Computer Vision Lab Assignment 6 Report

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December 2023

1 Structure from Motion

I utilized the images with index 5 and 6 in the given list as the initial images and the final results are shown in Figure 1 and Figure 2. From Figure 1 and Figure 2, we can see that the point cloud looks like a fountain in the image and the camera poses look inward, which matches our intuition.
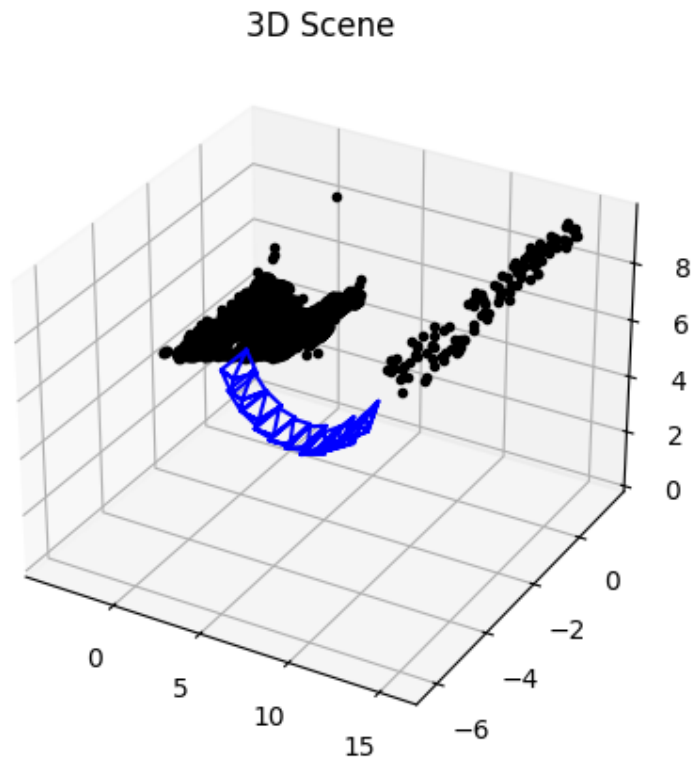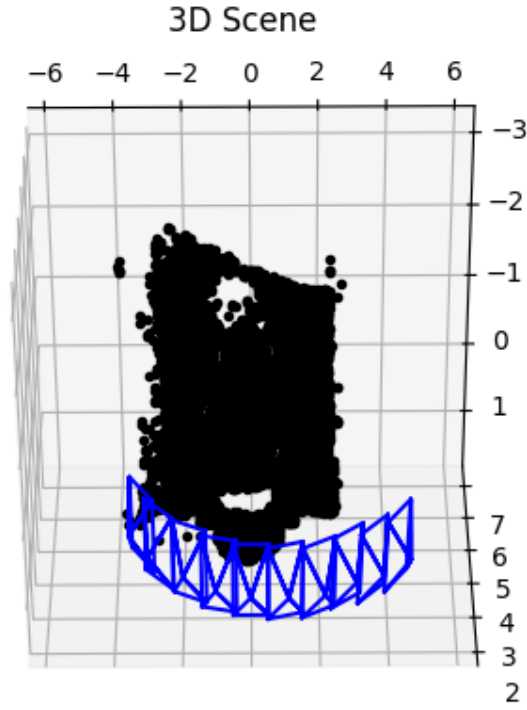

Figure 1: SfM Result Plot 1

Figure 2: SfM Result Plot 2

2 Model Fitting

When running the 'line_fitting.py', I used the default values for the ground truth of k (1) and b (10). With all other parameters in the 'main' function unchanged, the linear regression estimated the k and b to be 0.615965657875546 and 8.961727141443642 while the RANSAC regression estimated the k and b to be 0.9643894946568982 and 9.982921294966832. The regression results are visualized in Figure 3. We can see that the RANSAC algorithm is more robust to outliers.
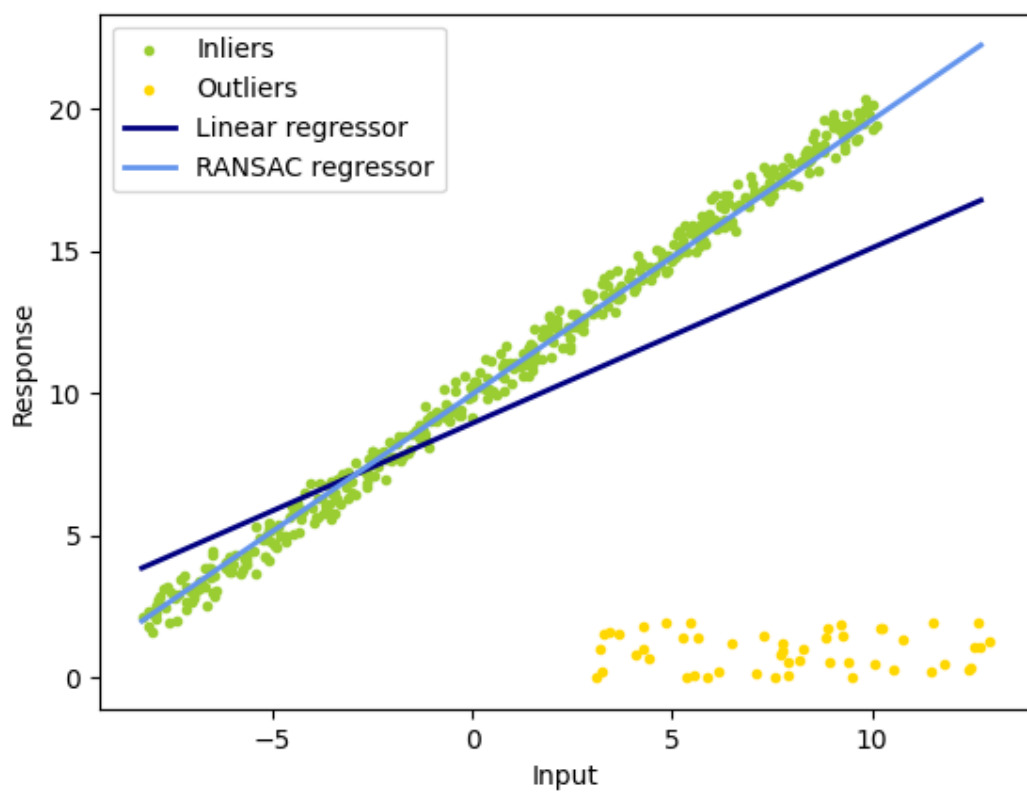
Figure 3: Fitting Result