

# Programming Assignment 1

**Date of announcement:** 15<sup>th</sup> Jan 2019  
**Submission deadline:** 29<sup>th</sup> Jan 2019

## Description

In this assignment you will gain a practical understanding of issues that relate to image and video processing and more specifically with displaying videos, transitioning videos, and aliasing problems that result from such transitions. A set of videos will be provided and your objective is to render the videos and perform the user-specified transitions.

## Implementation Specifications - Grading Criteria

Develop a multimedia application with the following features and functionality

- The input to your application will be two video files and a number. The number will represent one of the possible transitions between them: 1 - Fade, 2 - Cut, 3 - Wipe, 4 - Scale, 5 - PiP.
- The application should display both videos next to each other at 30fps. The frame size should be  $640 \times 480$ .
- The application should display the composited video in a third window.
- The following transitions should be implemented:
  1. Fade - transition from the first to the second video within the last 30 frames of the first, and the first 30 frames of the second (total of 30 frames)
  2. Cut - as soon as the first video ends, the second video should start
  3. Wipe - slide the second video on the left side of the first video within the last 30 frames of the first, and the first 30 frames of the second (total of 30 frames)
  4. Scale - the first video scaled down to a very small size, transitions to the second video and then scales up again. The smallest size should be 10% of the original image. The transition should occur within the last 15 frames of the first, and the first 15 frames of the second (total of 30 frames).
  5. PiP: Picture-in-Picture - similar to the scale transition however in this case the second video starts from a small scale in the upper right corner and scales up into the first video. The transition should occur within the last 30 frames of the first, and the first 30 frames of the second (total of 30 frames).

## Submission (electronic submission through EAS only)

Please create a zip file containing your code, a readme text file (.txt). In the readme file document the features and functionality of the application, and anything else you want the grader to know i.e. control keys, keyboard/mouse shortcuts, etc.

## Additional Information

- You can use the skeleton code provided: [www.poullis.org/courses/2019/Winter/SOEN6761/resources/Assignment1\\_Skeleton\\_Code.zip](http://www.poullis.org/courses/2019/Winter/SOEN6761/resources/Assignment1_Skeleton_Code.zip)
- A video demonstrating the functionality is posted on YouTube: <https://youtu.be/6W75d8CeXRY>

## Evaluation Procedure

You MUST demonstrate your solution program to the lab instructor during lab hours. You will be asked to download and run your submitted code, demonstrate its full functionality and answer questions about the programming aspects of your solution. Major marking is done on the spot during demonstration. Your code will be further checked for structure, non-plagiarism, etc. However, ONLY demonstrated submissions will receive marks. Other submissions will not be marked.