All these questions have been asked by professor Pk Dutta.

Ques 1: What are your project objective and its importance in two lines?

Ans: My project objective is Automatic Detection of Keyframe and Motion frame in Bharatanatyam Video.

* We have used optical flow to extract the feature and histogram of optical flow (HOOF) as a final feature vector to input for a binary classifier.

Comment by prof PK Dutta:

It seems interesting to work done by you. Keyframe and motion have an essential use in the analysis of the video.

Ques 2: What are the challenges faced by you while doing this work?

Ans: Some of the challenges are inherited like the following:

* There may be very slow motions at the start of the transition of video. Those slow-motion may be falsely classified as a keyframe.
* The distinction between keyframes and motion frames may not be easy due to the existence of complex motions and postures.
* Non-visibility of foot/leg movements and occlusion due to the complex dress style.
* In some cases, when a dancer is in Key posture position, the movement of the dress materials may be misinterpreted as body movements( motion frame).
* The non-availability of annotated Bharatanatyam Adavus.

Then there were cross-questions Since there would be some distance between the camera and the dancer. So, how did you solved that problem or challenges faced by you?

Ans: I have standard RGB images and Depth Frame images which are recorded by Kinect. So, I have removed the background from dancer images.

I have used as explained briefly Background removal algorithm mentioned in slide number 9.

Ques 3: Briefly describe your workflow or what you are doing in this project?

I descried about the workflow of, as mentioned in slide 8. I have taken 480 x 640 size of RGB images, used background subtraction, resized these images to 120 x 160 size single channel frames.

I take two consecutive 120 x 160 size frames, calculated optical flow using the Lucas-Kanade method. It would give 120 x 160 size of matrixes of magnitudes and orientation. I have used a different methodology of histogram binning for feature extraction.

I have taken extracted feature and annotation file and labelled feature for training feature using a binary classifier. Here, I have assumed 1 for motion frame and 0 for the keyframe. I have used SVM as a binary classifier.

I have used trained SVM to get labelled feature, i.e. motion frame or keyframe.

Cross Question: How do you use SVM or which SVM like linear or RBF function?

I have used linear SVM. I have also tried others, but computation time for them was high, and accuracy was as comparable to linear SVM. I have massive data, and it is compulsory to train and test on all data for comparing results with others work or previous work. So I have proceeded with linear SVM.

Ques 3: Have you compared your final results with any previous work done? How good is your job?

Yes, I have compared with the work done by PhD. Scholar Himadri Bhuyan whose work was "Segmentation of Bharatanatyam dance video: detection of keyframe ". There is a gap in the accuracy of 10-15 per cent overall adavus with Himadri work. His work was the detection of keyframes, so he optimises model over keyframe accuracy. My job was the detection of motion frame, So I optimise model over motion frame accuracy.

Ques 4: Tell me the approaches used by you.

* Ans: I have used three approaches. In approach 1, I have magnitudes of optical flow for histogram binning.
* In approach 2, I have used magnitudes and orientation of optical flow for histogram binning.
* In approach 3, I have used fractional binning, where I have used magnitudes and orientation of optical flow. But, here i have divided the image into 8 x 8 cell and used histogram binning on that cell and concatenate feature extracted from them.

Ques 5: In approach 3, How did you iterate over images?

Ans: I have iterated row-wise.

Cross Ques: Why did not considered column-wise?

Ans: While the literature survey, I have observed that most of them work in the same way. Like all people have iterated row by row not column-wise by wise. Okay, I should all try column-wise, but I don't think it would make any difference. I have experimented with a different parameter like cell size, number of bins etc. I have got a good result on the same parameter as used in a project like nine bin size. Also, while the literature survey, I have observed that most of them have used the same parameter, so I have proceeded with it.