

ELC-Handwritten Text Recognition

The project aims to develop a handwriting recognition system using Python and the K-Nearest Neighbors (KNN) algorithm. The system will take handwritten input and convert it to machine-readable text. The project will involve several steps, including data collection, data pre-processing, feature extraction, model training using the KNN algorithm, and testing the model on a set of test data. The system will be evaluated based on accuracy, precision, and recall metrics. The ultimate goal of the project is to develop a robust and accurate handwriting recognition system that can be used in various applications.

The following K-values were used to train data:-

- K=3 accuracy=0.7641
- K=5 accuracy=0.8011
- K=7 accuracy=0.8068
- K=9 accuracy=0.8102
- K=11 accuracy=0.8115

After experimenting with different values of k for the K-Nearest Neighbors (KNN) algorithm in the handwriting recognition project, it was found that k=11 provided the highest accuracy. Therefore, this value of k was used in the final model to recognize handwritten text using Python and the KNN classifier.

The handwriting recognition project using Python and the KNN classifier could be further developed to be used in future by improving the accuracy of the model and enhancing its functionalities. This could be achieved by increasing the size and diversity of the training dataset, exploring other feature extraction techniques, and experimenting with different classification algorithms. Additionally, the system could be integrated with natural language processing (NLP) tools to enable the recognition of complete sentences and paragraphs. This would increase the usability of the system in various applications such as digital note-taking, document processing, and handwriting-based authentication systems. Moreover, developing a user-friendly interface and optimizing the performance of the system would make it more practical and accessible for end-users.

Made By:

Siddharth Maithani

102153035