

A Currency Recognition App For Visually Impaired People

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Abstract

In this paper , we will use computer vision techniques for currency detection , which will run on a computationally low smartphone. the appliance runs on the smarthphone without the necessity for any local server. It's intended for wide and practical use by the blind people. Though we use the INR paper currency as a case in point , our method is unique and can scale to variety of domains beyond the currency. Our solution will use a visible OCR Algorithm detection method. To enable robust detection during a segmented environment, we will firstly crop the bill background by using an step by step evaluated supported IGC(iterative graph cuts) method. We analyze the popularity problem as an object retrieval task, which will run on mobile devices. We analyze the performance on a group of images which are captured in variety of natural environments, which will report an accuracy of 95.6% on 2438 images. Keywords: Currency , Detection, Blind People, Artificial Intelligence, Machine Learning, Image Processing, Dim-sighted People.

I. INTRODUCTION

Visual perception on a mobile device has many applications. During this paper, we specialise in the matter of detection of currency denominations on a small-processing mobile . this is often an instantaneous requirement for the visually blind individuals. Around 284 Million individuals are estimated to be dim-sighted , out of which 245 Million have low-vision and around 39 Million are blind. Some unique characteristics are printed on denominations of various currencies but they have a tendency to wear away[6 7]. We adopt a way that supports computer vision on mobile devices, and develop an app which will run on lowend smartphones. Here will we consider the bills of Indian Currency (INR) as a case in point , but the tactic are often extended to a good sort of settings. The problem is challenging thanks to multiple reasons , we would like all the processing to take place on the device itself and this needs necessary adaptation of the popularity of the architecture on a mobile device.

As the technology in various departments is getting updated day by day , human - computer interaction is becoming a must source for everyone.This project technology will help the visual impaired people to take part in various social activities. Therefore , there should be device designed for the dim-sighted people which will allow the blind people to easily detect the currency and hence mingle with other people in the society and also be aware of the scams. Now a days , we are very well aware of the fact that most of the people who are somewhat blind or dim-sighted are dependent on other person and hence they cannot live a free life.

Motivation: we've seen that a lot of NGO's have found out some kind of small business for the dim-sighted people. But while surveying them , we came to understand that there aren't ready to recognize the currency available within the current Indian Market. and since of the recent currency changes it had been getting more and harder for them to acknowledge the dominations. which is what motivated us to style a app which will help the dim-sighted people to acknowledge the currency.

II. EXISTING SYSTEM APPROACH

Currently there are often some apps which may detect the currecy , but they're not updated with the newest currency updates. they will be run on very high end phone and are having very processing also as UI. Using internet is compulsory for these apps and hence again a 3rd person is required to on the web .

Disadvantages:

- It is not accurate.
- Less stability provide

III. PROPOSED SYSTEM APPROACH

Fig: System Architecture
Algorithm

1) OCR

Documents of our interest are typically electronic images of paper documents obtained with a scanner. A document is related to a schema, as follows For instance , a schema might be date, total Amount, document Number, respectively with types date, currency and number; a document with this schema could contain the values "7/2/2011", "23,79" and no value for the respective elements. Executing an OCR procedure on the bitmap of a document we obtain a group of strings $\{l_1, l_2, \dots, l_n\}$.

For each element e of the schema, we associate the candidate string l thereto element. the outline of the system that automatically associates each element e with the candidate string l is beyond the scope of this paper. for every searched element, it's going to be $l \neq v$, due to the subsequent reasons:

- l may contain v and extra-text that's not a part of v .

For example $l = \text{"date:21/12/2008"}$ while $v = \text{"21/12/2008"}$.

- l might not contain v thanks to OCR errors. These errors are often of two types: – segmentation error: different line, word or character spacing's cause misdetections of white- spaces, causing segmentation errors

(e.g., $l = \text{"076 4352 056 C"}$ while $v = \text{"0764352056C"}$).

Misdetection of characters: low print quality, dirt and font variations prevent an accurate detection of characters (e.g., $l = \text{"|9,5SG"}$ while $v = \text{"19,556"}$ or $l = \text{"IOAS/0B127"}$ while $v = \text{"105/08127"}$). While the segmentation and misdetection problem may occur only with digitized documents, the extra-text problem may occur also with digitally born documents. We propose an answer that uses a set of syntactic and semantic checks so as to detect and proper these OCR generated errors. Our system is meant to be modular and extensible, so on make it possible to reinforce and improve the domain knowledge encoded within the module also on accommodate further application-specific rules beyond those currently embedded within the system. A high-level description of this step follows, full details are provided within the next sections.

Advantages:

- The system is dim-sighted friendly.
- Starting and using the app is fully voice controlled
- Currency Classification Result Accuracy is Efficient.

IV. CONCLUSION

We have successfully developed a system which will be able to recognize the Indian Currency for the dim-sighted people. We have made the system to be efficient on a mobile device considering all the difficulties like low computational power and memory and we were still able to achieve high efficiency and accuracy with low processing time. We use segmentation first to reduce the computational and processing time of the algorithm. This method is working well on noisy data captured from the mobile devices. We expect that our system will adopt to various changing currencies of the world and be updated with all the updations that will take place in future currency as well.

V. RESULTS

Sr.No Currency Detection Accuracy 1 Around 90%

In above table the crop prediction accuracy will generates in the matrix array. The crop prediction result depends upon the soil data classification along with it's types it also takes the arguments like soil classes, neural networks module in between the accuracy will find.

VI. LITERATURE SURVEY

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