

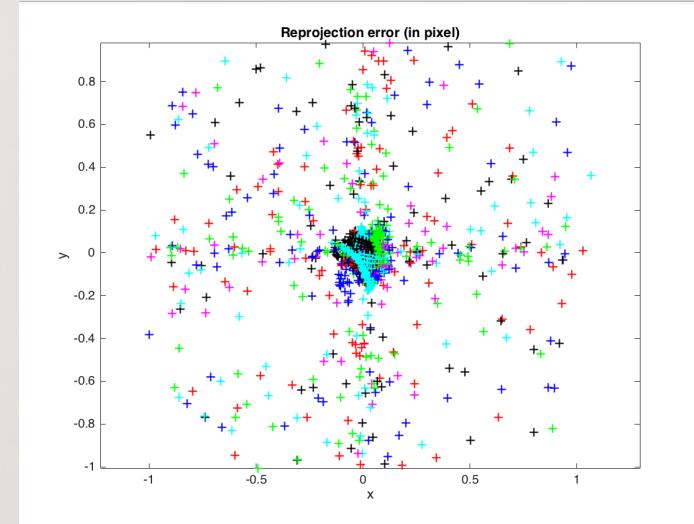
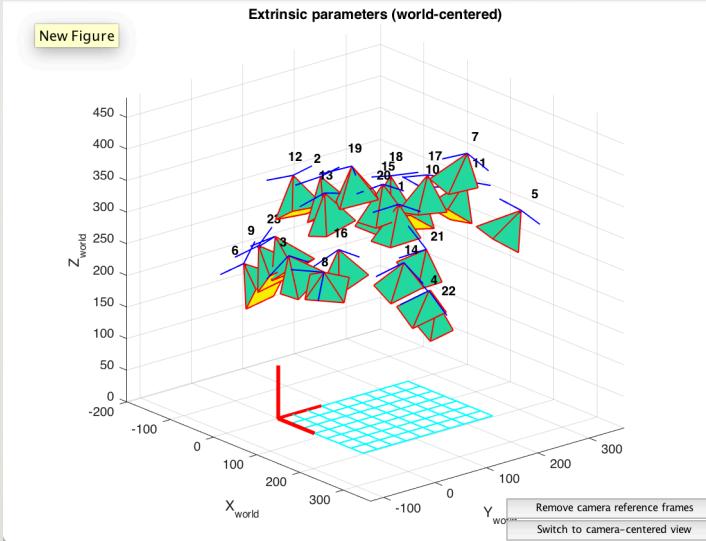
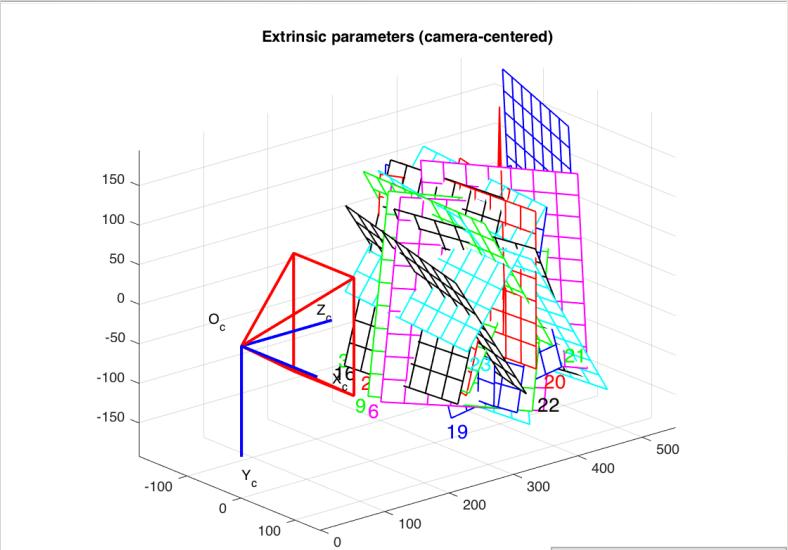
EECE 5698: LAB 4 PHOTO MOSAIC

ANDREW TU

CALIBRATION

- Calibrated using 23 images of the checker board
- Window size of 1px
- Focal Length: $fc = [3798.09831 \ 3786.69369] \pm [0.84810 \ 0.86363]$
- Principal point: $cc = [1913.48815 \ 1754.93413] \pm [1.01761 \ 1.08005]$
- Skew: $\alpha_c = [0.00000] \pm [0.00000] \Rightarrow \text{angle of pixel axes} = 90.00000 \pm 0.00000 \text{ degrees}$
- Distortion: $kc = [0.00765 \ -0.08426 \ -0.00826 \ 0.00672 \ 0.00000] \pm [0.00074 \ 0.00209 \ 0.00009 \ 0.00000]$
- Pixel error: $err = [0.24405 \ 0.24795]$

CALIBRATION

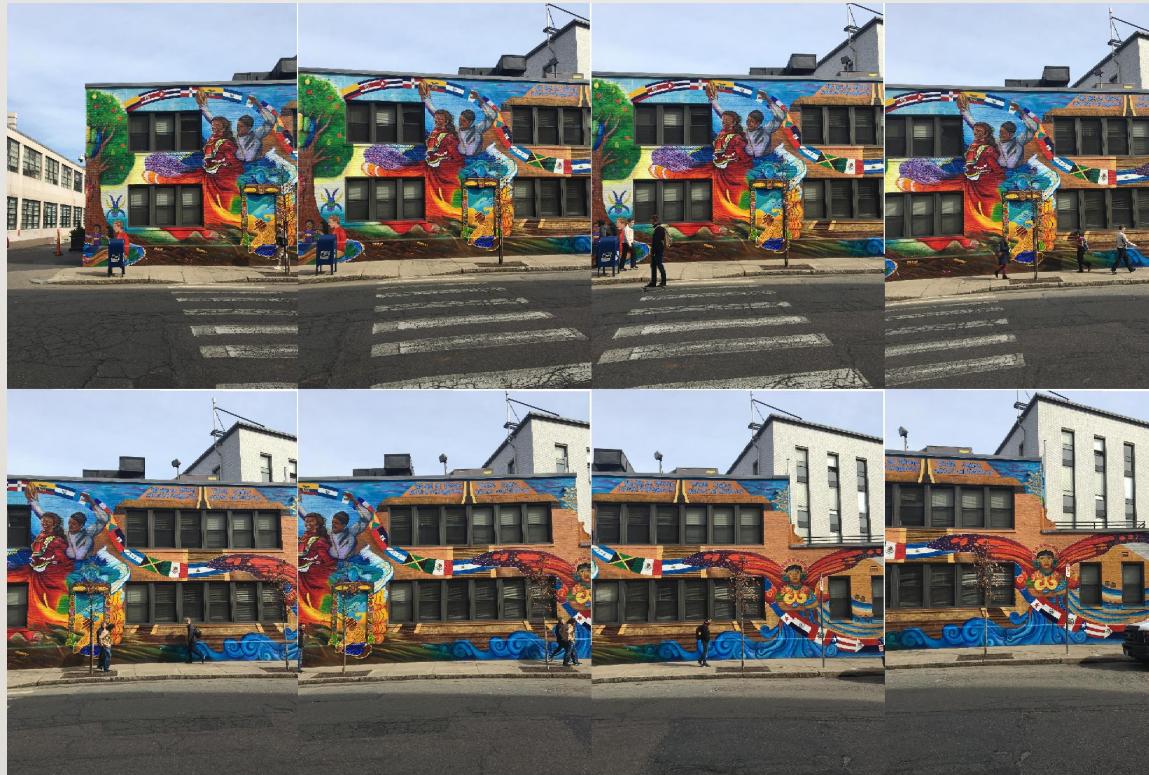


FEATURE DETECTION SETTING SUMMARY

- Down sampled images to 300px X 300px
- 1500 points taken
- Broke images up into 3 tiles for feature detection

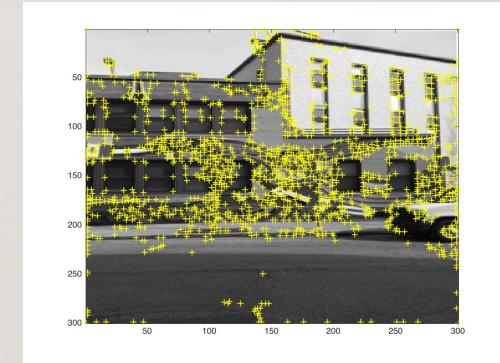
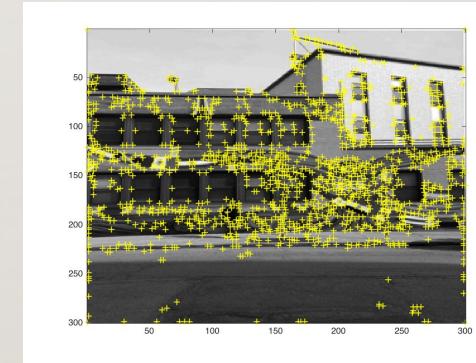
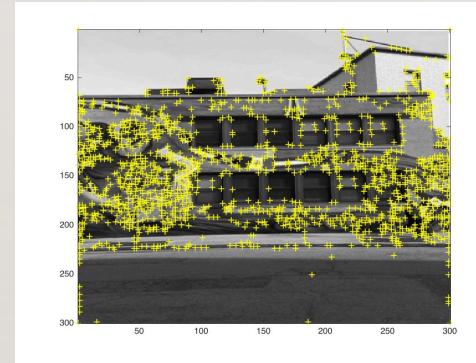
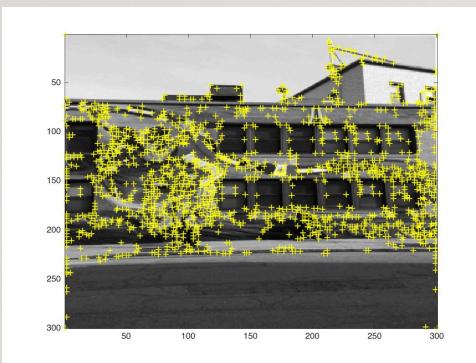
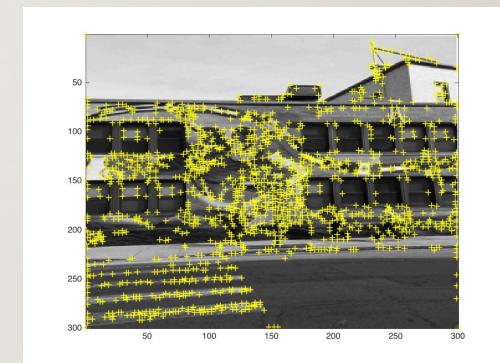
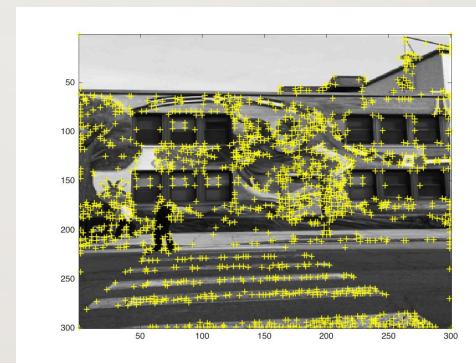
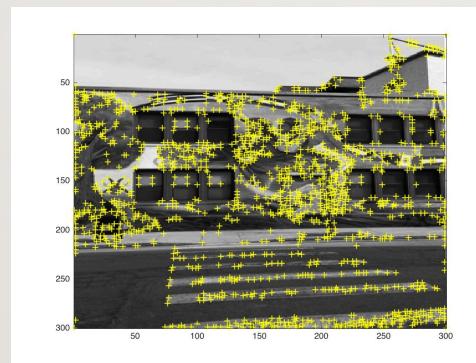
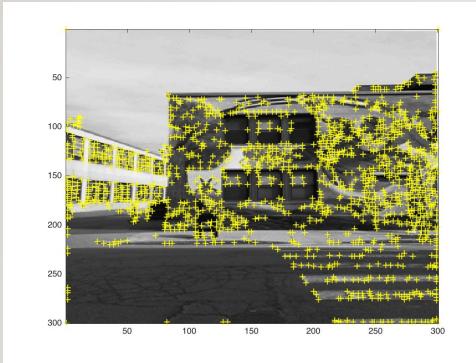


LATIN AMERICAN CENTER - MONTAGE



LATIN AMERICAN CENTER – FEATURES

(IMAGES DOWN SAMPLED TO 300PX X 300PX)



LATIN AMERICAN CENTER PANORAMA

(IMAGES DOWN SAMPLED TO 300PX X 300PX)

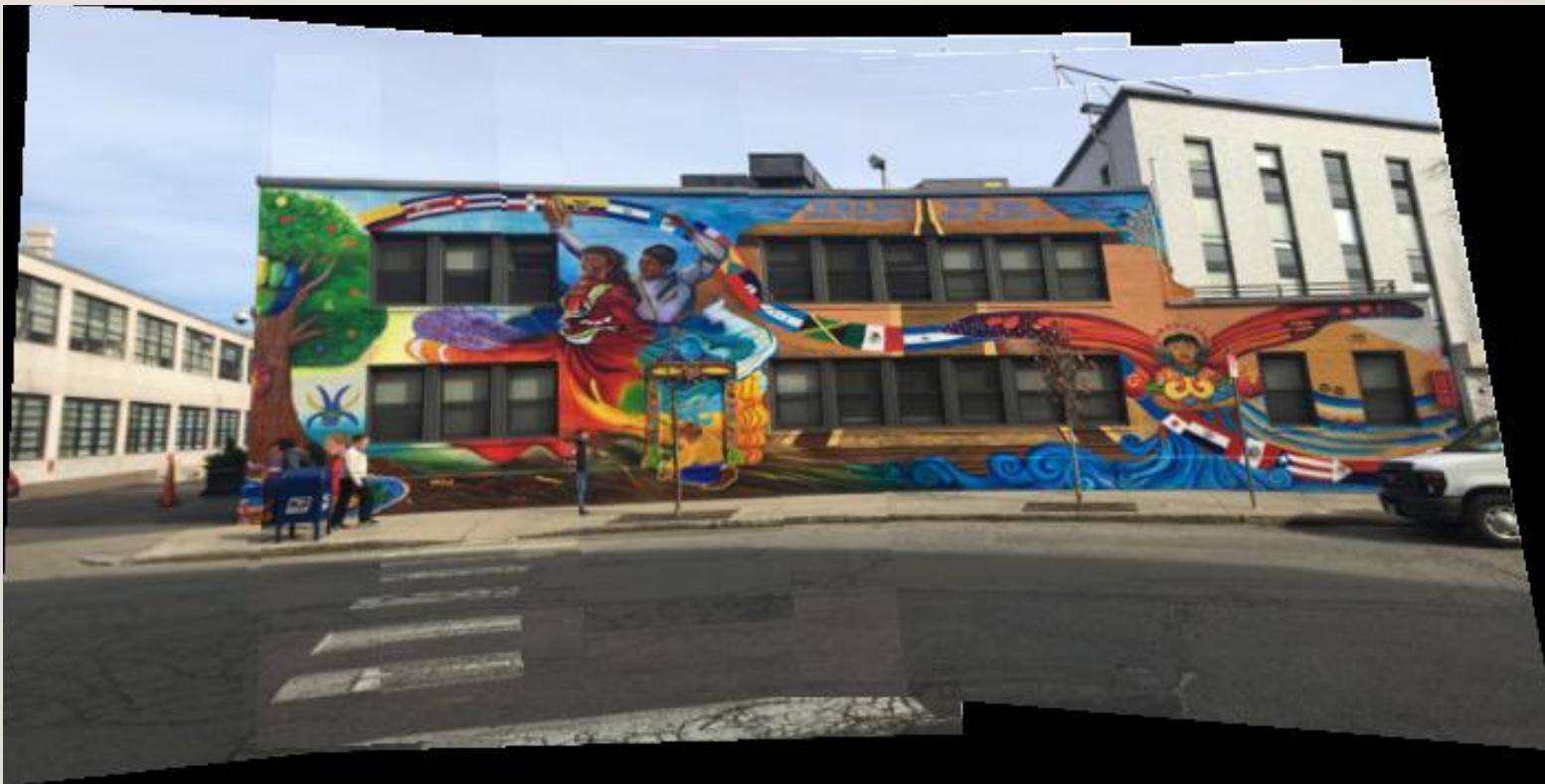
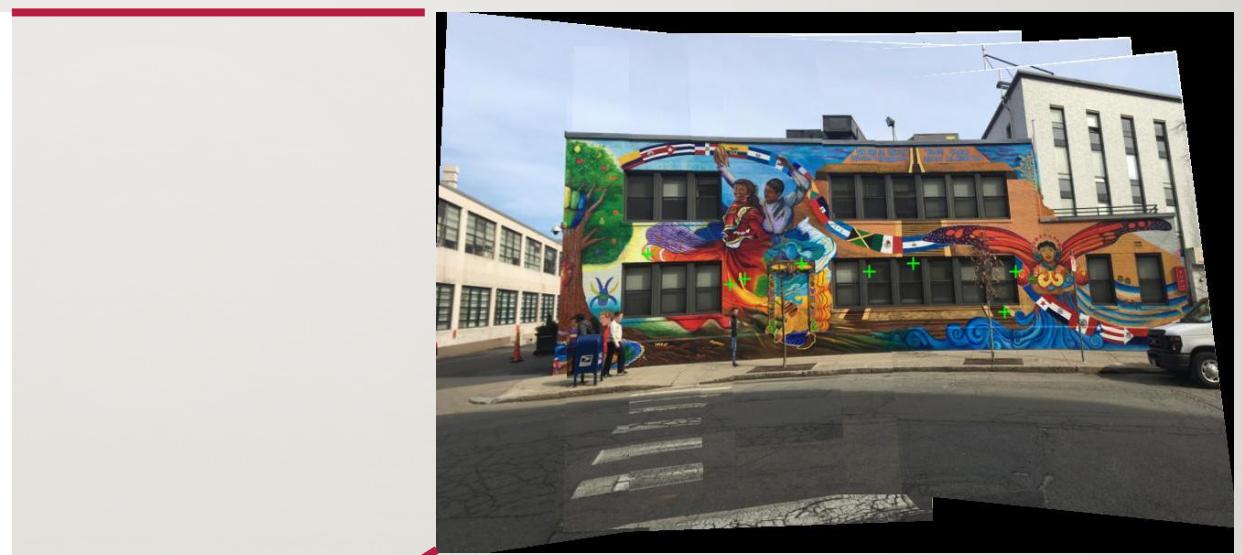
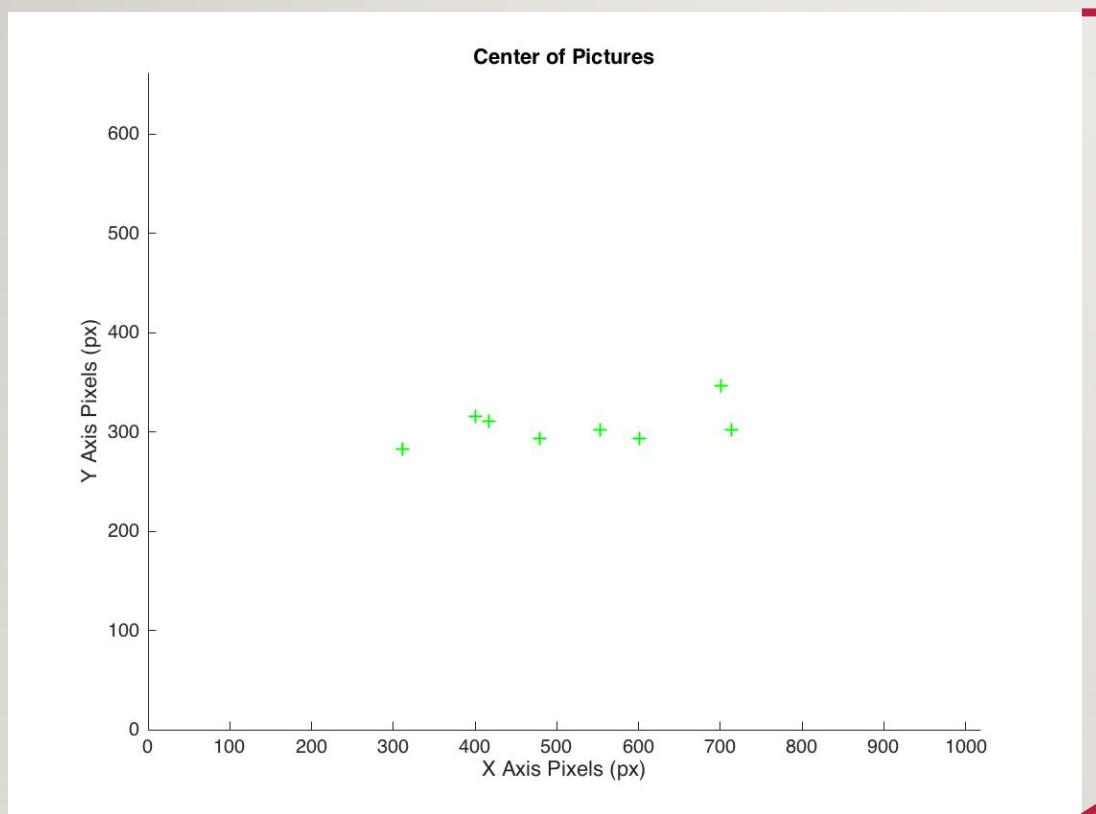


IMAGE CENTERS WITH RESPECT TO PANO



Points overlaid onto actual panorama

CINDER BLOCK WALL: NOT ENOUGH FEATURES

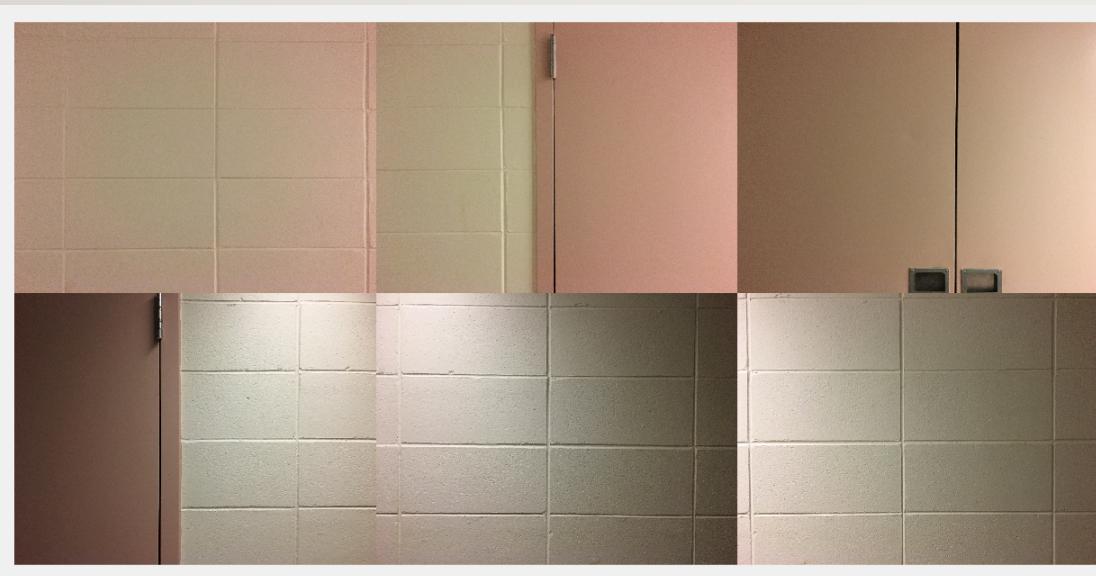


Image 3 didn't have enough features to extract, causing the code to throw an error

MA TLAB R2015b - academic use

HO... PL... APPS FILE VARIABLE CODE SIMULINK ENVIRONMENT RESOURCES

Current Folder <> Northeastern > 2018 Spring > eece5698 > lab4 > scripts

Command Window

```
latino_center/calib
```

Warning: Image is too big to fit on screen; displaying
> In [images.internal.initSize](#) (line 71)
In [imshow](#) (line 309)
In [montage](#) (line 152)
In [create_pano](#) (line 24)

Processing image 2
Processing image 3
Error using [coder.internal.errorIf](#) (line 8)
matchedPoints1 and matchedPoints2 do not have enough p

Error in [estimateGeometricTransform>checkRuntimeStatus](#)
coder.internal.errorIf(status==statusCode.NotEnoughPts)

Error in [estimateGeometricTransform](#) (line 158)
checkRuntimeStatus(statusCode, status);

Error in [create_pano](#) (line 73)
tforms(n) = estimateGeometricTransform(matchedPoin

f>>

matlab: opentoline('/Applications/MATLAB_R2015b.app/toolbox/matlab/images/+image...

DIFFERENT CINDER BLOCK WALL

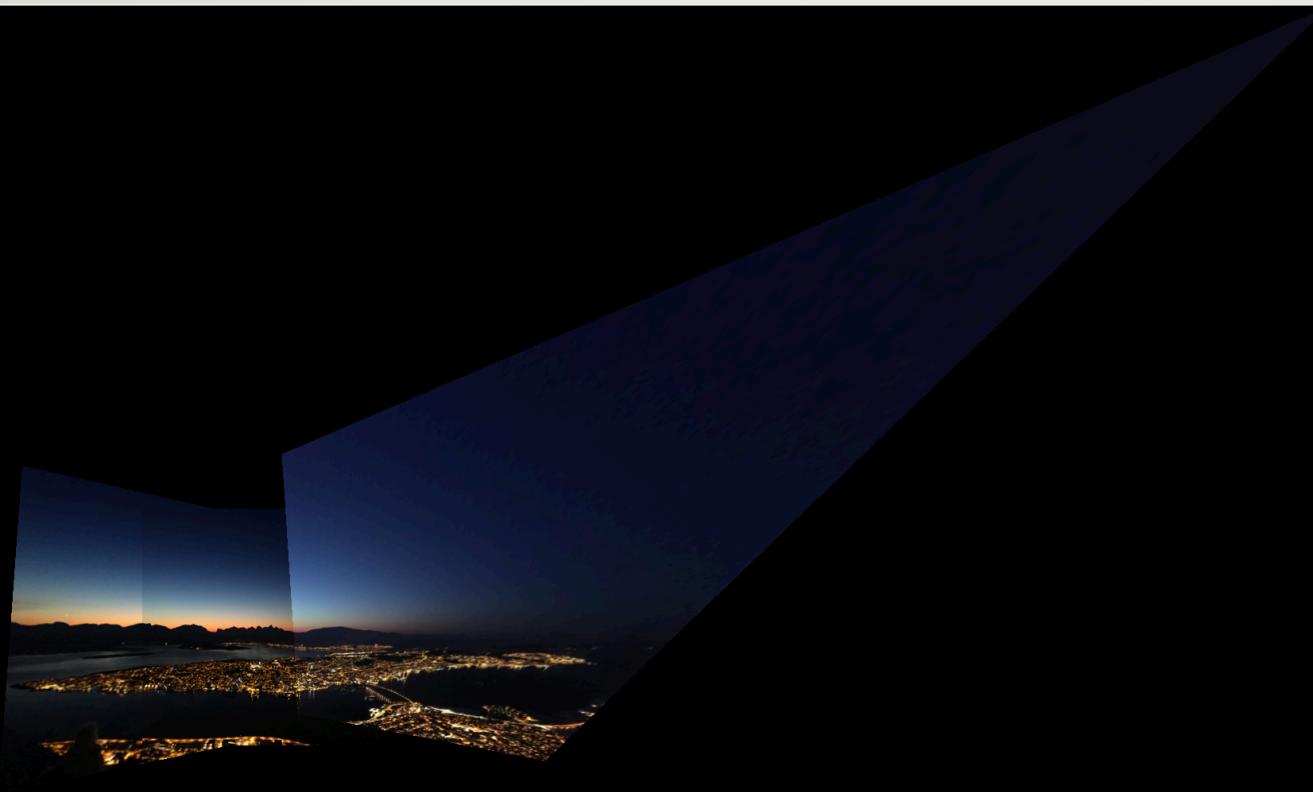
(IMAGES DOWN SAMPLED TO 300PX X 300PX)

Ran code on a cinder
block wall with more
distinct features

Still saw significant
distortions when creating
panorama



TROMSØ PANO (IN PLACE OF CAMPUS)



Played around with included images

“Goldilocks” overlap amount

- Too much overlap, crazy distortions of overall image
- Not enough overlap, script is unable to match enough points
- Need to increase the number of features found in order to match pictures with less overlap