Source Training phase

Seg_3D_by_PC2D

Source Dataset

3D scenes

3D labels

Generate PC2D datasets

Intensity

Intensity PC2D dataset $(X, Y)_M$

Depth

Depth PC2D dataset $(X, Y)_M$

Normals

Normals PC2D dataset $(X, Y)_M$

Train

2D segmentation models

Ensemble of models

Pseudo-Label Generation phase

Target Dataset

3D scenes

Rendered views for each modality

Infer

Ensemble of models

2D predictions

Back-Project 2D logits then vote

3D Pseudo-Labels

Use depth map for occlusion

Train Final 3D Model

3D pseudo labels

Train

3D Segmentation Model pretrained on Source

= 3D dense point cloud

= 3D semantic segmentation mask

= Rendered view of a 3D pointcloud (2D RGB/greyscale image)

= Frozen weights