

Optical Character Recognition Techniques: A survey

REVIEW

Text may be extracted from photos and documents using optical character recognition (OCR) algorithms. We give an overview of the many OCR methods that have been created and used recently in this article. In order to recognise characters, preset character templates were compared with the input image in traditional OCR techniques. Due to their sensitivity to differences in text sizes, font styles, and noise levels, these methods, however, had little effectiveness. Modern OCR methods use machine learning algorithms, particularly deep learning models, which have completely changed the industry, to get beyond these constraints.

Character recognition tasks have shown to be a strong suit for Convolutional Neural Networks (CNNs). They work by picking up distinguishing traits from the input photos, which enables them to deal with variances.

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OPTICAL CHARACTER RECOGNITION – A Review

REVIEW

With or without the aid of machines or computers, ocr research has recently gone to the next level of comprehension. All photographic pictures have been modified into a format that is simple to grasp and independent of handwriting styles for the approaching centuries as a result of the global development of digital libraries. With the use of ANN and AI, OCR changes the document in order to boost system training and raise accuracy. Due to varied writing styles and character sets for many languages, the ocr must utilise a variety of recognition algorithms, including Character Normalisation, Correlation, Neural Network, Recognition, Hidden Markov Model, and Correlation approach.

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Feature Extraction Of Optical Character Recognition: Survey

REVIEW

The present state of the OCR's craftsmanship shifted from crude character set planning for confined character sets to the usage of more sophisticated Omni-text style and recognition of the imprint. The division of degraded pictures that are connected or divided seems to be the main source of OCR problems. In general, the input's characteristics directly affect how accurate an OCR framework is. Right grouping rate, dismissal rate, and error rate are the three metrics used to evaluate OCR frameworks. The error rate of the system should be used to gauge performance since these errors go unnoticed by the system and need to be physically located for rectification.

Evenif there have been more calculations made for character acknowledgement, the problem is still not fully understood, especially in cases where there are no hard limitations on the handwriting or type of print. No acknowledgement calculation has yet been able to match the guy in quality. In any event, the OCR machine is continually improving since it can read much more quickly.

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A Literature Survey on Character Recognition of Indian Scripts for New Researchers

REVIEW

Handwritten character recognition is usually a main topic of research in the science of pattern recognition after printed character recognition. Only a very small number of experiments have been conducted on handwritten character recognition, mostly for the south Indian Devanagari scripts, despite the fact that substantial research has been done on international scripts like Arabic, Chinese, and Japanese.

The development of OCR systems for Indian script has a wide range of applications, including banking, libraries, the preservation of manuscripts and historical writings written in various Indian scripts, and the creation of digital document libraries. Character recognition involves two crucial steps: feature extraction and classification, both of which have an impact on the system's overall accuracy. This review illustrates the development of character recognition using digital image processing methods such feature extraction, classification, picture restoration

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An Optical Character Recognition Research

REVIEW

OCR (optical character recognition) is a technique for turning pictures to Arabic. converting documents with Arabic content into editable format. A straightforward method for Arabic OCR is described in this paper, and the suggested technique is correlation and dynamic-size windowing to distinguish between Arabic letters and partition them. Arabic letters of various sizes may be recognised using the suggested coherent template recognition approach. Results of recognition demonstrate how reliable the suggested technique is. This study proposes an Arabic OCR method based on templates. The suggested approach uses correlation and dynamic-size windowing to segment and recognise Arabic letters, and it can distinguish between Arabic characters of various sizes. The recognition accuracy is 96%.

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OPTICAL AND INTELLIGENT CHARACTER RECOGNITION SYSTEM

REVIEW

In this study, OCR, handwriting recognition software for both online and offline use is being developed.

OCR, or optical character recognition, is the mechanical or electrical conversion of images of handwritten or typewritten material (often captured by a scanner) into content that can be edited by a computer. OCR is a branch of study that includes computerised reasoning, machine vision, and example acknowledgment. The term "handwritten recognition" is most frequently used to refer to a computer's capacity to convert handwriting into text. One of the two methods for doing this is either scanning printed text or directly writing on peripheral input devices. They are currently putting into practise software that will identify the characters in an online or offline document and utilise them to create a unique user profile.

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Y. Tang ,Y. Wang , and A. Furuhashi ,“CNN Based Transfer Learning for Historical Chinese Character Recognition,” in Proceedings of the 12th IAPR Workshop on Document Analysis Systems.

A Review on the Various Techniques used for Optical Character Recognition.

REVIEW

In the recent years, one of the most fascinating and difficult study areas in the fields of image processing and pattern recognition has been handwriting recognition. The methods for transforming text from a paper document into machine-readable form are discussed in this work. Optical Character Recognition is a ground-breaking method that the computer uses to recognise the characters in the text. This study reviews a number of methods, including OCR employing neural networks and the correlation approach.

The use of neural networks and correlation in a number of optical character recognition methods has been studied. Other significant developments in optical character recognition are also being worked on.

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A Survey on Optical Character Recognition Techniques

REVIEW

OCR techniques have undergone remarkable advancements due to the integration of deep learning models, availability of large-scale datasets, and innovations in preprocessing and augmentation. These techniques have significantly improved accuracy, robustness, and the ability to handle multiple languages and complex document structures. As OCR continues to evolve, it holds tremendous potential for numerous applications, including document digitization, text extraction from images, and accessibility enhancements for visually impaired individuals.

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Optical Character Recognition using Deep Learning: An enhanced Approach

REVIEW

Deep learning algorithms and an improved approach to OCR have revolutionised the area by overcoming the problems with character recognition. OCR systems improve accuracy and resilience by making use of deep learning techniques including CNNs, RNNs, attention mechanisms, data augmentation, and preprocessing. The upgraded OCR technique has great potential for a variety of sectors and advances text extraction technology thanks to its broad range of applications.

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Optical Character Recognition Errors and Their Effects on Natural Language Processing

REVIEW

A crucial piece of technology that makes it possible to convert printed or handwritten information into digital form is optical character recognition (OCR). OCR systems, however, are not error-free and frequently make mistakes when doing recognition. In this paper, we investigate how OCR mistakes affect Natural Language Processing (NLP) tasks and talk about the difficulties they provide.

The performance of many applications is hampered by noise and inaccuracy introduced by OCR mistakes, which have a substantial influence on NLP activities. Creating solutions to lessen their impact requires a thorough understanding of the many types of OCR mistakes and their repercussions. We may lessen the consequences of OCR faults and raise the dependability and efficiency of NLP systems by enhancing OCR accuracy, implementing error correction methods, and using cutting-edge NLP models. The accuracy of text categorization models can be hampered by OCR mistakes. The performance of sentiment analysis, topic categorization, or spam detection systems may be adversely affected by misinterpreted or missing characters that lead to misclassification or misunderstanding between similar terms. Accurate recognition of items, such as names, dates, locations, and numerical values, is crucial for information extraction activities. Inaccuracies and semantic distortions in the retrieved information might result from OCR mistakes that add erroneous or missing characters in these entities.

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