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DOCUMENTS VERIFICATION USING IMAGE PROCESSING TECHNIQUES

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Abstract: In this paper, we contribute the effective design method that can able to match the reference image to the test image. We match the images with reference to the interest points, regions. The matched interest points are denoted by geometrical lines between the two images representing the same pixel intensity. The method context dependent similarity algorithm is denoted as CDS algorithm. The validity of CDS algorithm is shown by different experiments conducted on a large number of logos data base.

Keywords – **Context Dependent Similarity, Logo Detection and Localization, Matching, Recognition**

I. INTRODUCTION

The design of a novel variation framework able to match and recognize multiple instances of multiple reference logos in image archives. Reference logos and test images are seen as of local features (interest points, regions, etc.) and matched by minimizing an energy function mixing: 1) a fidelity term that measures the quality of feature matching, 2) a neighborhood criterion that captures feature co-occurrence/ geometry, and 3) a regularization term that controls the smoothness of the matching solution. We also introduce a detection/recognition procedure and study its theoretical consistency.

II. PROPOSED SYSTEM

The performance proposed system will be evaluated using MATLAB software tools and the flow chart algorithm.

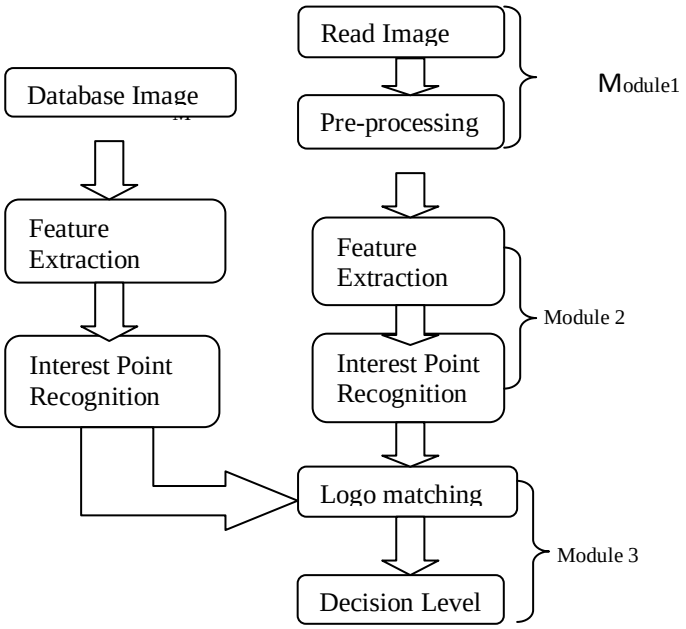

Fig.01 Flow chart of logo matching and recognition system

The system modules includes following processes,

1) Preprocessing
2) Feature extraction
3) Interest point recognition
4) Logo matching

1) Pre-processing: Consists of processes aimed at the geometric and radiometric correction, enhancement or standardization of imagery to improve our ability to interpret qualitatively and quantitatively image components.

- Radiometric Enhancement: The main purpose for applying radiometric corrections is to reduce the influence of errors or inconsistencies in image brightness values.
- Spatial Enhancement*:* Used to improve the visual quality analytical properties and extract biophysical/landscape parameters.

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- Contrast Enhancement*:* Contrast enhancement used to brighten the image that appears dark or hazy. Used to deliver an image with optimal quality and clarity.

2) Feature extraction:

- Color: Calculate percentage of color present in.
- Text: Find an unique underlying characteristics of textures.
- Edge: Edges correspond to large discontinuities in the image.

3) Interest point recognition: Intersection point between two or more edge segments. The context and orientation of the interest points are considered. Context refers to the 2D spatial coordinates and orientation refers to the angle of the interest points. Interest point recognition is based on edges and curvature of the logo images.

4) Logo matching: Detect the same feature points independently in both logo images, reliable matching of a corresponding point. Localization is used to find exact point.

The result of above system will be checked & displayed by developing Simulation /GUI, or both.

III. SIMULATION ENVIRONMENTS, PARAMETER AND RESULT

Given a query logo instance and a database of detected logos, our goal of logo matching is to compute an effective ranked list for logos in the database. By constructing the list of best matching logos, we effectively retrieve the set of documents from the same organizational entities.

1) Corner regions: Each frame is subdivided in 3:5:3 proportions horizontally and vertically into nine regions and the four corner regions are selected.

2) Edge Detection: Edge detection method especially due to its two thresholding. Canny's method uses two thresholds to detect strong and weak edges, and includes the weak edges in the output only if they are connected to strong edges.

3) Logo Persistence: The presence of a logo is corroborated if the edge persist from frame to frame. To this effect, a given percentage of the edge pixels comprised in the mask region at time t-1 should survive at time t.

4) Thresholding: The time-averaged edge field is binarized via hysteresis thresholding method. First strong edges are obtained with a high threshold value, and then weak edges are included provided they are connected to strong edges.

5) Morphological Operations: Apply closing to merge neighboring pixel groups, hole filling to prevent deformation of logo mask after opening, and finally opening to remove noise in the background.

6) Shape Constraints: TV logos possess typical shape characteristics the basic ones being the limited ranges of their area and aspect ratio. These constraints are used to eliminate improbable shapes. Furthermore logos should be sufficiently distanced from frame boundaries.

7) Logo Mask Stability: The final check consists in the stability of the logo which means that the candidate mask should not change beyond a tolerance in area, in its coordinates and in the size of the bounding box throughout the logo search sequence.

Shows figure 2 GUI for logo detection and recognition of savant coaching class's logo is genuine and figure 3. GUI for logo detection and recognition of startbucks coffee logo is fake

Figure 2: GUI for logo detection and recognition of savant coaching class's logo is genuine

Figure 3: GUI for logo detection and recognition of startbucks coffee logo is fake.

IV. CONCLUSION

Identify original documents using image processing techniques is introduced logo detection and

localization on new class of similarities, which is based on context. The solution is proved to be highly effective and responds to the requirements of logo detection and recognition in real world images.

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