# Video fusion based on shot detection

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**Abstract –** *The large amount of media today leads to a difficulty of selecting and identifying useful information in videos. In day to day life the video became most important. For example suppose two person is working on the same new. One took a video from one place and another from other place. If they want to broadcast this video they need to combine both the shot and remove unwanted transitions and effects. In this paper we provide a video fusion method based on shot boundary. Shot means sequence of frames capture by camera. Sometimes video contains unwanted transitions so we need to remove those transitions because they affect the quality of video. Transitions may be like fade-in and fade-outs, dissolves or wipes. Here we first detect those frames which contain such a transitions. Once the shots are found we will fused the videos according to shot boundary matching. For detection of shots we use here is double density dual transform. Double density dual transform consist of property of both dual tree and the complex DCT. Dual tree wavelet transform gives the location of transitions.*

**Key Words: shots boundary, fade-in and fade outs, dissolve.**

## 1. Introduction

- Most of the times the media facing difficulties of combining the useful shot which contain desire information. Sometime while capturing videos may affect by the atmospheric noise. People take videos in shots and then combine those videos facing the difficulties of selecting useful frames and identifying the frames that are contains noises like fade-in and fade-outs, dissolve effects.

- Shots means series of frames capture by camera. Fade-in means single color frame is converted into a frame of next shot. During a fade-in frames, the intensity of images increases from zero to one. Similarly in fade-out the intensity of images decreases from one to zero. Dissolve means the content of one shot mixed with the content of next shot. The main part of this task the breaking of videos into a shots and finding out the fade-in and fade-outs, dissolve or wipes shots. Sometimes video a contain scene also break which is also known as cut.

- Here we use the double density dual tree wavelet transform for finding outs the fade-in and fade-out shots.

- After the detection of shots we will fuse the video according to shot boundary matching.

## 2. LITERATURE SURVEY

The number of technique has been developed for video fusion. The flowing are the some of them

I. Srinivasa Rao Chalamala, Krishna Kakkirala and Jyoti Dhillon[1] have proposed a method of histogram with threshold ling and use a counter and surf feature for detection of shots and shots are match for video fusion.

II. Prathana shrestha, hans Weda, Mauro barbieri[2] have proposed a video fusion method base on flashes available in the video. Flashes are produce by cameras which is known as sharp bright frame in the videos. These frames are found by using adaptive threshold with luminance variation across the frame.

III. She-wei-lo and fang-Pang[3] have only found the shot boundary and classified them into shots.

IV. Jharna Majumdar, Darshan K M, Abhijit Vijayendra[4] have proposed an video fusion method using box counting with shot extraction is used to find the various frame tramsition.

V. Jun Li, Youdong Ding, Yunyu Shi[5]here to get the clear video and to reduce the cost they first remove the frames which are not clear and after that finds the features of the the frames for finding out the shot boundary.

VI. Abdelati Malek Amel, Ben Abdelali Abdessalem and Mtibaa Abdellatif[6] have used the method ARPS algorithm that means adaptive root pattern generation for compression of frames.

## 3. Proposed work

In the previous technique histograms with threshold ling is used for detection of fade-in and fade-out but this approach is less accurate and might reduce the quality of fade detection thereby reducing the overall accuracy of the video.
To avoid this we will be using a dual tree wavelet transform. DTWT is a technique which finds out the approximate horizontal, vertical and diagonal components of the input frame. The change in this components on a per frame bases gives us an approximation of the no. of fade-in and fade-out available in the given frame or video.

This approximation is very accurate when compared with normal histogram based technique. Once the fade-in and fade-out transition are found out then we will fuse the video.

## 4. Flow chart

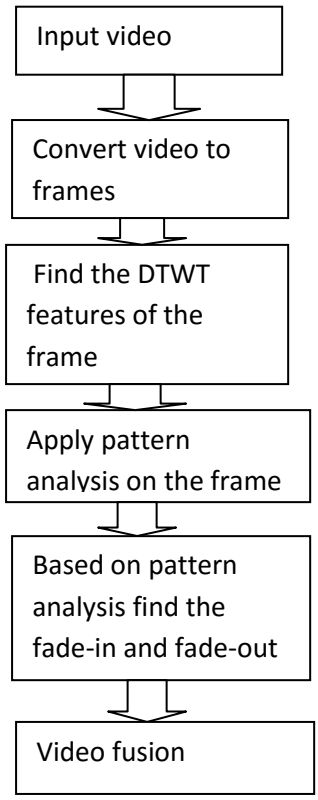


Fig (a): Algorithmic Flow

We will given distorted video that means which has gradual transitions like fade-in and fade-out, dissolve, wipes etc. After that we will convert that video into frames.
Then we apply the double density dual tree wavelet transform for finding out the locations of gradual transitions.

### 4.1 Double density wavelet transform:

Double density wavelet transform have the features like shift invariant. It employs one scaling function and two distinct wavelets, which are designed to be offset from one another by one half. The double-density DWT is over complete by a factor of two, and It is nearly shift-invariant. In two dimensions, this transform outperforms the standard DWT in terms of denoising; however, there is room for improvement because not all of the wavelets are directional. That is, although the double-density DWT utilizes more wavelets, some lack a dominant spatial orientation, which prevents them from being able to isolate those directions. A solution to this problem is provided by the double density complex dual tree wavelet transform which combines the feature of which combines the characteristics of the double-density DWT and the dual-tree DWT. The double-density complex DWT is based on two scaling functions and four distinct wavelets, each of which is specifically designed such that the two wavelets of the first pair are offset from one other by one half, and the other pair of wavelets form an approximate Hilbert transform pair.

### 4.2 Pattern analysis

After finding out the horizontal, vertical and diagonal components of the video frames we will apply the pattern analysis. Different transitions have different patterns. So according to that we will find the position of the transition frames. After that we remove those frames and using boundary matching we will fuse the videos.

### 4.3 Video fusion

Videos will be fused according to the shot boundary matching.

## 5. Conclusion

It can be shown that the accuracy of video fusion is increased because we added the various features and use the double density dual tree wavelet transform. The time for processing of video also reduces because we remove the unwanted frames and matches the shot boundary. It is also seen that the accurate shot boundaries were find. This improves the overall accuracy of the video.

## 6. References

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