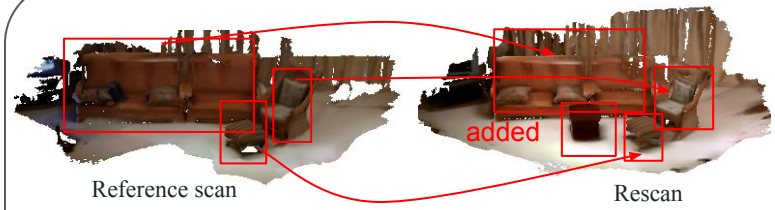
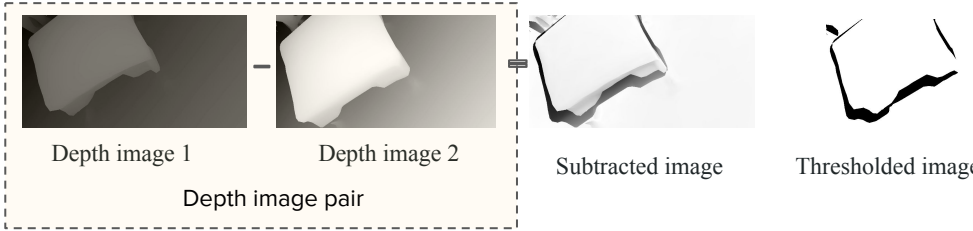
Method Input



Input Data: Aligned reference scan and rescan, camera poses. The changes are highlighted as recorded in the ground-truth.

Step 1

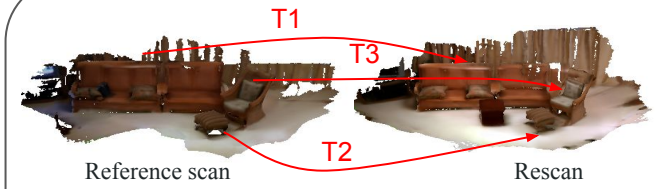



Corresponding 3D points of thresholded image


Fuzed backprojected detections for all pairs (set of camera poses)

(1). Initial Change detection: for all poses render a pair of depth maps, subtract them and threshold the result. Backproject and fuze the results for each pair.

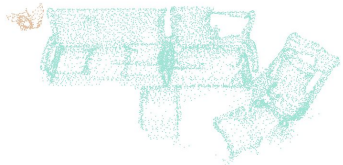
Step 2



(2). Establish correspondences between the reference scan and the rescan. Compute rigid transformations using a RANSAC-iterative scheme.

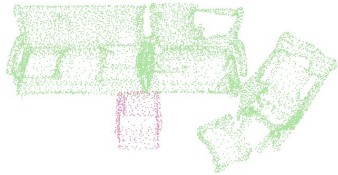
Step 3

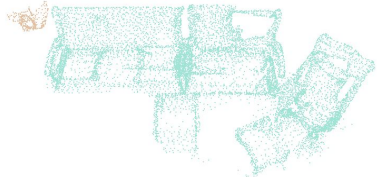

Before optimization


After optimization

(3). Propagate change to neighboring supervoxels, undergoing the same rigid transformation, using a graph cut optimization. A connected component analysis is then applied to form the discovered objects. The formed connected components are the output of the method.

Method Output


Ground-truth connected components


Our connected components