

# SOFTWARE ENGINEERING REPORT 3

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## 1 Completed Work

We tried with OpenCV tutorials and implemented filters for the images just to understand the opencv implementation in image processing. We have uploaded the code in our github.

We followed the following steps for ICP: For each point in the point cloud source, we match the closest point in the reference point cloud. We estimated the combination of rotation and translation using a root mean square point to point distance metric minimization technique which will best align each source point to its match found in the previous step after weighting and rejecting outlier points. And transformed the source points using the obtained transformation. Last step was to Iterate (re-associate the points, and so on).

## 2 Current Work

We are currently working on feature-based sampling for ICP which follows:

- try to find “important” points
- decrease the number of correspondences
- higher efficiency and higher accuracy
- requires pre-processing