SUMMARY OF THE PROJECT

CREATION OF AN AMBIENT PICTURE FROM VIDEO CLIPS

The project titled “CREATION OF AN AMBIENT PICTURE FROM VIDEO CLIPS” aims at extracting an image which have reasonable quality from a video file. Sometimes we will be having the full show of a program arranged by us , but no still might have taken. This happens in many situations and using the proposed algorithm we can have a good snap extracted from the available video.

Sometimes we tend to capture a lot of video footage and while it can be fun at first, going through it can be quite the hassle. There are situations when we just need that perfect frame, a great shot that will help we bring in front a lot of fun. Basically, with a frame we can show the fun moments of any video, we can bring in front a specific important moments from that scene or we can even reproduce some of the movie scenes via an image collage.

Not only that, but we can also use the frames in order to create a GIF file. It’s all about having the ability to use these frames as we see fit, and it can either be a DVD cover, a collage for birthday and so on. The possibilities are indeed endless and it all comes down to choose them properly.

Most movies and TV programs are filmed at around 24-30 images per second, each individual image is called a frame which is where we see the term frames per second (FPS). A [video file on a computer](https://www.raymond.cc/blog/display-thumbnail-preview-video-files-windows/) simply stores all the frames together and plays them in order, and the total frames stored for a typical movie reaches into the hundreds of thousands. If we want to [capture an image](https://www.raymond.cc/blog/easily-capture-screenshot/) of one or two frames it’s quite easy and we simply pause the video and press the Print Screen key

If we want to extract a succession or range of frames or even [all frames from a short video clip](https://www.raymond.cc/blog/split-or-break-gif-animation-into-individual-frames/), capturing the images one at a time is incredibly inefficient and time consuming. For that purpose we need a program that can extract however many video frames we want and save them to image files automatically, like jpg or png.

In the project many application software were considered for study purpose such as Free Video to JPG, VLC Media player,Virtualdub,FFMpeg,WondershareFilmora and even though these software performs well , the one thing that lacks is the print quality .The aim of the project was to get all the snapshots that is all the frames one by one and to select the best fit frame for the situation.

Using a Matlab program , all the frames were extracted to image matrices and were saved to folders in computers . These pictures can be loaded to view frame in matlab and ten types of corrections were made such as color, brightness , hue , saturation etc and were made to a printable quality picture.

The application of the project was published as a book chapter in a book

INFINITUDE: Frontiers of Research in Mathematics, statistics and Computer Science with ISBN number 9788191070627

In which the idea was to create a vehicle database after a census by taking the photographs of number plates. The numbers in number plates are extracted and made as text and stored to database and can be compared with the database of motor vehicles department for a lot of applications.

Algorithm

1. Get a frame from video
2. Do picture adjustments

a) imcontrast

b) imadjust

c) brighten

d) caxis

e) colormapeditor

f) hsv2rgb

Save the picture

MaLlab programs were used to execute the above logic in which the programming was quite easy to manipulate the matrices. Same logic can be implemented using open source python also.