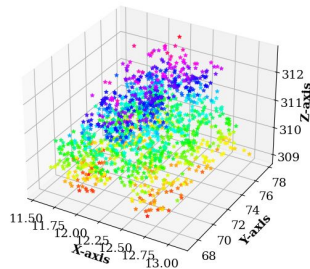


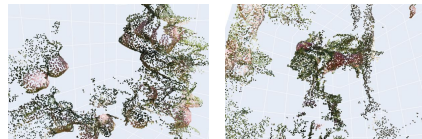


Apple Location Scatter Plot

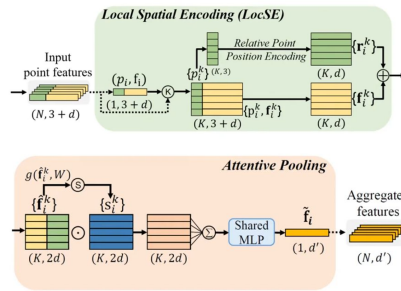


Reduced PCL Data
(6.5 Million Points Approx.,
10 % Apple class PCL only)

Upsample Apple Class PCL Data
KDTree and KNN based
non-deterministic upsampling



PCL Data Patches
(50K Points Approx. Each)



PCL Data Patches
(50K Points Approx. Each)

Sampling PCLs: Random, FPS etc.
RandLA-Net uses grid subsampling,
Inputs highest PCL sizes (like 40K)

Open3D predicts 40K points only,
Grid subsampled data is resampled
Complete inference with KDTree

Input PCL Data
(10 Million
Points Approx.)

1.a Preprocessing
Remove extra
background PCLs

1.b Generate Patches
Create non-overlap patches
Upsample the sparse PCLs

1.c Segmentation Model
Create train, val & test splits
Define segmentation pipeline

1.d Predict PCL Patches
Evaluate the model pipeline
with Accuracy & IoU metrics

1.b.i Data Augmentation
Add extra normal estimate features
Drop RGB, normals randomly etc.
Add random rotations, translations etc.