Smart Editor

(A Tool for Fetching and Editing Information)

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Abstract:- The current working system is "Cam Scanner", It is a application software that is used for scanning and sharing of documents. Being best at its work Cam Scanner lacks at one thing that is having the functionality of editing the file. Smart Editor is a tool that can be used for fetching and editing information from scanned documents mainly image type. The documents will be scanned and desired result will be obtained. It would basically work on the principle of Optical Character Recognition (OCR). The main aim is to use Document Image Analysis (DIA) to convert documents of physical paper format to digital format which can be later processed/ edited by the user. The scope of the project is that login credentials can be given to the user to make it more secure. Also two-way editing can be made possible only to the authorized users. This tool would also help to decrease the usage of paper, and thus prevent global warming that is mainly caused due to loss of trees as everything would be digitized.

I. INTRODUCTION

In today's era, as everyone prefer to use digital system to save time the demand for the software system to scan and save the documents in systems is increasing. These days there is a huge demand in "storing the information available in these documents into a digital format and then later repurposing this information by searching process". Simple way to hoard information in these paper documents in to computer system is to first scan the documents. Whenever the document is scanned through the scanner ,the documents is saved in image format in system. Sometimes in this document processing we need to process the information that is related to languages other than the English in the world. This process is also called Document Image Analysis (DIA). Thus our need is to develop some text recognition algorithm to perform Document Image Analysis which transforms documents in paper format to electronic format. These images containing text cannot be edited by the user but using our algorithm we can make the text editable.[3] After the advent of digital computers, incorporating human functions to computers has been an interesting and exciting research field [1][4]. For over years, humans have been thinking of machines with the ability to "read" and interpret printed textual documents, so that they can be automatically converted into an alternate medium or format [2][4]. Efficient algorithms have been developed so far so as to enable the machines to recognize characters. Such a system is named as Optical Character Recognition (OCR). Processing scanned documents like bank cheque, PAN cards or any other important documents require access control over certain area for fulfilling security and privacy concerns. Security is the most integral part of our day to day life so security can be ensured by using different techniques such as using OTP(one time password)for giving read and write permissions and provide login page for authorize access.

The Paper is organised in the following manner: The literature review of various reference paper is discussed in section II. The basic idea on how our project would work and how the processing would be handled is explained in section III. The section IV includes results that we are expecting from our final project after completion. And finally everything would be summarized in the section V.

II. LITERATURE REVIEW

The following research articles/study have been selected for review, keeping in mind the different approaches of Optical Character Recognition (OCR) based systems.

Mr. Pratik Madhukar Manwatkar et al [3] proposed a system that had a simple objective to recognize the text from images for better understanding of the reader using particular sequence of different processing module. To achieve this they used different character recognition mechanism to perform Document Image Analysis (DIA), to get a more appropriate scanned image of the textual documents.

Deepa Berchmans et al [4] has discussed many researches that have been going on in the field of Optical Character Recognition (OCR) for the past few decades. Along with the researches they have also discussed various other articles that have been published and have suggested a large number of Optical Character Recogniser (OCR) that are commercially available. They have also discussed a basic working of online and offline recognition of characters.

Bala Mallikarjunarao Garlapati et al [5] proposed an approach to a system that could differentiate between a machine print and a handwritten text at word level using intensity and shape structural features of scanned text. This system was proposed to support the fact that Optical Character Recognition (OCR) based system can be used for the classification of machine printed and handwritten text,

which can be further processed separately to obtain a more accurate results.

III. PROPOSED WORK

In this paper we propose an idea for a more advanced system which in combination to other technologies can produce better results.

The proposed system works on the same basic principle of Optical Character Recognition (OCR). Handwritten or machine printed documents will be scanned using the OCR technique. As the proposed system is planned to work on android based devices, the OCR tool that can be used is an Application Programming Interface (API) by Google Inc, i.e. Google Vision API. It is based on machine learning algorithms to recognise characters efficiently. Google Vision API is a Cloud based API, it is also popularly known as Cloud Vision API. Cloud Vision API enables developers to understand the content of an image by encapsulating powerful machine learning models in an easy-to-use REST API. It quickly classifies images into thousands of categories (such as, "sailboat"), detects individual objects and faces within images, and reads printed words contained within images[6]. To make the text into an editable format, Tesseract an Open Source OCR engine can be used. This text can be copied and can be edited as per the need of the user. For security, a login id will be given to the user which can be used to authorize the user before giving access to the files.

IV. RESULT AND ANALYSIS

This section depicts the entire setup of the Android application, with the outcomes that we are expecting from the proposed system.

From the above proposed system we expect a final result as an Android Application which will be greeted with a login page first to authorise the user and then a UI where the user could see all the files and will also have the option to scan a new document or select an already scanned document and edit it. Then this document can also be shared with others using various social media application or can be mailed as per the wish of the user. This Android application would be working on any smart phone only if the smart phone has an Android version 4.0 and above.

V. CONCLUSION

The system proposed in the paper can efficiently save a large amount of paper consumption. It could also make the task of sharing and editing document easier. This system is completely based on Android. Additional features can be included in the future updates of this system. This system is implemented using the latest technologies and advanced algorithms. It can be optimised further as the field of Artificial Intelligence and Machine Learning in still developing.

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