Project Title: A Novel Method for Handwritten Digit Recognition System

Team ID: PNT2022TMID15787

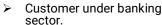
Define

CS

fit into

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1.CUSTOMER SEGMENT(S)



Customer in post offices for arranging letters.

6. CUSTOMER CONSTRAINTS



Customers are not aware about this application.

Network connectivity issues

may occur. Procedure for detecting the image may take some time.

5. AVAILABLE SOLUTIONS

By Installing Digit Recognizer app that is available on play store.

By using snapLogic website we can recognize the handwritten digits.

xplore AS, different

2. JOBS-TO-BE-DONE /PROBLEMS_ JOBS-TO-BE-DONE

Postal Mail sorting ,bank check processing ,Form Data Entry.

PROBLEMS

- Process getting slow to recognize the digits.
- > Time taken to scan and upload images is slower process.

9. PROBLEM ROOT CAUSE



- Customers are not aware about this application.
- Network connectivity issues
- may occur. Procedure for detecting the image may take some time.

7. BEHAVIOUR

SL

i.e. directly related: find the right solar panel installer, calculate

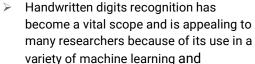
 neural networks and conventional neural network currently provide the best solutions to many problems in handwritten digit recognition

3. TRIGGERS

- ▶ It gives more efficient accuracy for finding the digits that are uploaded as an image.
- m 🏚 🔻 🗖 🖙 ⊃ ŞÕ ŞŤNÔt able to guess the digits sometimes.



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8.CHANNELS of BEHAVIOUR ONLINE

> To provide efficient and reliable techniques for recognition of handwritten numerals by comparing various existing 🔻 🗢 🗳 💶 🖵 classification models.











4. EMOTIONS: BEFORE / AFTER BEFORE:



- > To detect any handwritten digits from various sources is quite difficult.
- Photographs, papers and touch displays and classifying them into ten specified categories 0-9 is difficult.

AFTER

- > The use of in-depth learning methods, human efforts can be reduced.
- > Low confidence on guessing the digits.

- computer vision applications.
- In recent years, neural networks and conventional neural networks currently provide the best solutions to many problems in handwritten digit recognition. A novel hybrid CNN SVM model for handwritten digit recognition. This hybrid model automatically extracts features from the raw images and generates the predictions.
- Nowadays the whole world is a shift in the digital world. They want everything in digital form, they are not ready for manual work or any manual handwritten transaction. So they use this application.

Online digital recognition on PC tablets, posting zip codes, processing bank check rates, handwriting numerical categories (for example- tax forms) and more.

OFFLINE

A complete offline application built using python libraries that uses a neural network in order to predict the digit drawn over screen. Modules Tensorflow for neural