Project Description

We need help developing a command line app that can in real time analyze a mp4 video (screen recording of PPT slideshow in full-screen mode) and recognize from a set of static images (PNG export of each slide in the PPT slideshow) which image is currently showing.

Inputs:
1) List of PNG images (exported from a PPT slideshow)
2) MP4 video file (screen recording of the PPT slideshow)

http://dl.dropbox.com/u/9803682/projects/opencv1.zip

Output:
The command line program should work like this:
#run it
recogimage video.mp4 ./images
#While running the program should output recognized images something like this:
00:00:00.00 ./images/Slide1.png
00:01:05.00 ./images/Slide2.png

Features

1. Video shot detection - Dissimilarity between video frames in screen video to detect when there is a new slide showing, see example here**:** http://goo.gl/HIbza
2. Compare video frame with a set of static images and detect which static image is displaying in the video. Propose algorithm to be used?
3. In a live streaming scenario (think multiple presentations streamed live from PC during 6 hours), the set of static images should be able to be changed on the fly by changing the path to the static images (or setting a list of paths to static images) on the image recognition GStreamer filter

Deliverables

1. GStreamer filter written in C or C++ that implement image detection algorithms to detect static images in video implemented using OpenCV
2. Example app using GStreamer to read the video from example video file. The example app should output the detected static image in the console.
3. The program should run on Ubuntu (latest for latest GStreamer)

Skills Required

OpenCV, C/C++, GStreamer, Linux