

After RANSAC

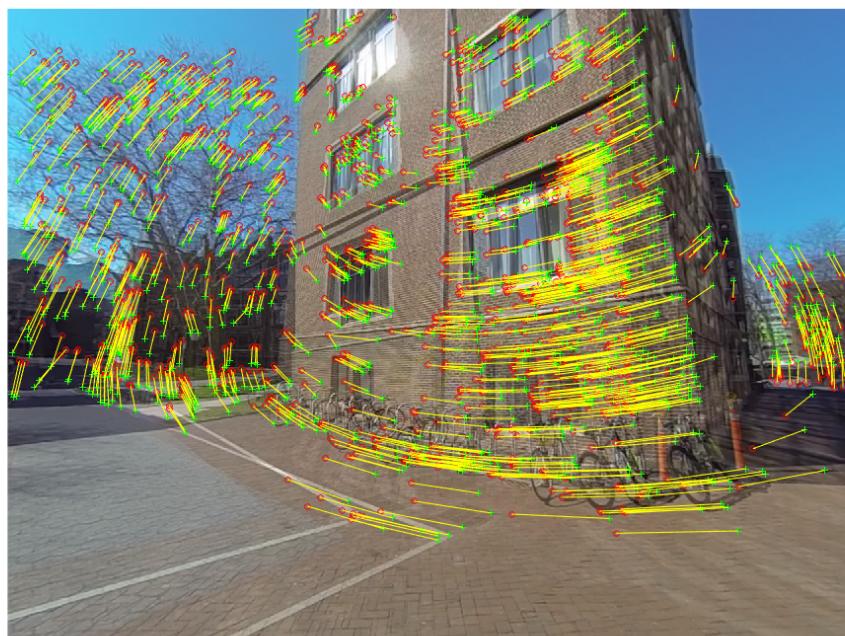
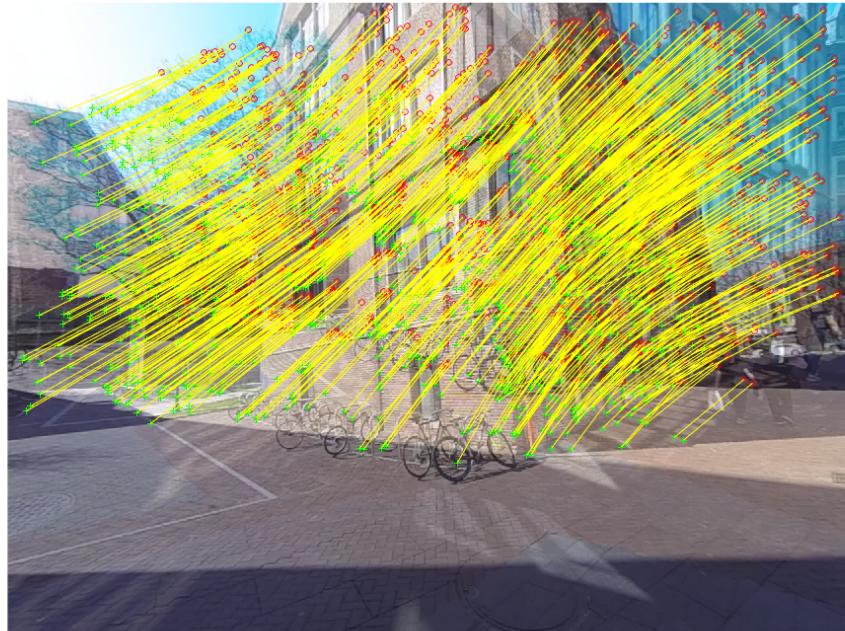


Figure 1: Matches between images [1,4] and [5,6]

$$F = \begin{bmatrix} 1.83625947723393e - 06 & -2.51716925025149e - 05 & 0.00954074607953851 \\ 2.77336539369028e - 05 & -8.0892063262401e - 07 & -0.00245769694374222 \\ -0.0140295140445968 & 0.00103929740763176 & 0.999852501661995 \end{bmatrix}$$

The number of Inliers between images 1 and 4 was 417 out of 470 matches.

$$\begin{aligned} E &= \begin{bmatrix} 0.0545907724488276 & -0.673097985417172 & -0.0563146312113391 \\ 0.725124089635866 & -0.0327622911205873 & 0.687130575186785 \\ 0.0258863359957035 & -0.729705929390185 & -0.0928440933910298 \end{bmatrix} \\ Cset\{1\} &= \begin{bmatrix} -0.735382629589736 \\ 0.0311971080993757 \\ 0.676933621962981 \end{bmatrix} \\ Rset\{1\} &= \begin{bmatrix} 0.0143917426481273 & 0.084523963272568 & -0.996317508315621 \\ 0.0345906392414555 & -0.995866373697126 & -0.083986031077812 \\ -0.999297936263464 & -0.033254554154782 & -0.0172559904829925 \end{bmatrix} \\ Cset\{2\} &= \begin{bmatrix} 0.735382629589736 \\ -0.0311971080993757 \\ -0.676933621962981 \end{bmatrix} \\ Rset\{2\} &= \begin{bmatrix} 0.0143917426481273 & 0.084523963272568 & -0.996317508315621 \\ 0.0345906392414555 & -0.995866373697126 & -0.083986031077812 \\ -0.999297936263464 & -0.033254554154782 & -0.0172559904829925 \end{bmatrix} \\ Cset\{3\} &= \begin{bmatrix} -0.735382629589736 \\ 0.0311971080993757 \\ 0.676933621962981 \end{bmatrix} \\ Rset\{3\} &= \begin{bmatrix} 0.994498337743052 & 0.0856976000083201 & -0.0602409958344102 \\ -0.0773907430675559 & 0.988645071076093 & 0.128808370552532 \\ 0.0705955318257396 & -0.123437614971129 & 0.989838080746786 \end{bmatrix} \\ Cset\{4\} &= \begin{bmatrix} 0.735382629589736 \\ -0.0311971080993757 \\ -0.676933621962981 \end{bmatrix} \\ Rset\{4\} &= \begin{bmatrix} 0.994498337743052 & 0.0856976000083201 & -0.0602409958344102 \\ -0.0773907430675559 & 0.988645071076093 & 0.128808370552532 \\ 0.0705955318257396 & -0.123437614971129 & 0.989838080746786 \end{bmatrix} \end{aligned}$$

PnPRANSAC results for images 2,3,5,6

inliers for image 2: 123 / 202

$$C = \begin{bmatrix} -0.12335768 \\ -0.02667446 \\ 0.12635737 \end{bmatrix}$$

$$R = \begin{bmatrix} 0.97443115 & 0.05954343 & -0.21665296 \\ -0.02380564 & 0.98617886 & 0.16396509 \\ 0.22342161 & -0.15461513 & 0.96238087 \end{bmatrix}$$

inliers for image 3: 185 / 725

$$C = \begin{bmatrix} -0.29259455 \\ 0.03978676 \\ 0.14606147 \end{bmatrix}$$

$$R = \begin{bmatrix} 0.99900499 & 0.03949060 & -0.02072474 \\ -0.03556627 & 0.98581380 & 0.16403106 \\ 0.02690842 & -0.16313075 & 0.98623744 \end{bmatrix}$$

inliers for image 5: 44 / 422

$$C = \begin{bmatrix} -0.40883437 \\ -0.00584841 \\ 0.41703507 \end{bmatrix}$$

$$R = \begin{bmatrix} 0.96745992 & -0.01983794 & -0.25224544 \\ 0.05316520 & 0.99060423 & 0.12600286 \\ 0.24737576 & -0.13531340 & 0.95942458 \end{bmatrix}$$

inliers for image 6: 24 / 659

$$C = \begin{bmatrix} -0.41548468 \\ -0.03244642 \\ 0.40228481 \end{bmatrix}$$

$$R = \begin{bmatrix} 0.96975839 & 0.08004649 & -0.23056717 \\ -0.04697035 & 0.98823782 & 0.14553279 \\ 0.23950459 & -0.13030182 & 0.96211173 \end{bmatrix}$$

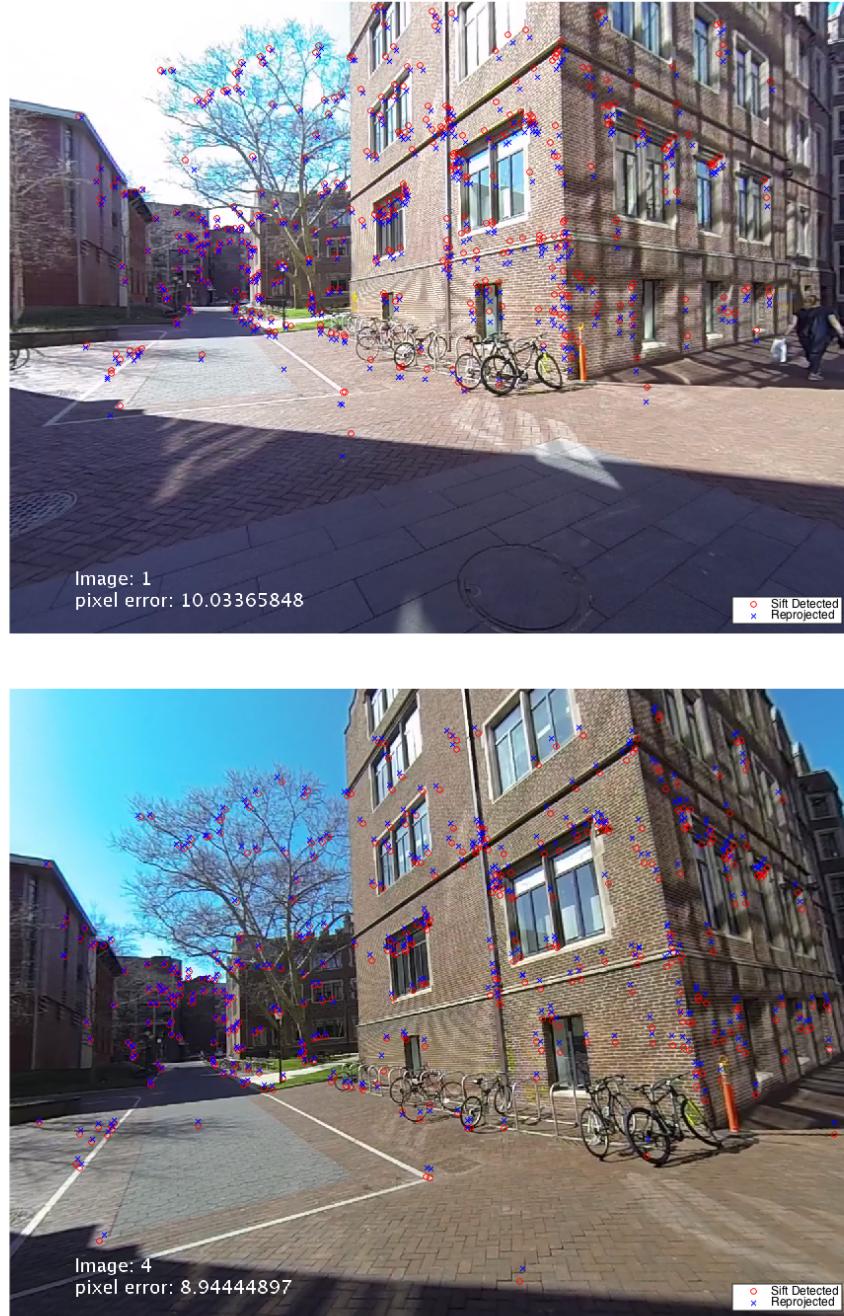


Figure 2:

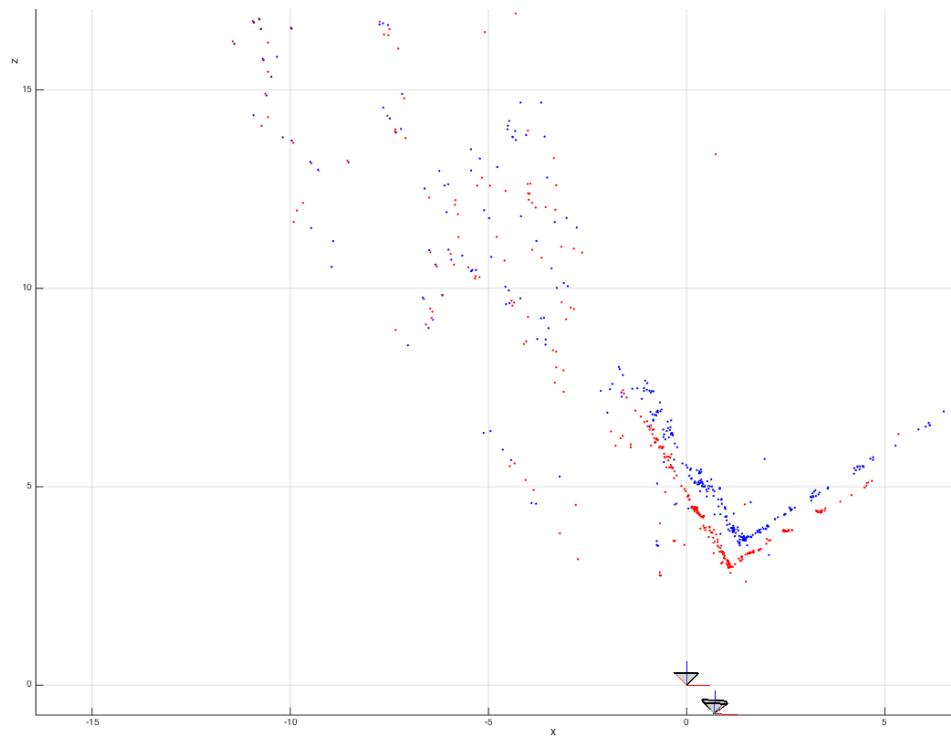


Figure 3: Linear vs NonLinear Triangulation

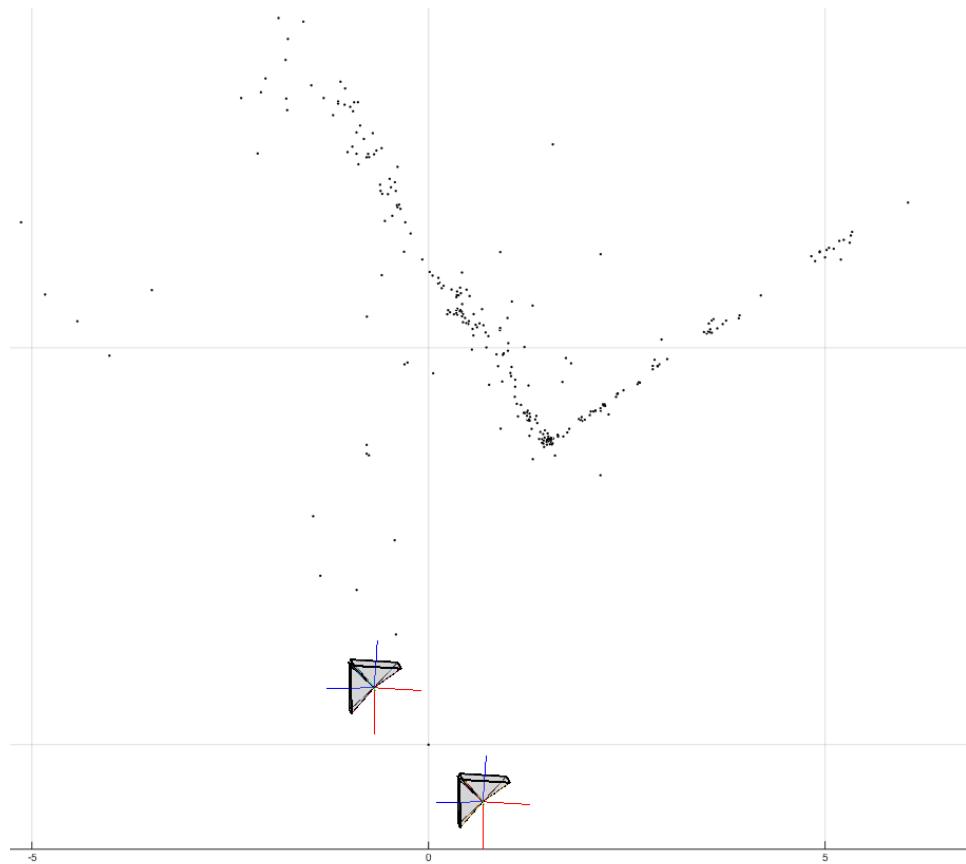


Figure 4: Camera poses, only one is good

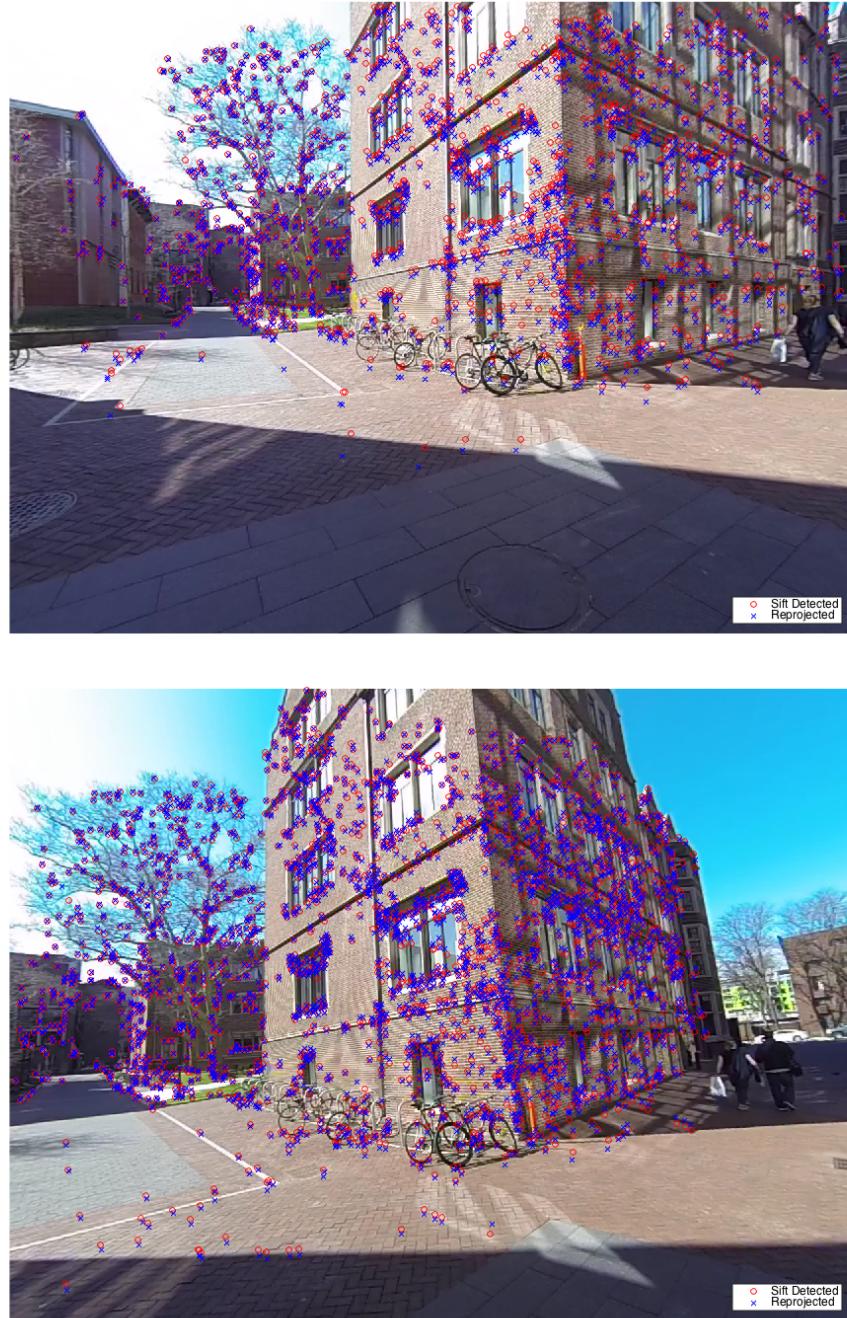


Figure 5: 3D projections to 2D points

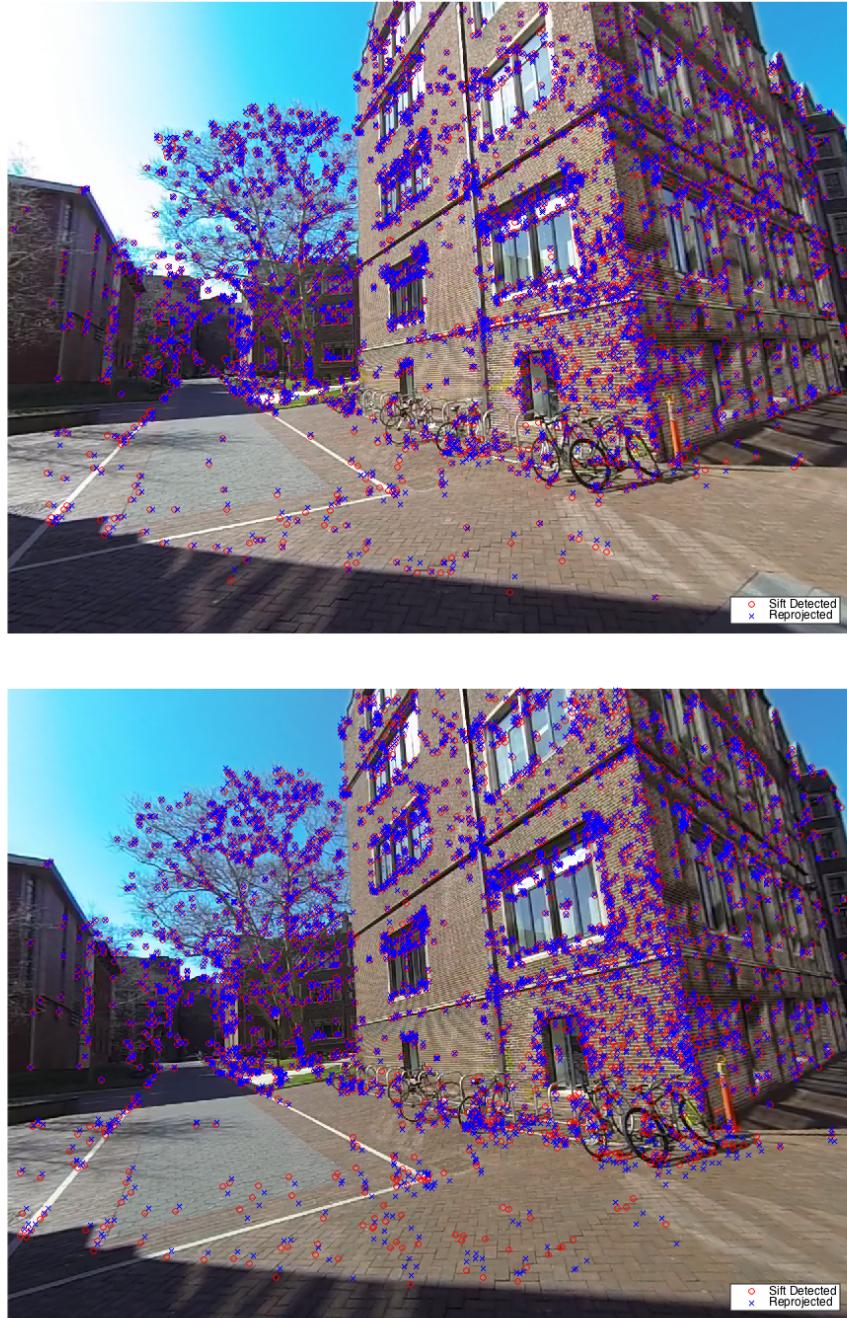


Figure 6: 3D projections to 2D points

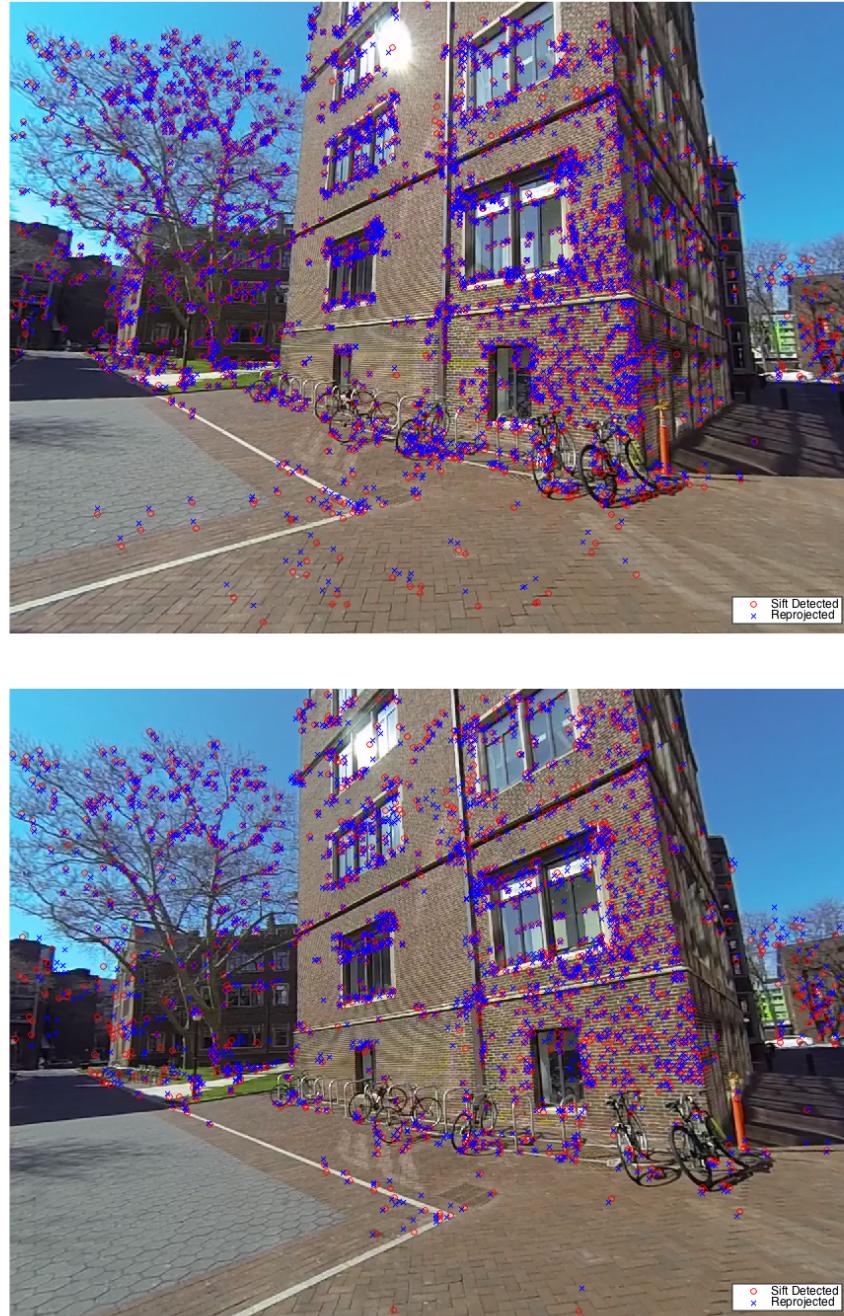


Figure 7: 3D projections to 2D points

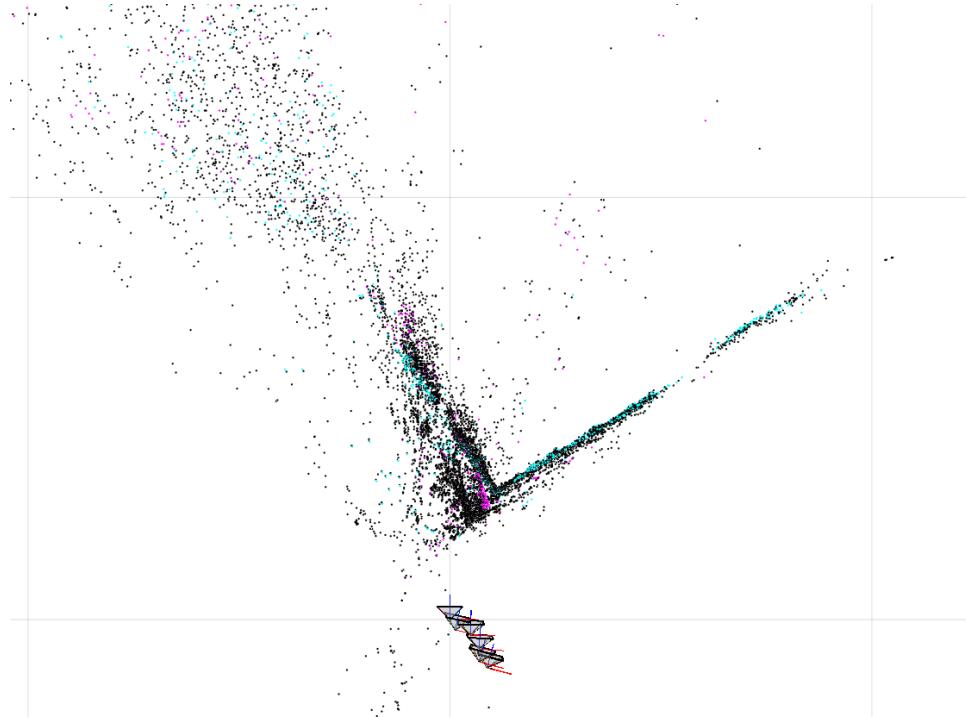


Figure 8: Adding new point with different colors

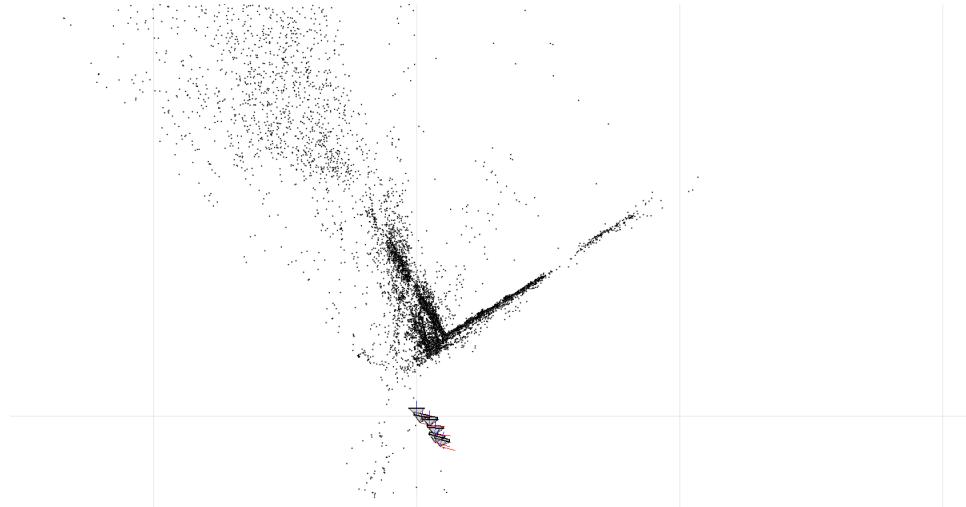


Figure 9: 3D top view

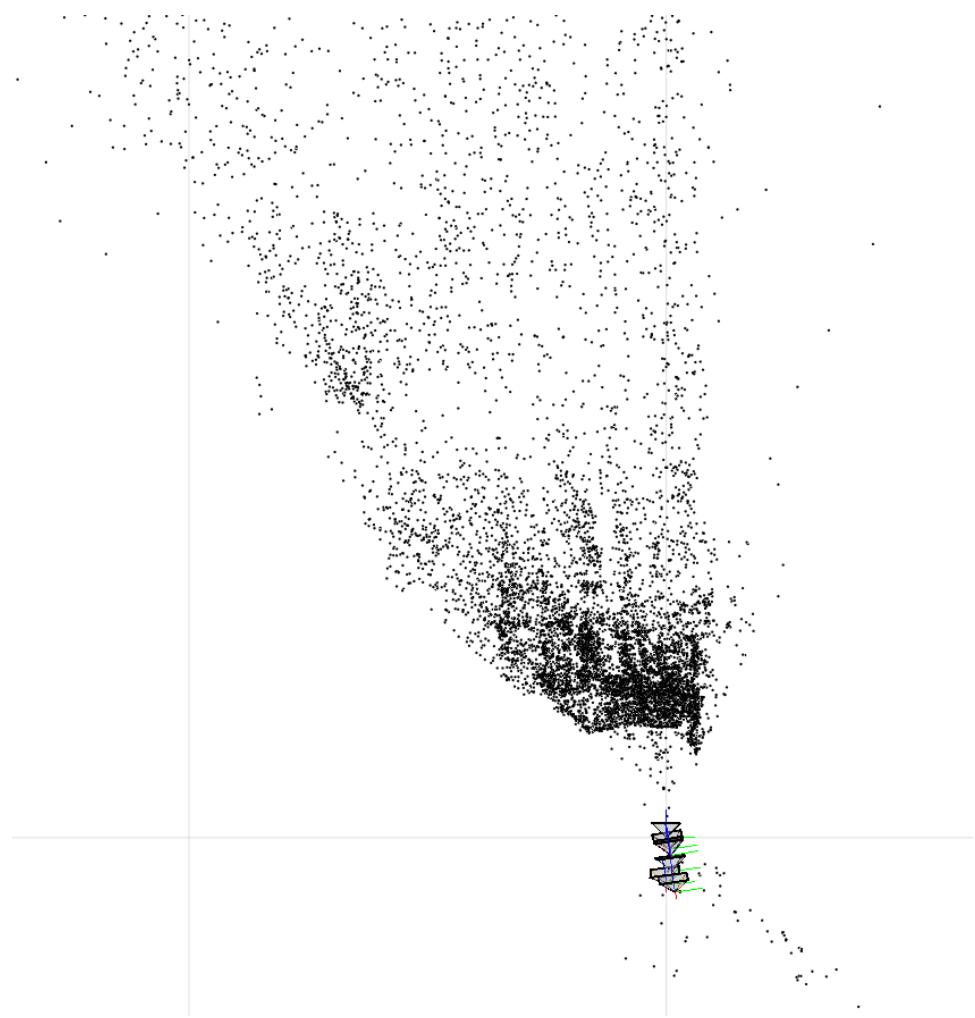


Figure 10: 3D side view

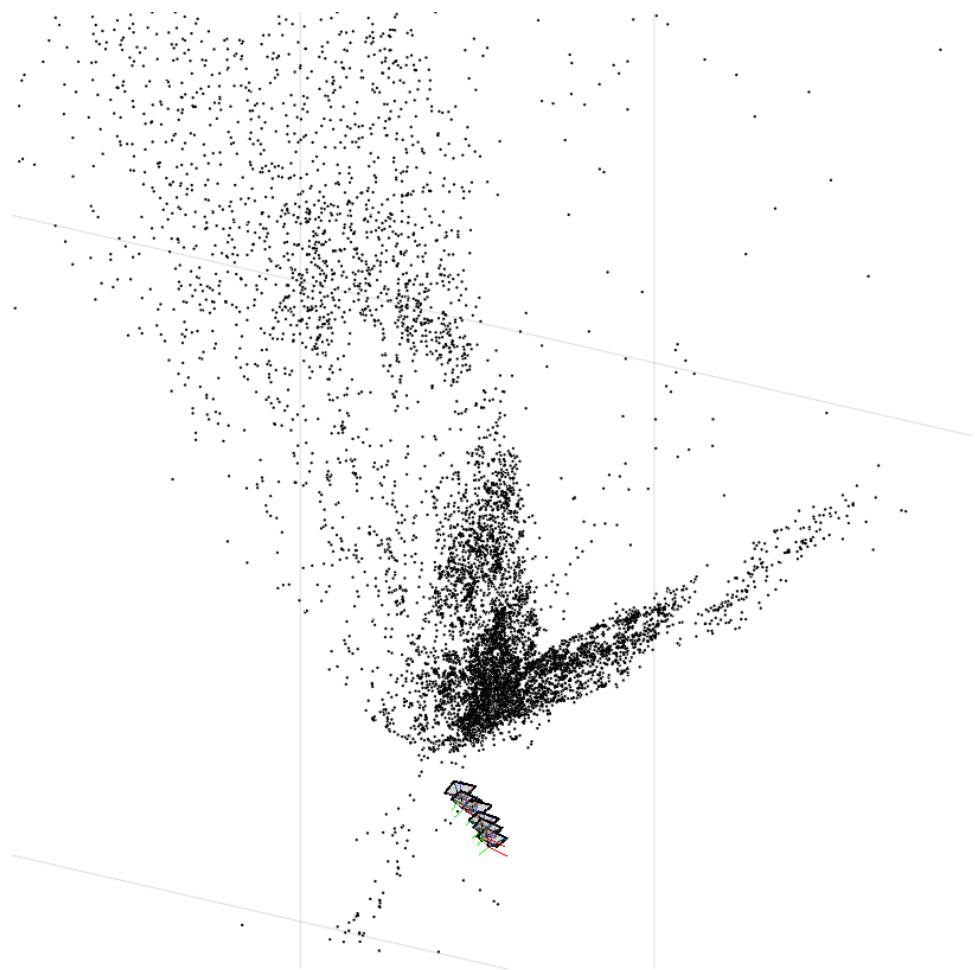


Figure 11: 3D oblique view