The comparison between these algorithms is carried out on the basis of their accuracy.