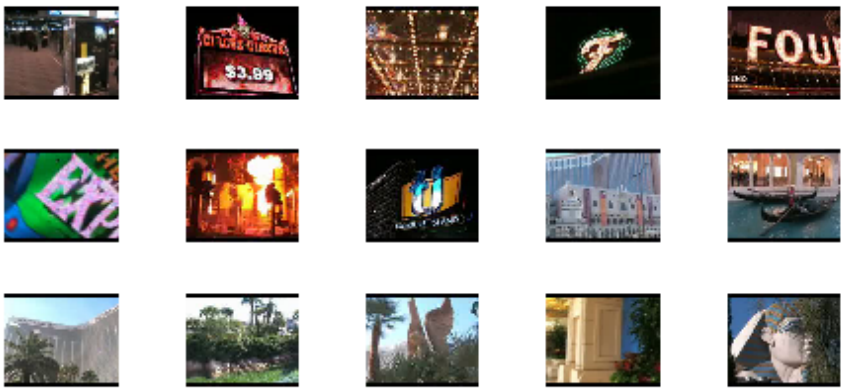
COC202 Computer Vision
Lab 5 – Video processing

In this lab, you will use colour histograms to perform shot cut detection for a video, and frame differencing to detect moving objects.

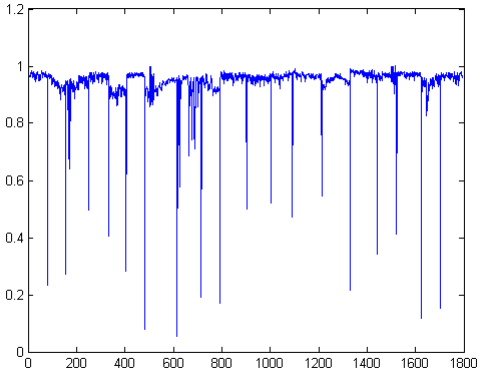
If you have not yet finished the exercises from the previous lab, do them first (you will need the colour histogram functions).

1. Write some Matlab code that performs colour-based shot cut detection on the *lasvegas.mpg* video file available on learn. Your code will need to read in the video file, detect shot cuts based on colour histograms and histogram intersection as similarity measure, and display keyframes for the shots to get something similar to this:



Matlab functions that should be useful here: VideoReader.

In order to detect the cuts correctly, you will need to experiment with the threshold you use for the histogram intersection scores. Plotting these might help you to identify a reasonable threshold:



2. Write some Matlab code that performs frame differencing on the *basketball.mp4* video to detect changes and moving objects/people. For this, you will calculate the (absolute) difference between neighbouring frames (and possibly threshold and clean up the result) and show the resulting image (for each frame).

Once you have finished all exercises you may leave the lab.