README for Assignment 3 CS698U

abhinav garg

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Contents

1 Part I

In part one I have applied The DLT algorithm to find the homography between the given points.

1. First I have normalized the points so that mean is 0 and S.D. is 1/root(2).

2. Then, I convert non-homogeneous coordinates to homogeneous coordinates.

3. After that we build A matrix as specifed in text and book.

4. Then we do the svd decomposition of this matrix and take the last column

5. We then apply inverse transformation to get the original homography back.

Sample initial images and transformed images can be found in original folder.

2 Part II

In this part I have taken most of the code from MAtlab tutorial and have coded ransac by myself as per the reqiurement of the assignment.

1. We use surf features to extract matching points set.

2. Then we extract the correponding feature points.

3. After this step we apply ransac (For ransac I haven't considered Short circuting which can be implemented usign one commented line

4. First we randomly select 4 points to compute homography between them.

5. Then we apply this homography to other points and compute it's conses set.

6. We finally choose the homography having largest consensus set.

7. We then recompute the homography and use it as our final homography.

The intermediate images and also the final images are present in the respective folders.

3 References

1. panorama stiching tutorial in matlab Most of code for part 2 is taken from this link.