

1. We must install pcl. On Arch Linux, we have installed from the Arch User Repository which clones the repository and builds from the source. On Ubuntu, we must follow the necessary steps.
2. We build python-pcl from its repository following the steps mentioned there. We encountered an issue while building, the fix for which is found here: <https://github.com/strawlab/python-pcl/issues/97>.
3. Using pip, we install tensorflow_gpu, keras, numpy, cv2, matplotlib.
4. We clone the repository from: <https://github.com/paradoxdjell/pose-estimation>.
5. We cd into this directory/2d_transformations.
6. We run: python2 generate_training_data.py – this file will apply transformations to source directory mentioned in the file using variable source_directory and will write the transformations to /training_data (where / signifies project root).
7. We must convert both the source pointclouds and the generated training data pointclouds into images. We make use of /2d_transformations/pcd_image.py to do so. Images will be saved in the same directory as the respective pointclouds. However, we are working on updating this script and the generate_training_data script to restructure the training data.
8. Assuming our inputs are the full pointclouds, we can then proceed to run /train.py to begin the training process.

These steps will need modification as some of the scripts will be updated. If a trial training run executes with no errors, we can move to the cloud.