REVIEW ON DATA VISUALIZATION AND PREDICTION USING MACHINE LEARNING TECHNIQUES

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Abstract: The paper is about optical character recognition with image processing and machine learning techniques. The machine learning technique is the core part of this model. Optical character recognition which reads each character through image. here in proposed system our application is designed to work on multiple application like for college, shops, hospitals, ect. by using the smart phone it need to capture real time image of name of place and then this application will extract text from image and predict the match data using different machine learning technique and search for information related to respected place and get entire details.

Most of the people in our country love to travel, shopping, etc. and it is commonly seen that we don't have information about some places so it is difficult to ask any person about some place because of language barrier or may be any other problems. As the solution of this problem, we are developing an web application that will help user to get out details of any place such as college, shop, mall, hotel, restaurants, ctc.

Index Terms – **Optical Character Recognition, Machine Learning, Image Processing.**

I. INTRODUCTION

Nowadays all over digitization technology is used. Text Recognition usually abbreviated to OCR, involves a computer system designed to translate images of typewritten text (usually captured by a scanner) into machine editable text or to translate pictures of characters into a standard encoding scheme representing them. OCR began as a field of research in artificial intelligence and computational vision. Text Recognition used in official task in which the large data have to type like post offices, banks, colleges etc., in real life applications where we want to collect some information from text written image. Machine replication of human functions, like reading, is an ancient dream. However over the last five decades, machine reading has grown from a dream to eality. Optical character Recognition has become one of the most successful applications of technology in the field of pattern recognition and artificial intelligence. Many commercial systems for performing OCR exist for a variety of applications, although the machines are still not able to Complete with human reading capabilities. Optical character recognition is needed when the information should be readable both too human and to a machine. Both hand written and printed character may be recognized. Optical character recognition is performed off line after the writing or printing has been completed, as opposed to on line recognition where the computer recognizes the character as they are drawn. OCR method for recognizing documents either printed or handwritten without any knowledge of the font. we discuss different technologies for automatic Identification and establish OCR's position among these techniques. The next chapter gives a brief overview of the historical background and development of character recognition. We also present the different steps, from a methodical point of view, which have been employed in OCR. An account of the wide area of applications for OCR is given in next chapter and in the final chapter we discuss the future of OCR. A typical OCR system consists of several components. a common setup is illustrated. The first step in the process is to digitize the analog document using an optical scanner. When the regions containing text are located, each symbol is extracted through a segmentation process. The extracted symbols may then be reprocessed, eliminating noise, to facilitate the extraction of features in the next step.

II. RELATED WORK

1. D. Conroy studied and explained the role of the signage in businesses and organizations ji et al. The goal of learning and recognition of OPSs in real-world images can be shows as a problem of object recognition and localization. Firstly, understand the value of OPS, the importance of signage in the business community

2. E. Nwark Chandrasekhar et al shows that for random sampling gives equal or better classifiers, Bag-of-features technique used for content based image classification gaining to their less complexity and good performance. than the sophisticated multi-scale interest operators that are in common use representative selection.

3. W. H. Cheng.et.al introduced a novel framework for video adaptation based on content re-composition. The objective was to provide effective small size videos which intentioned the important aspects of a scene while faithfully retaining the background context. A generic video attention model was developed to extract user-interest objects, in which a high-level combination strategy was proposed for fusing the adopted three types of visual attention features.

4. J. Harel et al introduced a new visual model named as Graph-Based Visual Saliency (GBVS). It contains of two steps, first is creating activation maps on certain feature channels, and second is normalizing them in a manner which highlights clearness or brightness and to recognize combination with other maps. This model is less complex and biologically acceptable as it is naturally parallelized.

5. Conroy et al to discover association rules at multiple resolutions in order to identify frequent spatial configurations of local features that correspond to classes of logos appearing in real world scenes spatial pyramid mining technique is used Since there are hundreds and thousands of different OPSs in use nowadays, it is infeasible to collect all the visual templates in advance. In response to this problem, several research projects devised approaches to detect texts.
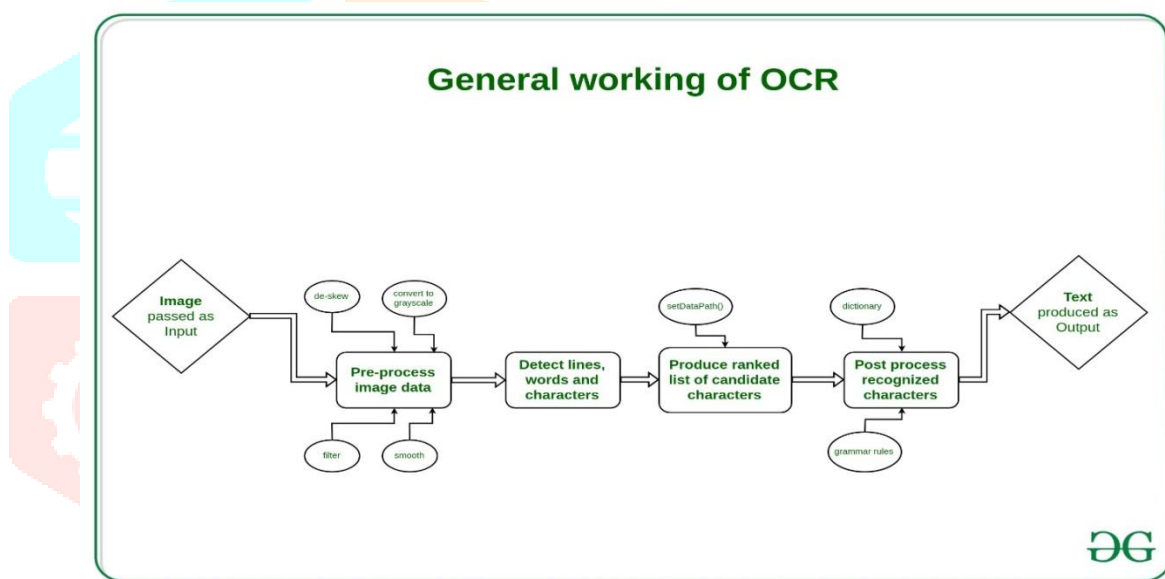
The mobile device is computing cquipment used to connect with the world for various purposes. Users depend on mobile device to maintain information and update. on premises signs shows great visual diversity accompanied with complex environmental conditions. Consider an example, user walk on the street and he simply point his mobile camera to a store to quickly access its related information, inquire special offers, and make reservations through his mobile without physically entering on that store. Street view scenes are commonly captured by customers devices and they have more real-world characteristics lacking in most existing image datasets, e.g. perspective distortion, foreground and background clutter, etc. To learn a reliable model for recognizing place names, a labeled dataset with a huge amount of real- scene images is required. However, precisely labeling categories and regions, 1.e., generating strong labels for Learning involves a significant amount of human labor, and thereby is usually not feasible for training a real-scene model. Instead of generating strong labels for real-cene images, an alternative learning technique, with the category it contains, i.e., a weakly labeled image. To create a recognizable image for a business to attract customers, each business has its own which is a visually.consistent image for a brand and contains a mixture of text and graphics Conroy et al. Therefore here, proposed a probabilistic framework for learning and recognition of OPSs in real-world images. Real-world characteristics, such as viewing angles, arbitrary size, occlusions, varying lighting conditions, foreground and background clutter, etc., make logos, texts, or trademarks that fill a smaller area by other objects in real scene images. All these characteristics fail to identify texts or logos in place names of existing solution.

III. ANALYSIS OF PROBLEM

Learning based approaches are then adopted as promising solutions. Supervised learning is the main stream paradigm in modeling visual objects for recognition and localization. addressed the problem of concurrent object recognition and localization according to the data-dependent region hypothesis. Presented a semantics-preserving bag-of-words model by learning a distance metric to minimize the distance between the visual features with the same semantics. Learning based approaches are then adopted

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IV. PERPOSED WORK

The task of recognizing and localizing OPSs in real-world scenes can be viewed as a problem of real-world visual object recognition The visual template based matching techniques exploit pre-defined patterns to discover the correspondences in given images For example, various researchers proposed approaches to detect business logos/trademarks in real world scenes. To speed up the recognition operations, further developed a scalable recognition framework. Since there are hundreds and thousands of different OPSs in use nowadays ,it is infeasible to collect all the visual templates in advance. In response to this problem, several research projects devised approaches to detect texts contained in objects (e.g., OPSs or products) to associate an OPS category with the identified corporate image. However, as the viewing angle of a camera changes, the texts might be significantly changed in their shapes due to perspective distortion or partially (or completely) occluded, and thereby can not be well recognized by those existing approaches. Moreover, OPSs might also exhibit great diversity of visual appearance as, such as the variations in color, font style, and OPS size, which makes defining basic templates for an OPS unpractical as the number of OPSs scales up. System design is the process of defining the architecture, components, modules, interfaces and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. There is some overlap with the disciplines of systems analysis, systems architecture and system engineering.
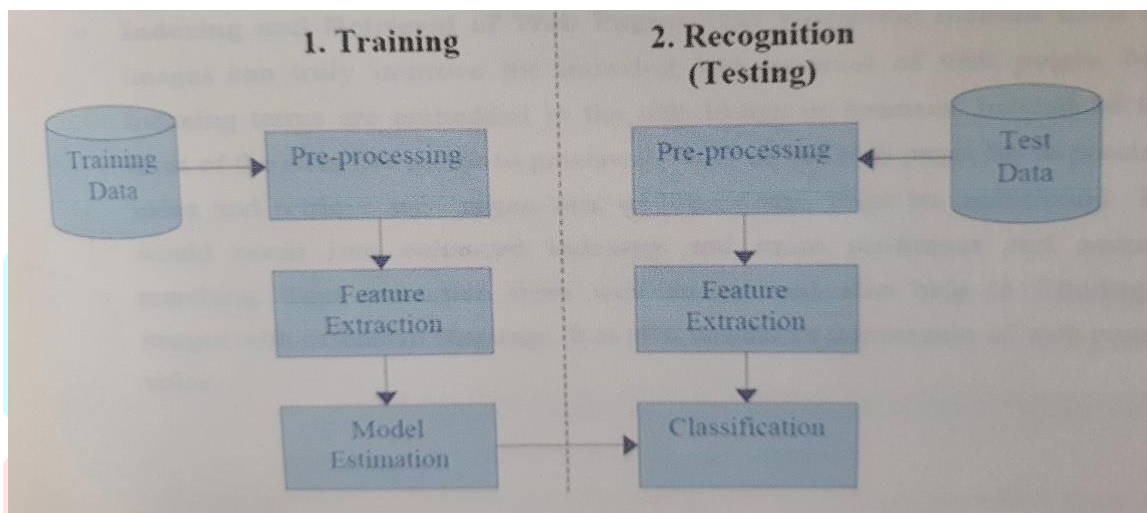

Dataset

Instead of generating strong labels for real-scene images, we resort to an alternative learning technique, which is weakly supervised by a dataset with each image labeled with the OPS category it contains, i.e., our, learning involves a significant amount of human labor, and thereby is usually not feasible for training a real-scene model. Instead of generating strong labels for real-scene images, we resort to an alternative learning technique, which is weakly supervised by a dataset with each image labeled with the category it contains, i.e., a weakly labeled image, learning involves a significant amount of human labor, and thereby is usually not feasible for training a real-scene model. Instead of generating strong labels for real- scene images, we resort to an alternative learning technique, which is weakly supervised by dataset with each image labeled with the category it contain I.e., a weakly labeled image.

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The project is about optical character recognition with image processing and data mining and machine learning technique. Optical character recognition is the core part of this model which reads each character through image. In this model a person who interested to buy something or wants to stay in hotel then by using smart phone he needs to capture the image of name of hotel or shop and then this application will extract text from image and will search for information related to respected place and get out entire details. This project will help them to get out entire details of any restaurants, hotels, name, malls and any other places before entering into them this detail content all services they provide, product in shop or mall, current offers.
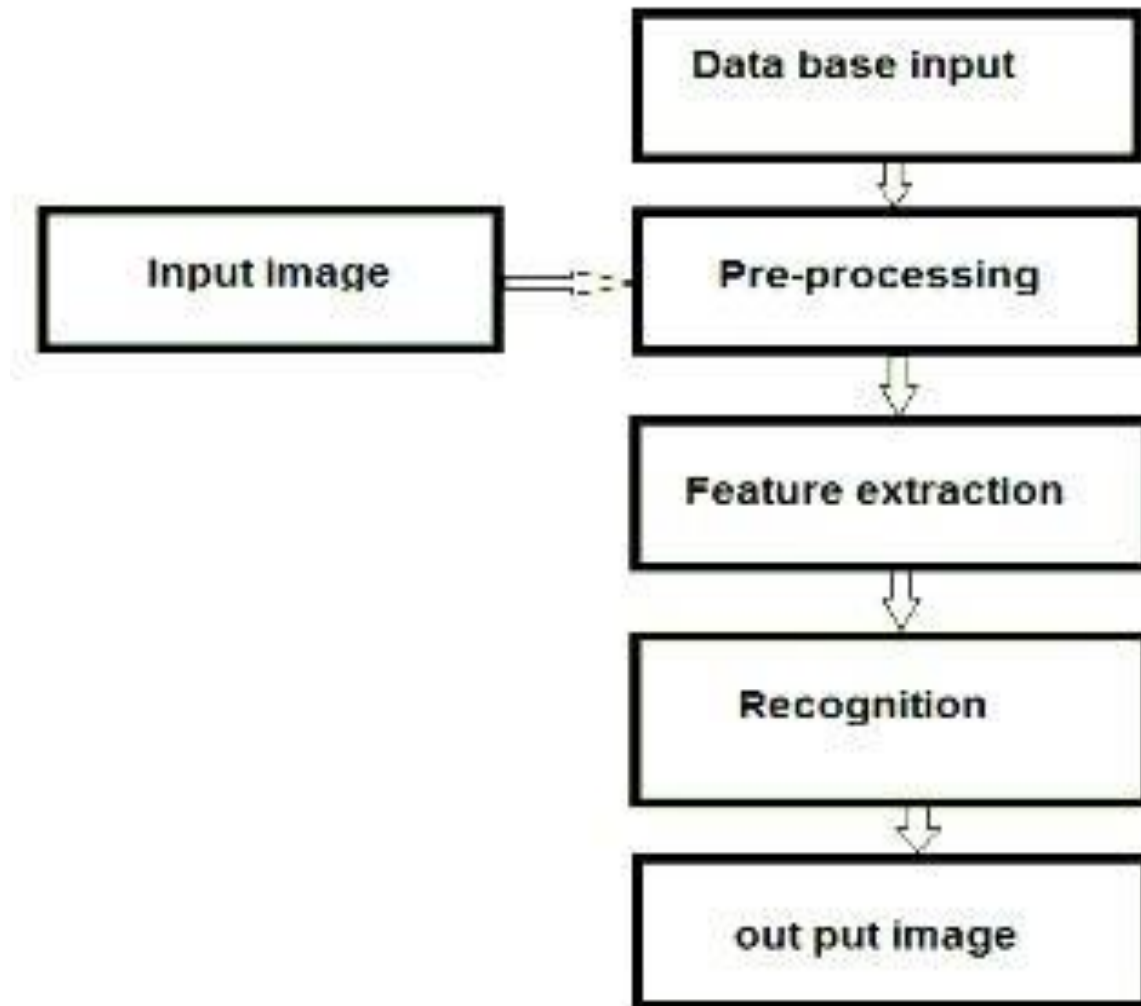
V. IMPLICATIONS

1. To identify Details of places using OCR and Machine learning.
2. The exposure of machine learning methods and KNN algorithm.
3. To improve performance of various algorithms in machine learning.
4. To improve the system that take real time image from camera

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