**SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN:: BHIMAVARAM**

**(AUTONOMOUS)**

**DEPARTMENT OF CSE**

**Academic Year:: 2021-22:: II Semester**

**BTech - PROJECT WORK:: ABSTRACT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of the Class / Section** | IV BTech CSE B | | |
| **Batch Number** | B14 | | |
| **Project Domain / Technology** | Machine Learning | | |
| **Project Title** | Handwritten Text Recognition | | |
| **Guide Name** | P. Sunil | | |
| **Students Registered** | **Registered Number** | **Student Name** | **Student**  **Signature** |
| 18B01A0563 | A.S.S. Sanjana | A.S.S. Sanjana |
| 18B01A0577 | M. Persis | M. Persis |
| 18B01A0586 | U. Aasin | U. Aasin |
| 18B01A05B2 | P. Deepthi Bhatnakar | P. Deepthi Bhatnakar |

|  |  |  |
| --- | --- | --- |
| Guide Accepted |  |  |
| **Signature of**  **Internal Project Guide** | **Signature of**  **BTech Project – Coordinator** | **Signature of**  **Head of the Department** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Abstract of the Project** | | | |
| Handwriting recognition has been one of the active and challenging research areas in the field of image processing and pattern recognition. Handwriting Detection is a technique or ability of a Computer to receive and interpret intelligible handwritten input from sources such as paper documents, notes, touch screens, photographs, etc. Handwritten Text recognition is one of the areas of pattern recognition. The purpose of pattern recognition is to categorize or classification data or objects of one of the classes or categories. The goal of handwriting is to identify input characters or image correctly then analyzed them to many automated process systems. The development of handwriting is more sophisticated, which is found in various kinds of handwritten characters such as digit, numeral, cursive script, symbols, and scripts including English and other languages. The automatic recognition of handwritten text can be extremely useful in many applications where it is necessary to process large volumes of handwritten data, such as recognition of addresses and postcodes on envelopes, doctor prescriptions, interpretation of amounts on bank checks, document analysis, and verification of signatures. Research in the handwriting recognition field is focused on deep learning techniques and has achieved breakthrough performance in the last few years. Still, the rapid growth in the amount of handwritten data and the availability of massive processing power demands improvement in recognition accuracy and deserves further investigation. Convolutional neural networks (CNNs) are very effective in perceiving the structure of handwritten characters/words in ways that help in the automatic extraction of distinct features and make CNN the most suitable approach for solving handwriting recognition problems. This system will be applied to detect the writings of different formats. | | | |
| **Existing System** | | | |
| * Handwritten Text software is Google Lens and hardware is OCR scanners * In the existing system, they have only recognized either digits or characters with the help of the MNIST dataset. * Trained the model using machine learning algorithms. | | | |
| **Proposed System**   * The aim of our project is to make an model for handwritten text recognition for application in healthcare and personal care that can recognize handwriting using concepts of deep learning. * We will approach our problem using Tensor Flow and OpenCV as they contain Pre-trained Models that are directly used to provide results accurately compared to other methods over such tasks. * This model is used to convert the text into different forms ie, mainly Text documents and Voice files. These files are stored in their respective folder and information can be extracted. * We will mainly use Opensource models for the development of the project. * The architecture of models that we will use is based on NLP. * This NLP architecture has some basic components of data acquisition, processing, and Query and visualization. This text is further converted into the voice. | | | |
| **(i)Functional Requirements:**  The developed system should recognize handwritten text characters present in the image. The system shall show the error message to the user when the given input is not in the required format. The system must provide the quality of service to the user. The system must provide accuracy for text recognition.  **(ii)Non-Functional Requirements:**  Nonfunctional requirements describe user-visible aspects of the system that are not directly related to the functional behavior of the system.  **Performance**: Handwritten text in the input image will be recognized with an accuracy of about 90  **Availability**: This system will retrieve the handwritten text regions only if the image contains written text in it.  **Flexibility**: It provides the users to load the image easily.  **Learnability**: The software is very easy to use and reduces the learning work.  **(iii)Software Requirements :**  Programming Language**:** Python  Tool : Jupyter Notebook IDE or Google Colab  **(iv) Hardware Requirements:**  RAM : 4GB or above  Processor : Intel Core i3 or above  Hard disk space : 120 GB  Operating System : Windows 10. | | | |
|  | Expected Date of completion  10/04/2022 |
| Literature Survey | i) https://www.researchgate.net/publication/298808334  ii)http://ijcsit.com/docs/Volume%207/vol7issue1/ijcsit2016070101.pdf |
| **Modules** | **Expected date of completion** |
| Name of module 1 **Preprocessing** | 20/02/2022 |
| Name of module2 **Segmentation** | 20/03/2022 |
| Name of module 3 **Feature Analysis/Image Info Extraction** | 20/03/2022 |
| Name of module 4 **Results & Analysis** | 10/04/2022 |
| Testing the project | 10/04/2022 |
| Project Report | 12/04/2022 |