

Automatic Logo Based Document Verification Using GLCM & ANN

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ABSTRACT

Document verification is important task which is done in various government department & organization, like register office, school, college, University, government departments, business documents etc. The main purpose of document verification is to identify the reality and originality of the document submitted by the candidate towards the organization for different purpose like getting admission or Job. Now days some of the duplicate documents have been submitted by the candidate for admission purpose or job purpose, such documents should be properly sorted depending on logo base and such document should be send towards that specific university for further verification. The document is automatically classified by organization wise for further simplification. Manually document verification is very difficult task. Proposed model helps for automatic logo based document verification. This paper disuses the method of logo detection and logo verification for this purpose feature that has been extracted using GLCM. Which gives us 22 features of each image and the Neural Network classifier is used to automatic document classification; it gives 95% recognition rate.

Keywords - Gaussian filter, GLCM (gray level co-occurrence), LM (Levenberg-Marquardt) algorithm, Logo, NN (Neural Network), TC (Transfer Certificate).

I. INTRODUCTION

Every organization has their unique identity for their work which is represented by a graphical symbol called as Logo. Such logos are used in different document by the organization. In case of school and colleges also logos are used on documents like TC, degree certificate etc. in day-to-day life such TC and degree certificate or marks memos are used for further education or for getting the job in organization. When these documents are submitted to the organization then it should be verified properly. Because in some cases some of the

candidates submit the duplicate documents to organization for getting job or admission. The employer can identify the document on basis of logo, but huge documents cannot be identified by the human in less time. Presented papers discuss a system that identifies the document on logo basis. Following steps are used in this system.

- 1) Input the document image by scanner or any camera.
- 2) Converts the RGB image into gray scale.
- 3) Segment the logo from document image.
- 4) Apply the GLCM algorithm to extract the feature of logo
- 5) Classify the document using neural network.

In this case the organizations are the employers have to take precaution of the originality of the document. Presented paper gives the direction regarding of automatic document verification, due to which the originality can be recognized & organization will give the admission without hesitation.

This paper uses GLCM method in which LM algorithm is used for feature extraction although this method and algorithm is used by some authors like Sushila Shidnal, who work on texture feature extraction using GLCM. In this work 6 varieties of crop images are considered namely paddy, maize, cotton, groundnut, sugarcane and sunflower. They got 63.75% result [1]. Gowri Ariputhiran, works on satellite image using Gaussian filter, GLCM and BPANN (Back Propagation Artificial Neural Network) they got 94.59% result [2].

Shridevi Soma, B.V Dhandra worked on Logo segmentation, Feature Extraction and Matching techniques. They used scanned images with 300dpi and they got 96.34% accuracy rate [3]. Though this system obtained higher recognition rate then also they are working on only scanned images. For more realistic system presented paper uses images from scanner as well as camera with specification 464 X 456 image dimension, 96 dpi with 24 bit depth.