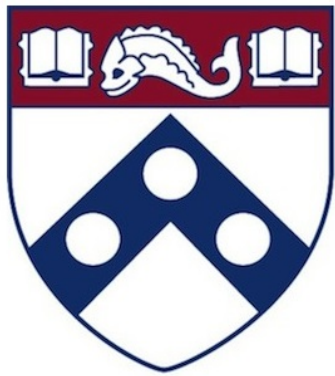# University of Pennsylvania
School of Engineering and Applied Science

CIS 581: Computer Vision and Computational Photography

Project 3 - Automatic 2D Image Mosaic

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November 19, 2014

1 Inputs and Outputs

The Images in Datasets A, B and C are shown in Figs. 1, 2 and 3 respectively.

Figure 1: Images of Dataset A

The intermediate Steps for Figure 1 are shown in Figs. 4 and 5 respectively.
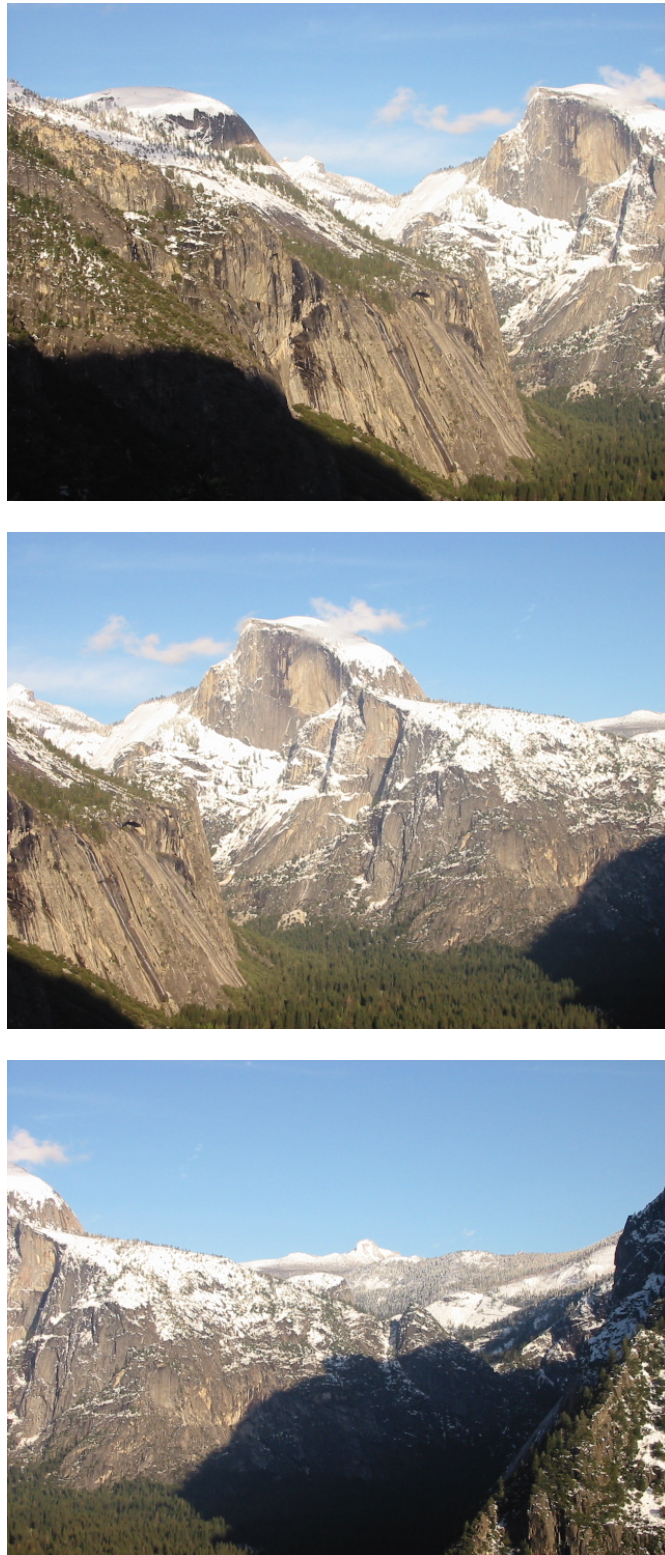
Figure 2: Images of Dataset B

The Final Stitched Outputs for Datasets A, B and C are shown in Figs. 6, 7 and 8 respectively.
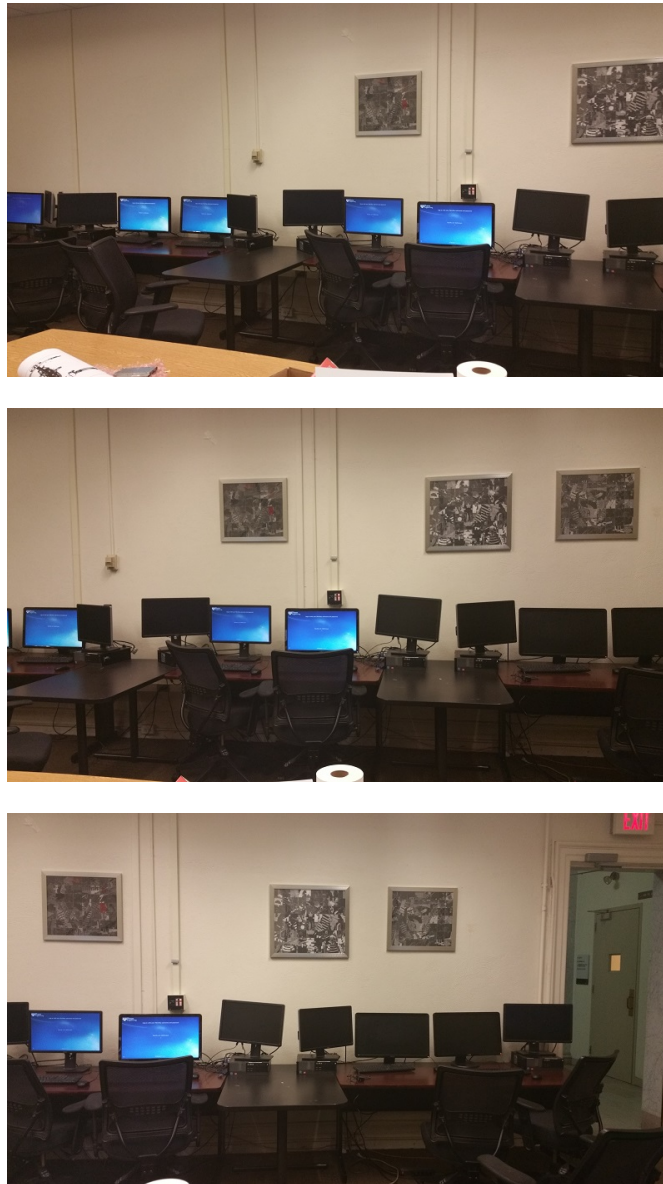
Figure 3: Images of Dataset C

2   Bonus Feature: Automatic Contrast Adjustment of Blended Pixels

My code tries to adjust the contrast of the blended pixels using the histograms of the 2 images under consideration. Weighted average of mean of histogram values is used as the Blending Fraction.

P. S. NOTE: I wrote the blending and warping code without using any MATLAB functions to do this.
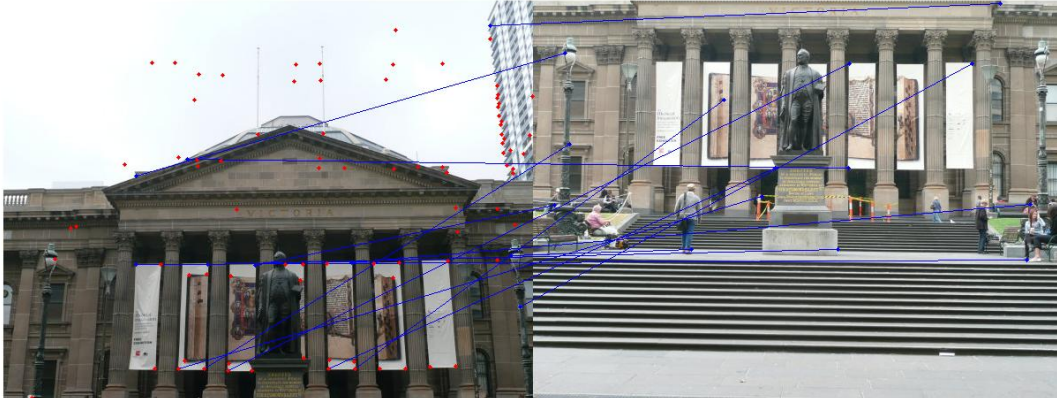
Figure 4: Matching between first 2 images, red dots indicate corners which are not used to calculate homography, blue lines indicate corresponding matches

Figure 5: Matching between output of 2 images and 3rd image, red dots indicate corners which are not used to calculate homography, blue lines indicate corresponding matches
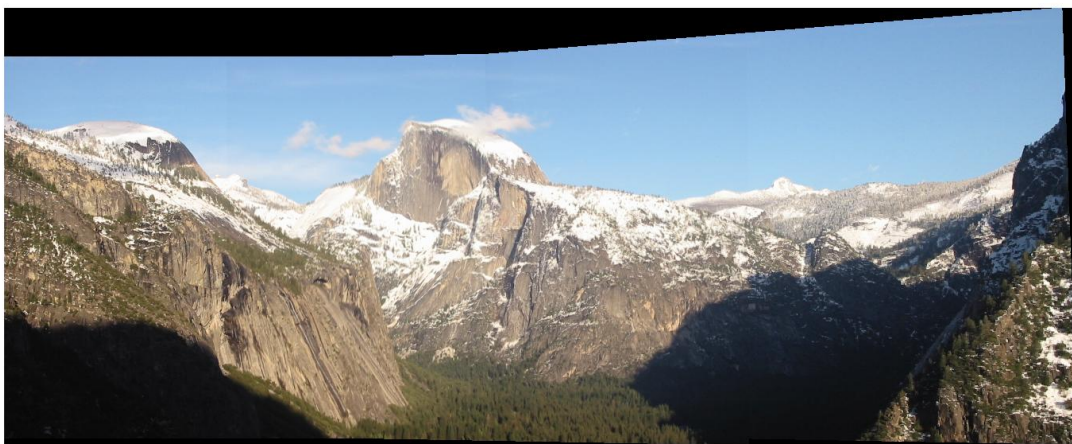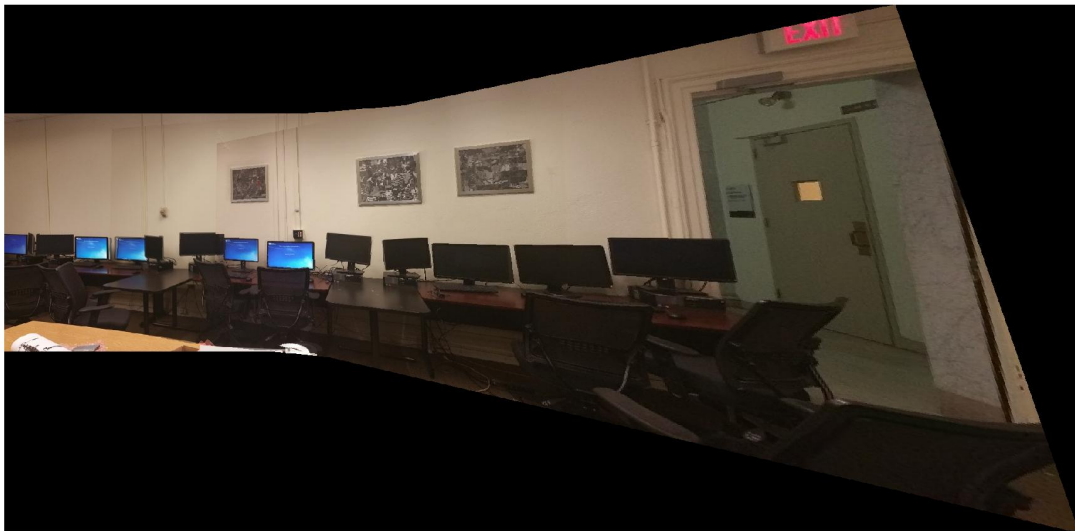
Figure 6: Panorama Output for Dataset A

Figure 7: Panorama Output for Dataset B

Figure 8: Panorama Output for Dataset C