Retrieval of Image from Moving Cameras and Robust Action Matching

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Abstract - In this project, human actions are recognized and frames are extracted for robust action matching in challenging situations. There are two processes. Initially in the first process is to recognize the human action in dynamic background by the shape-motion algorithm tree. The people entering into authenticated region are identified by Aforge framework. Aforge framework efficiently recognizes gesture recognition of human action. After recognizing actions script displays in currently running sequence videos. Actions videos are converted into frames and labeling of frames is done. Frames are stored in database storage called ASLAN database. In ASLAN database similar actions are stored in database by giving some ids and Unseen actions are stored in separate ids in a database. Frames are retrieved from an ASLAN database. Every image is converted into gray scale. For gray scale conversion every pixel is the combination of primary color RGB of 24 bits. Every 24 bit is divided into 8 bit of primary colors and converted into gray scale. Another process is to retrieve the existing frames from global server and the converted into gray scale. After completing above two processes harmonizing is made between the two gray scale images. For matching gray scale pixel comparison is performed by using diagonal pixel calculation. A probability solution is provided by pixel calculation. Based on the pixel rate probability solution comparison is made in robust actions.

Index Terms-Shape-motion, Aforge framework, ASLAN database, Diagonal pixel calculation.

I. INTRODUCTION

Image Processing is the process of process of retrieving the image from large set of databases. Action recognition plays an important role in many of computer applications such as video surveillance, human-computer interaction, virtual reality, and multimedia retrieval. Common method for action recognition is descriptor matching and classification based schemes. Many of the experiments lacks in recognizing actions in dynamic background. Action is viewed by a dynamic camera and against a possibly active background. This correlations performance is between the shape and motion learning prototype trees in the joint feature space. In previous work mostly deal with recognizing the action in static background using static cameras.

In our approach action recognition is recognized by using the aforge framework. The people entering into authenticated region are identified by Aforge framework. Aforge framework efficiently recognizes gesture recognition of human action. After recognizing actions script displays in currently running sequence videos.

In next section, In ASLAN database similar actions are stored in database by giving some ids and Unseen actions are stored in separate ids in a database. Frames are retrieved from an ASLAN database. Every image is converted into gray scale. For gray scale conversion every pixel is the combination of primary color RGB of 24 bits.

II. OVERVIEW OF APPROACH

Two sets of samples are used for robust action matching. In training samples human action is detected by using a dynamic prototype sequence algorithm. During training, an action prototype tree is learned in a joint shape and motion space by means of hierarchical K-means clustering and each training series is represented as a labeled prototype sequence; prototype-to-prototype distances is obtained using a look-up table. Storing the frames from look up table is performed when converting into videos. Retrieving of frames from database and convert into gray scale conversion.

After converting into grascale between training and testing samples frame appraisal is performed. Frame appraisal provides the exact probability solution after calculating the pixel rate.

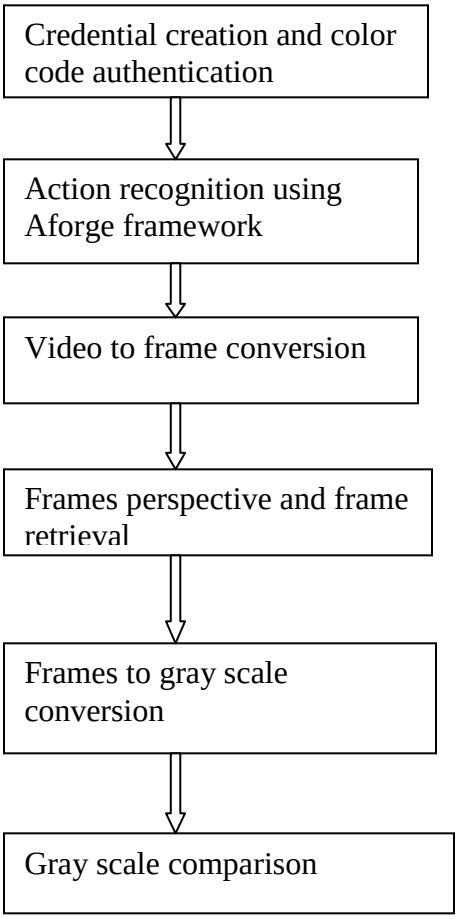

Fig 1. Overview of approach

III. METHODOLOGY

In this section there are various methodologies that are needed to be discussed for project development. Let us see the various methodologies.

3.1 CREDENTAIL CREATION AND COLOR CODE AUTHENTICATION

Credential creation module is for authentication to validate the user for admission. User gives input to validate his user name and password. Color code authentication is used for accessing the password. It's for alternate authentication to verify the user. In this type of authentication the user have to solve the puzzle followed by matrix method.

Visual cryptography is a secret distribution scheme where a secret image is encrypted into shares, which are noise-like secure images that can be dispersed over an untrusted environment. The secret image can be reconstructed visually by superimposing the shares. This scheme can be extended such that identifiable images are used as shares and still retain the property of yielding the final image when superimposed.

3.2 ACTION RECOGNITION

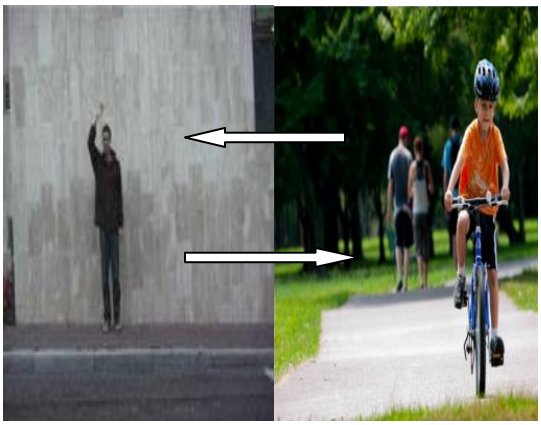

Fig 2. action sequence

The actions can be broadly divided into:

- Activity: Person of interest performing the action
- Background: Context and/or Clutter

From the above figure shows difference between activity and background.

It denotes normal human action recognition in dynamic background in video as well as in live streaming using dynamic prototype sequence. Actions are recognized by using an algorithm called shape motion prototype tree. By using framework called aforge. Gesture recognition functions are added in Dynamic Link Library (DLL). This approach enables robust action matching in difficult situations (such as moving cameras, dynamic backgrounds) and allows automatic alignment of action sequences. Frame-to-frame distances are quickly estimated via fast prototype tree search and look-up table indexing.

The action recognition process is divided into two steps frame-to-frame matching and frame-based sequence matching. Frame-to-frame matching is performed is based on the action sequence handled in the videos. Frame based sequence matching is performed based on the classification of the databases.

3.3 VIDEO TO FRAME CONVERSION

It describes video to frame conversion and storing in database in labeled sequence using labeled prototype sequence. For labeling procedure ASLAN is used. ASLAN stores only the similar actions that are performed by an actor. Each frames are stored in database called ASLAN database.

3.4 FRAMES PERSPECTIVE AND FRAME RETRIEVAL

The important role of frames perspective is to allow viewing the list of labeled frames from database. For ASLAN database different ids are specified. For each ids some specific name is given. If ids are known we can specify the name of the frame for robust action matching. The power of the same/not-same formulation is in diffusing multiclass task into a manageable binary class problem.

3.5 FRAMES TO GRAY SCALE CONVERSION

One for each major, when fed into an RGB monitor, these three images combines on the phosphor screen to produce a composite color image.

The number of bits used to stand for each pixel in RGB space is called the pixel depth. Frames are the combination of many pixels. Each pixel is the combination of primary colors called RGB with 24 bit. Each 24 bit is converted into 8 bit of RGB and every 8 bit is converted into gray scale pixel based on luminous intensity.

3.6 GRAY SCALE CONVERSION AND HELP MODULE

Gray scale comparison module will compare the frames to find the exact human and his action performed in unauthenticated region. Gray scale conversion is performed by database server. Alert generation is performed by calculating the pixel calculation. The probability solution is provided by calculating the pixel rates. Pixel rate are performed by diagonal pixel calculation. Diagonal pixel is calculated is based on matrix calculation.

Pixel calculation is based on diagonal matrix calculation. The diagonal matrix calculates not only calculate the diagonal pixel but also the likelihood pixel. The diagonal matrix calculates the maximum pixel which is matched for robust action matching. If the maximum pixel is obtained the probability solution is based on the pixel is generated. When minimum number of pixel is obtained in alert generation, the robust action is not matched.

IV. CONCLUSION

Our approach provides efficient action recognition in dynamic background. The result provides greater performance by using Aforge framework. By pixel comparison a probability solution is provided so that robust action matching is efficient.

The pixel rate comparison is made on approximate actions. In future research it is made on different categories of actions in different manner.

The future research is based on using different technique for pixel comparison for robust action matching.

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