

Survey on Techniques of Segmentation

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INTRODUCTION

Segmentation of manually written text into lines, words and characters is one of the imperative strides in the HCR framework. Regularly, HCR framework comprises of three phases, to be specific preprocessing, include extraction and characterizations are the three critical stages. Under preprocessing, written by hand text line segmentation and its skew estimation are extremely fascinating and testing errand. This is viewed as vital advance in light of the fact that, off base fragmented text lines and its skew estimation will cause mistakes in creating dependable HCR framework.

Text line segmentation/extraction is a direct procedure in machine printed archives in view of the hole between two neighbouring lines is noteworthy and the lines are sensibly parallel. Be that as it may, the errand of individual text-line segmentation from unconstrained written by hand archives is perplexing in light of the fact that the characters of two sequential text-lines may contact or cover. Additionally, for written by hand reports there exist numerous difficulties. A portion of the difficulties are changeability in skew between various text lines, fluctuating lines, text covering, the presence of characters with various sizes, variable intra-word holes and impact of creator styles and so forth.

LITERATURE SURVEY

Text line segmentation can be generally classified into the accompanying:

Spreading strategies: The thought is to keep running with short white districts which are loaded up with dark pixels proposing to shape expansive dark pixels, which might be considered as text line zones. The constraint of the spreading strategies is that it can't deal with the contacting and covering segments well.

Level projections: This is framed by a vector containing the total of each picture line. The vector's nearby least is thought to be the projection of white locales in the middle of lines, and the picture is divided thus. The fundamental disadvantage of this methodology is that it doesn't function admirably skewed, bended and fluctuating lines. Straight lines in a picture can be recognized utilizing Hough change. The methodology makes a point, balance plane in which the nearby maxima are expected to correspond with text lines, which in the impediment of Hough change in identifying bended text lines.

Base up methodologies: Use of associated parts or pixels which are firmly associated is framed on geometrical criteria to shape text lines. Scarcely any different methodologies can likewise be seen, for example, horrible appealing systems, stochastic techniques and text line structure upgrading [2.11]. Approach by Sanchez et al for text line segmentation in transcribed verifiable reports can be seen in [2.16]. It depends on the processing a white/dark progress guide to accomplish a harsh discovery of the line districts in the picture utilizing change outline. A work

Security and Privacy Challenges Using Multi-Layer Encryption Approaches In Cloud Computing Environments

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Abstract: Among multifaceted useful services offered by Information Technology, the launch of Cloud Computing environment is one of types. But the issues and drawback of cloud computing being that the parameters related to privacy and securities are questionable and pose a threat. Reportedly, because of security issues, there occurs fewer business oriented and real time cloud applications in comparison to applications that are consumer based. Concerning this, providing security and privacy from doubtful vendors also pertaining the cloud manager and service provider is of prime importance. Besides it's also needed to offer real time query outcome to all the authorized users. In this research suggests to the approach of Multi-layer Encryption techniques in cloud computing thus enhancing the security parameters concerning sensitive data Thus with layer ways Encryption technique the data in cloud server can be made more secured with better privacy. Resultant both cloud side and owner of the data gain enhanced security. According to this encryption technique if data-owner's authorization is not granted then the users are restricted from the data access. The strategies proposed are, Symmetric encryption method of the advanced encryption standard (AES) and Asymmetric encryptions method of the Rivest-shamir Adleman (RSA). The cloud applications that are critical can be benefitted from the above suggested algorithm which claims to be simple and efficient. In Symmetric encryption process a single unique key ought to be shared between users who are bound for message receiving whereas in asymmetrical encryption process the encryption and decryption of messages during communication is achieved using both of private and public key. Later the feasibility analysis is carried for above two encryption algorithms responsible for privacy and security of data relating by way of rest of the algorithms.

Index Terms: Cloud computing, Advanced Encryption Standard (AES), Rivest-shamir Adleman (RSA), Asymmetric encryptions, Symmetric encryptions, feasibility, Multi-layer encryption, Decryption, Privacy, Security.

I. INTRODUCTION

With the introduction and benefits of Cloud Computing technology abundant data storage is possible by outsourcing any amount of data on explicit cloud servers. Granting data security remains a major concern in cloud computing as the data is prone to access and threat by cyber criminals. Cloud storage makes use of third party software for storing necessary records, files and data making security of data as of prime concern. The concept of cloud Storage involves storage of data received from any individual or firm that is made accessible from a cloud of various connected and distributed

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resources. Here comes the necessity of authenticating the stored data for providing protective communication across connected and distributed resources. The present paper focuses on managing data or file's privacy and security concerning unreliable parties of criminals, hackers and attackers. Digitalized data is usually stored by the user on cloud, accessing it when the need occurs hence authorization of such data becomes mandatory.

Cloud Computing implements various techniques for securing of its data, two of such algorithms are steganography and attacks cryptography. The cloud suffers from vulnerability because of numerous dynamic factors and huge attack surface. On one end the cyber criminals invent different strategies for attack while at the other end researchers put effort in building up preventive measures against vulnerabilities. Being aware of the new risks and attacks associated with security the policy must also be timely and frequently updated. Primarily the risk of attack is confronted by cloud service provider and the cloud manager. In the threat to predict the attacks of cloud based on a multi-layer security algorithm is used.

The prime focus being managing data or file's privacy and security concerning unreliable parties of criminals, hackers and attackers alongside risk associated with cloud manager and cloud service providers. Also the focus extends to granting real time query output to authorized users. In this paper proposed approaches of Multi-layer Encryption Approaches for increase security of sensitive data in cloud computing. To achieve the data security and privacy on cloud server, in proposed Multi-layer encryption methods. Thus with Multi-layer ways Encryption technique the data in cloud server can be made more secured with better privacy. Resultant both cloud side and owner side from data gain enhanced security. According to this encryption technique if data-owner's authorization is not granted then the users are restricted from the data access. The approach makes use of Symmetric encryption scheme of the advanced encryption standard (AES), analyzing various processes and security parameters responsible for the designing and implementation of popular and known symmetric encryption algorithm namely Advanced Encryption Standard. Advanced Encryption Standard (AES) acts as a block cipher related symmetric-key cryptography safeguarding sensitive data. AES key sizes are being 128, 192, 256 bits. Substitution-Permutation technique is the one on which AES relies upon. Asymmetric encryptions scheme of the Rivest-shamir Adleman



Robotic Handwritten Kannada Character Recognition using Neural Network

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Abstract: Data preparing and the board is basic now a days. In this paper, programmed preparing of structures written in Kannada language is considered. A reasonable pre-preparing procedure is introduced for separating written by hand characters. Essential Component Analysis (PCA) and Histogram of arranged Gradients (HoG) are utilized for highlight extraction. These highlights are sustained to multilayer feed forward back spread neural system for arrangement. Just 57 characters are utilized for acknowledgment. Exhibitions of two highlights are looked at for changed number of classes. Hoard is found to have preferred acknowledgment exactness over PCA as number of classes expanded. This is actualized in Visual Studio 2010 utilizing Open CV library.

Keywords : Back Propagation Neural Network, Form Processing, Histogram of Gradients, Kannada Script, Principal Component Analysis.

I. INTRODUCTION

The robotization of transcribed structure preparing is drawing in concentrated research enthusiasm because of its wide application and decrease of manual work. In Indian setting, numerous associations will gather the information on paper based structures. Programmed handling of these structures is a procedure of catching the data put away in the structures and changing over it into electronic (machine coherent) group. Written by hand character acknowledgment massively to the progression of robotization process. This is grouped into disconnected and online acknowledgment. For Automatic Form Processing (AFP) disconnected acknowledgment technique is utilized since it includes programmed change of content in a picture into letter codes which are usable inside PC and content handling applications [1]. AFP incorporates total output of a structure utilizing scanner. The filtered picture at that point experiences different pre-handling activities, character division and acknowledgment of written by hand characters. India is a multi-lingual and multi-content nation containing eighteen authority dialects, Kannada is one among them. A few works has been improved the situation the acknowledgment of written by hand Kannada characters. The major pre preparing ventures of AFP incorporates edge identification, morphological tasks to make it reasonable for division. Division isolates the picture content archives into lines, words and the characters. Thungamani M and RamakanthKumar P [2] talk about two division strategies, for example, established methodology and all-encompassing methodology. In established methodology, the info picture is fragmented into sub pictures. In all encompassing

methodology, the characters are perceived without analyzation. Mamatha H.R and Srikanatamurthy K [3], proposed a division conspire utilizing projection profiles. Morphological activities are utilized to evacuate the commotion. After this content lines are removed utilizing flat projection profile, words and characters are separated utilizing vertical projection profiles. India is a multi-lingual and multi-content nation involving eighte authority dialects, Kannada is one among them. A few works has been improved the situation the acknowledgment of written by hand Kannada characters. The major pre handling ventures of AFP incorporates edge location, morphological tasks to make it appropriate for division. Division isolates the picture content records into lines, words and the characters. Thungamani M and RamakanthKumar P [2] talk about two division procedures, for example, traditional methodology and all encompassing methodology. In established methodology, the information picture is portioned into sub pictures. In comprehensive methodology, the characters are perceived without analyzation. Mamatha H.R and Srikanatamurthy K [3], proposed a division plot utilizing projection profiles. Morphological activities are utilized to evacuate the commotion. After this content lines are removed utilizing level projection profile, words and characters.

There are different sorts of division plans, out of which the morphological tasks and certain commotions are to be expelled which character perceiving through picture division process, since the characters are composed writings with letters in order, words, sentences and lines of the content. So regularly these things are portioned independently to make it plausible to the character to be perceived. Hence it is important to make the characters to make it conspicuous which is done through picture division. Consequently after the writings are being extricated it must be anticipated. This is finished utilizing neural system ideas.

Kannada content has substantial number of character set. This may decrease the acknowledgment precision and increment the computational expense. To maintain a strategic distance from this issue a calculation has been proposed to diminish image set [4], where the vowel modifiers (kagunitha) and consonant modifiers (vattakshara) which are not associated with base characters are considered as discrete classes. Devanagari content has comparative attributes as Kannada content like vowel modifiers, consonant conjuncts and so forth,. The acknowledgment of this content comprises of three stages: division, disintegration, i.e., breaking down a composite character into base part and modifier parts; and acknowledgment [5]. Just little subsets of compound characters (upper and lower signs) are considered for the acknowledgment. Numerous Arabic letters additionally share normal essential shapes, which contrasts just in the quantity of dabs and the dabs or above or

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Unconstrained Handwritten Text Line Segmentation for Kannada Language

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Abstract: Segmentation is division of something into smaller parts and one of the Component of character recognition system. Separation of characters, words and lines are done in Segmentation from text documents. character recognition is a process which allows computers to recognize written or printed characters such as numbers or letters and to change them into a form that the computer can use. the accuracy of OCR system is done by taking the output of an OCR run for an image and comparing it to the original version of the same text. The main aim of this paper is to find out the various text line segmentations are Projection profiles, Weighted Bucket Method. Proposed method is horizontal projection profile and connected component method on Handwritten Kannada language. These methods are used for experimentation and finally comparing their accuracy and results.

Keywords : Projection profiles, Weighted Bucket Method, horizontal projection profile and connected component method, Segmentation, Preprocessing

I. INTRODUCTION

A document is considered as a structure it contains information. the document is not in a proper structure it is very difficult to get back the information. Document structure is a essential stage in character recognition. Handwritten Kannada documents main challenges are overlapping lines, touching lines, curved lines, additional modifiers, consonants, intra and inter word gaps. The objective of this paper is to investigate different text line segmentation using the following methods. Projection profiles, Weighted Bucket Method. Proposed method is horizontal projection profile and connected component method Then these methods are applied on Handwritten Kannada documents.

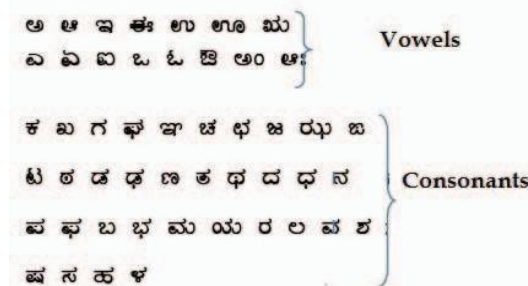


Figure 1: Kannada language 49 phonemic letters

II. KANNADA SCRIPT

Kannada is a Dravidian language mainly used by the people of Karnataka, Andhra Pradesh, Tamil Nadu and Maharashtra. Kannada is spoken by about 44 million people. The language has 49 characters in its alphabet set (15 vowels and 34 consonants). This gives total of $(544 \times 34) + 15 = 18511$ distinct characters, samples of extra modifiers shown in the Figure 3.

ಕ ಕಾ ಕಿ ಕೀ ಕು ಕೂ ಕೃ ಕೃ ಕೇ ಕೈ ಕೊ ಕೋ ಕೌ ಕಂ ಕಃ

Figure 2: sample of Kannada modifier glyphs(Diacritics)

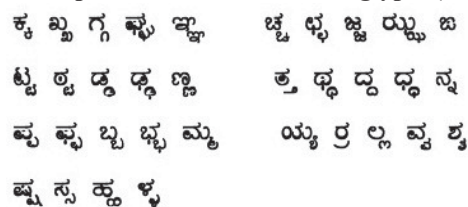


Figure 3: Consonant conjuncts in Kannada (vattakshara)

III. DIFFICULTIES IN TEXT LINE SEGMENTATION

There are three difficulties in segmentation of text line such as text line components, influence of author style, influence of poor image quality.

A. Text line components

Baseline: Imaginary lines are connected below the character bodies of Text consisting of a row of words written across a page as shown in figure 4.

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Deskewing Method for Unconstrained Handwritten Kannada Language Leading to Text line Segmentation and its Skew Estimation

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Abstract: Segmenting text-lines for handwritten Kannada document plays an important role in Human Character Recognition System. Segmentation is the method for extracting text lines, words and characters. Segmentation accuracy depends on segmentation phase, incorrect segmentation leads to false recognition. Handwritten document image is taken as dataset for this approach. In the proposed system, text segmentation analysis is done for handwritten document in which extracting text lines, words and characters are done and skew correction is done based on Enhanced Skew Detection and Correction for Words (ESDCW) algorithm for estimating and correcting skew lines. The algorithm considers the height and width of the entire handwritten word. Apparently, there must be a minimum value for the height of any word and maximum value for the width of any word in case of no skew. Once skew is corrected with approximate skew angle repetition of the same process, only busy zone is considered for performing precise skew correction. The preprocessing is done using the following methods: (i) filtering (ii) gray scale conversion and (iii) Binarization. The proposed system recommends preprocessing, dilation and labeling of associated components of input image, deskewing of words associated with a text line and inserting words to the new image. Thereafter there is extraction of words that are identified which are then stored in a new image. The unwanted information is carefully removed during extraction of words using the bounding box technique at the same time avoiding overlapping of words while storing in a new image file. Test was carried out on fully unconstrained handwritten Kannada documents which yielded an average segmentation rate of 96.38%.

I. INTRODUCTION

The HCR (Handwritten Character Recognition) process basically identifies characters that are by the writers. It involves the significant step of segmentation wherein the handwritten text is transformed into lines. Handwritten text is of two types: first is the offline HCR (Handwritten Character Recognition) wherein the writers make use of pen/pencil to write on papers. The second type of HCR is of online type wherein the writers makes use of certain digital tool like electronic pen for writing. Apparently, handwriting recognition is quiet tough because of extremely vast variation prevailing in various handwriting styles of different individuals. In past few years, a variety of machine learning techniques have been incorporated for building procedures concerning to both offline and online HCR such as the SVM (Support Vector Machines), Gaussian Mixture Models, ANN (Artificial Neural Network), Fuzzy Logic etc.

The HCR system must comprise of the below features:



SECURE CLOUD BASED DATA ANALYTICS WITH RELIABLE PRIVACY PRESERVATION FOR EHEALTH DATA

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ABSTRACT

The drastic and latest enhancement in digital technology has uplifted the healthcare sector by introducing the concept of electronic patient record maintenance. There is enormous volume of information pertaining to healthcare sector which being complex, secured, suitable and responsible for further data processing. That is the electronic health related information needs to be processed and sustained in order to provide enhanced services to the individual's lives. Maintaining and monitoring such healthcare information via digital platform offers a wide spectrum of benefits along with offering resolutions to various hurdles and challenges that is being confronted by this domain. In contrast to data gathered from professional healthcare service providers, data that is composed with the help of cloud from e-healthcare devices is of utmost significance. Though there exist various security threats during sharing of such critical health care information viz misuse or leakage of privacy and access controls. In addition, achieving effective data analysis and services can possibly be tough. Present paper put forth robust cloud-based data analytics for the benefit of e-healthcare mechanism that safeguards privacy and offers reliability. Moreover, the proposed system offers effective reliability and data integrity pertaining to shared e-health information that resides within cloud storage. Thereafter, by the means of AI (Artificial Intelligence), Data integrity and Traceability can be obtained through privacy-preserving with respect to the shared e-health information within the cloud. The proposed approach offers and assures data privacy, reliability, public audibility, traceability and identity privacy of healthcare data in a cloud environment.

Key words: e-health, Cloud environment, Data integrity, Traceability, Privacy, Security, Data analytics.

ENHANCED TEXT LINE SEGMENTATION AND SKEW ESTIMATION FOR HANDWRITTEN KANNADA DOCUMENT

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ABSTRACT

Abstract. When Handwritten Kannada document undergoes text line segmentation, the process is referred to as Text line segmentation and skew correction. This is quite essential for the HCRS (Human Character Recognition System). The process of text line segmentation and skew estimation tends to be quite challenging during document analysis. The proposed system presents improvised text-line segmentation along with skew estimation for which the handwritten Kannada document forms the dataset. Following are the three methods for carrying out preprocessing, namely: (i) filtering (ii) gray scale conversion and (iii) Binarization. The ESLD (Enhanced Supervised Learning Distance) algorithm is being adopted for the assessment of distance amidst text lines and G_Clustering aids in grouping of words or the Connected Components. Also, by computing skew angle with respect to the gap, Skew estimation can be performed. It's elucidated from the output that the proposed system exhibits higher performance.

Keywords: *Segmentation, Skew Correction, Filtering, Gray Scale, Binarization.*

1. INTRODUCTION

The process of Handwritten Character Recognition helps in the identification of characters written by the writers. The most important process in HCR is the segmentation wherein text is transformed into lines. There are two types of handwritten text: first being the offline HCR which means that the writers utilize pen/pencil for writing on papers. The second is the online HCR which means that the writers utilize digital tools like the electronic pen and all for writing purpose.

Since different individuals have varying writing styles, handwriting recognition becomes quite a tedious task. Many sorts of machine learning techniques are being employed and implemented for procedures pertaining to offline and online HCR which includes the SVM (Support Vector Machines), Gaussian Mixture Models, ANN (Artificial Neural Network), Fuzzy Logic etc.

Following are the different types of features an HCR system must include:

1. *Flexibility:* this particular feature must take into account different sorts of writing patterns from different people.
2. *Customization:* The handwritten styles of any writer must be easily comprehended by the OCR.
3. *Efficiency:* Online HCR systems should have good efficiency pertaining to time and space.
4. *Automatic Learning:* The OCR system must be trained via automatic learning mechanism so that the customization feature can be enabled.

The text-based recognition system comprises of a significant process of Segmentation which works on separating text lines, words and finally the characters thus ensuring effective classification and recognition. The output obtained from the segmentation phase highly ensures the character recognition's accuracy. Because of incorrect segmentation there can be an issue of false recognition. There exist numerous approaches which caters to printed text segmentation and handwritten text segmentation too. Printed text

COMPARISON BETWEEN KANNADA AND ENGLISH HANDWRITTEN WORD RECOGNITION BY USING NEURAL NETWORKS

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ABSTRACT

Handwritten character recognition is a complex task because of various writing styles of different individuals. Our Method yeilds good classification accuracy on handwritten characters, apart from complexity. Normalization and binarization are the pre-processing techniques used for getting accurate results of classification process in handwritten character recognition.

Keywords: Handwritten Word Recognition, Kannada and English, Neural Networks

I. INTRODUCTION

Kannada is a dravidan language, mainly used by peoples of Karnataka, Andrapradesh, Tamilnadu and Maharastra. Kannada is spoken by 48 millian peoples, The Kannada alphabets were developed from the Kadamba and Chalaukya scripts, descendants of Brahmi which were used between the 5th and 7th century A.D. The basic structure of Kannada script is distinctly different from Roman script. Unlike many North Indian languages, Kannada characters do not have shirorekha (a line that connects all the characters of any word) and hence all the characters in a word are isolated. This creates difficulty in word segmentation. Kannada script is more complicated than English due to the presence of compound characters. However, the concept of upper/lower case characters is absent in this script.

Kannada has 49 base characters, called as Varnnamale as shown in Figure.1.1 comprising 15 vowels, 34 Consonants. consonants modified by all the 15 vowels. Such consonant-vowel combinations are called live consonants (gunithakshara or diacritics) as shown in Figure 1.2.

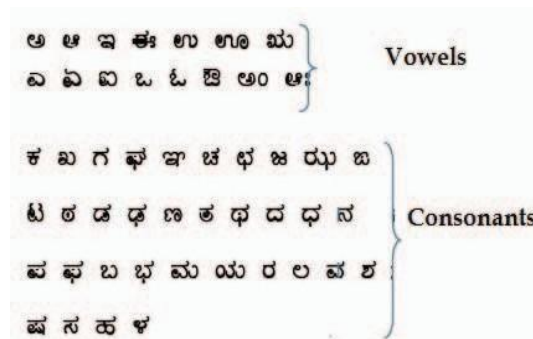


Figure 1.1:Kannada Language 49 Phonemic Letters



A LAND USE LAND COVER MAP GENERATION OF SATELLITE IMAGE USING DEEP LEARNING TECHNIQUES.

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Abstract

Land use land cover (LULC) usually alludes to the assortment and cataloging of certain activities carried out by humans together with the natural elements on the land. Sentinel satellite images are meant to obtain optical images at high spatial resolution say of about 10m. In this paper, LULC map generation approach using Sentinel satellite images is proposed. Our objective is to classify the entire sentinel image to generate LULC map, which can be further used for predictive analysis. Here, we have used three predominant bands namely NIR, Red and Green to classify the sentinel data with five classes namely Water, Forest, Vegetation, Urban and Open land of silicon city of India. For the proposed dataset, an inclusive exactness of 95% was achieved with neural networks and various deep convolutional neural network architectures.

Keywords: Sentinel images; deep learning Neural Networks; LULC; CNN.

1. Introduction

Remote sensing is a common technique for gathering data about the Earth's resources and patterns of use. Information is captured without having any physical contact by sensing and recording reflected or emitted energy. This reflected energy is then sent to remote centers and further processed and finally converted to images. The broad division of sensors include passive and Active. Passive Sensors do not have its own source of illumination, they use sunlight to generate energy. Hence they can capture data only during day time. Unlike passive, active sensors have their own source of illumination like microwave, electromagnetic radiation and can be captured at any time. [1]. But Passive sensors are more feasible than active. The following Figure 1 shows how energy is generated by both active and passive sensors.



An Efficient Prototype for Credit card Fraud Detection using Machine Learning

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ABSTRACT

As, the numbers of hackers have increased, credit card fraud cases have incredibly increased. Therefore it is crucial to find a solution to this issue or crisis. In this project, a customer's credit card transactions are masked using Principal component analysis (PCA) and the data classifier algorithms are applied to analyze whether a transaction carried out is fraudulent or not. Once the data values are processed, they are modeled using machine learning algorithms. Performance is compared between these modeling algorithms using test parameters or few metrics.

KEYWORDS: Credit card fraud detection, Machine Learning, PCA

1. INTRODUCTION

Credit cards provide cashless transactions which helps the customers to carry out hi/her purchases in a much easier manner. As per the survey carried out in the year 2021, nearly or around 62 million credit cards were used in India alone. Fraud detection is a set of tasks performed to prevent either money or property from being obtained through false illusion.

Advantages of credit cards:

- 1) They provide cashless transaction
- 2) Growing admiration for e-marketing
- 3) They provide unlimited reward points

advantages of machine learning includes it provides continuous improvement based on the data provided

which can be used to improve credit score based on which enormous

Discounts for shopping become available.

The confrontations faced in credit card fraud detection includes the inaccessibility to the data in real time, the unstabilized set of data and the measurements with respect to the data set, parameters used for evaluation and finally the behavior of fraudster which is found to be dynamic over time.

Machine Learning is the recent trends in technology which authorizes computers to be self taught from the data which has been trained and improved over time without the need to be programmed. Various by the users, helps us choose appropriate algorithms, helps in collecting and analyzing data and so on.

HAND WRITTEN TEXT RECOGNITION BY IMAGE PROCESSING

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ABSTRACT

Detection of image forgery is one of the essential and very useful concept in digital forensics and has captured everyone's attention in the past few years. Early researcher's has been determined about pattern noise, wavelength transform, image pixel value and other features of images to validate the primordial nature. From recent days with the help of neural network technologies, some convolutional neural networks has been developing hardly to achieve high-level forgery image detection and image representation. This paper proposes to build an convolutional neural network, in which we try to understand extracted features from each convolutional layer and through automatic feature learning it detects different types of image tampering. The proposed network necessitate five convolutional layers, a Softmax Classifier and two full connected layers. Our examination has utilized CASIA v1.0, a public image set which consists of splicing images, authentic images and its further reformed versions containing re-touching and re-compressing images as the training data. Our experimental results can give a clear picture of demonstrating the effectiveness and adaptability of the proposed network.

Keywords-digital forensic, image forgery, tempering detection, convolutional neural network

I. INTRODUCTION

Humans have constantly and continuously been involved inworking towards making their lives in better phase. Technology is the major part of that, wherein the humans are continuously putting their efforts to improve both user experience and performance complex tasks. In order to achieve that in very short period of time. Coupled with this, the internet penetration has increased by leaps and bounds. Since the inception of the World Wide Web [WWW], the number of users of the internet has been increasing at a striking rate. Corresponding to this increase, a lot of data has been digitized. This digitization has permitted a flawless transmission of data in various forms. This further permit us to extract a ton of data in very short period of time efficiently. When one has digital data then he can manipulate it according to one's requirement and can arrive at results, where this action in the early days has need a lot of time but now it is all about a matter of seconds.

Converting handwriting to digital data can be characterized into the above category. This conversion opens a innumerable of avenues for us and it can have its own wide range of applications. It is important for the converted data to be in the form of detectable and understandable format, for the user to be able to make full use of the data. Hence, this paper has converted it into a digital text which is fairly easy to understand. Using optical character recognition (OCR), it aims to achieve this task. A Neural Network (NN) model is devised to be trained on the dataset. This neural network model will involves in various layers as

discussed in detail further ahead.

The image of the word which we given will act as the input to the entire model and pass through the several layers, in the end to come out as digital text data. Since the data-set chosen is a fairly exhaustive one, the training will also be fairly sufficient to keep the accuracy of the model

1.1 Purpose

In the future there are many developments can possible in this system . As of now the system can't recognize cursive handwritten text. But in future it can recognize cursive text by adding required support to it. Currently our system can only recognize text in English languages. In the future ,we can add support for more languages. currently the system can only recognize letters and digits. We can add support for recognition of Special symbols in the future. Some of the applications are Processing of cheques in Banks, helping hand in Desktop publishing, Recognition of text from business cards, Helping the blind in recognizing handwritten text on letters.

1.2 Motivation

From recent days the people tend to fallow paperless environment and they are more attracted to fallow the digitized system. Recognizing hand written text is a very easy task for humans but where as for computers it is very hard to detect what is their in the paper. The OCR engine process on the image data and convert it into a text. The technology

KANNADA HANDWRITTEN WORD RECOGNITION USING R_CLUSTERING AND SUPERVISED LEARNING DISTANCE TECHNIQUES

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ABSTRACT

Handwritten text line segmentation is regarded as an important test in record picture evaluation. The difficulty in today's printed text, Skewed lines, curved lines contacting and covering components, generally words or characters, among lines, and geometrical features of lines. The difficulty involved in segmenting Handwritten Documents for Indian dialects are Telugu, Tamil, and Malayalam. Manually written archives with bended and non-parallel text lines also perform segmentation and recognition testing. This work considers text line segmentation of manually authored Kannada content records using ICA.

In this preliminary step, the authors provided an improved approach for manually written content line division to the proposed technique. The proposed system includes improved text-line segmentation as well as skew estimation and the dataset is a handwritten Kannada document. The preprocessing approaches are: (i) Filtering, (ii) Grey scale conversion, and (ii) Binarization. The ESLD method is used to estimate distance between text lines and R Clustering aids in word grouping or the Connected Components. Skew estimate can also be achieved by determining the skew angle with respect to the gap. The output demonstrates that the proposed system out performs the competition.

Keywords: Preprocessing, Grey Scale Conversion, Binarization, Textline Segmentation, Skew Detection, Correction.

INTRODUCTION

The HCR (Handwritten Character Recognition) method normally identifies writers' identities. It includes the crucial phase of segmentation, in which the handwriting text is converted into lines. Handwriting text is classified into two types: offline HCR (Handwritten Character Recognition), in which writers use a pen/pencil to write on material, and online HCR (Handwritten Character Recognition). The second sort of HCR is online, in which the writers utilise a digital device, such as an electronics pen, to create. Apparently, handwriting identification is quite difficult due to the tremendously wide variety in diverse handwriting practices of different people. In recent years, a range of machine learning approaches, such as SVM, Gaussian Mixture Modeling, ANN, Fuzzy Logic, and others, have been combined for developing algorithms for both offline and online HCR. The HCR technology must include the following features:

- **Flexibility:** This means that the system must be able to handle any type of writing variation including a large number of different people's character patterns.

An Imperative Framework for prognosis of Parkinson's disease using Machine Learning

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Abstract: Parkinson's disease is related to movement disorder disease wherein it affects the central nervous system which in turn affects the motor system. The diagnosis of this disease might pose a rigorous task as the symptoms can be similar to any other medical conditions or might also be due to ageing. In this paper an efficient framework is proposed wherein voice parameters or vocal frequencies are used as attributes with XGBoost algorithm being used as the classifier. Based on the values obtained, whether a person has Parkinson's disease or not can be diagnosed. The proposed framework might be effective for further implicit diagnosis.

Keywords: Parkinson's disease, XGBoost classifier, vocal attributes

Parkinson's disease is an autonomic disorder wherein body tends towards uncontrollable or unmanageable movements like shivering, stiffness and inability to balance together with co-ordination.

Symptoms seem to be acute during the initial stages but worsen as time progresses. A person with Parkinson's disease may face problems like walking with difficulty or even talking during the advanced stages.

They may even exhibit several behavioral changes. They might even face insomnia, depression and memory difficulties. As per the survey conducted men are more prone to this disease than women. This disease is usually found in people above 60 years of age. Only around 5

1. INTRODUCTION