

# Transforming Videos

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## Programming Assignment #1 CS510 Spring 2014 Due Wednesday, February 10<sup>th</sup>, 2016

### Motivation

This is a “warm-up” exercise. It won’t be directly useful in the action recognition system you are going to build (most likely), but it will get you used to using the OpenCV library and to working with your teammates. It’s also fun.

### Task

Your task is to write a program (in either C++ or Python) that takes three command line arguments. The first is the name of a video, in any format that OpenCV can read. The second is a file containing two, three or four point correspondences. The last is the name of the file that you will write the output video to. Your program should infer a similarity transformation (if the 2<sup>nd</sup> file has 2 point correspondences), an affine transformation (if the file has 3 point correspondences) or a perspective transformation (if it has 4), and then apply that transformation to the input video to produce an output video.

More specifically, the 2<sup>nd</sup> file contains one point correspondence per line, in the form of four ASCII real numbers separated by white space. These four numbers should be interpreted as the (x, y) source coordinates and (u, v) destination coordinates of a transformed point.

Of course, I never want you to do *only* what I ask for. (Doing what I ask for is ‘B’ work.) Add something of your own devising!

### Submission

Unlike most assignments in this class, the warm-up exercise has only one deadline. You don’t need to give me an initial design, goal and evaluation plan. Just spend two weeks building something fun.

Submit your assignment by mailing a tar file directly to me (at [draper@colostate.edu](mailto:draper@colostate.edu)). Your tar file should contain a README file explaining exactly what I have to do to compile and run your program. Be particularly explicit if your code is in Python, as I do not often run Python programs. Your tar file should not contain executable code.