Imperial College London

Weekly Meeting : 16

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Outline

01 Previous Training Model

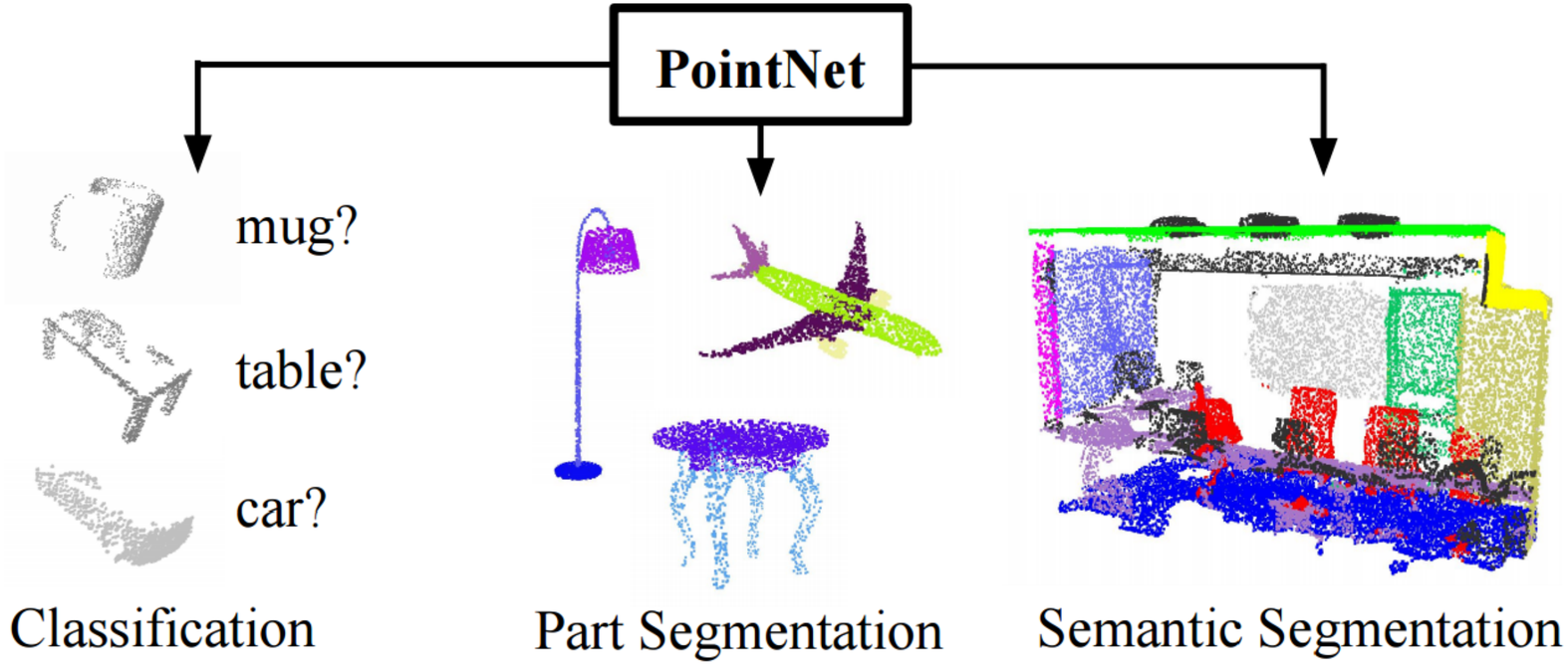
02 Future Direction

Learning from Previous Developed Methods

- PointNet: Deep Learning on Point Sets for 3D Classification and Segmentation
- LiDAR Automatic Unsupervised Segmentation using Segment-Anything Model (SAM) from Meta AI
- KPConv: Flexible and Deformable Convolution for Point Clouds

Pointnet

Result:



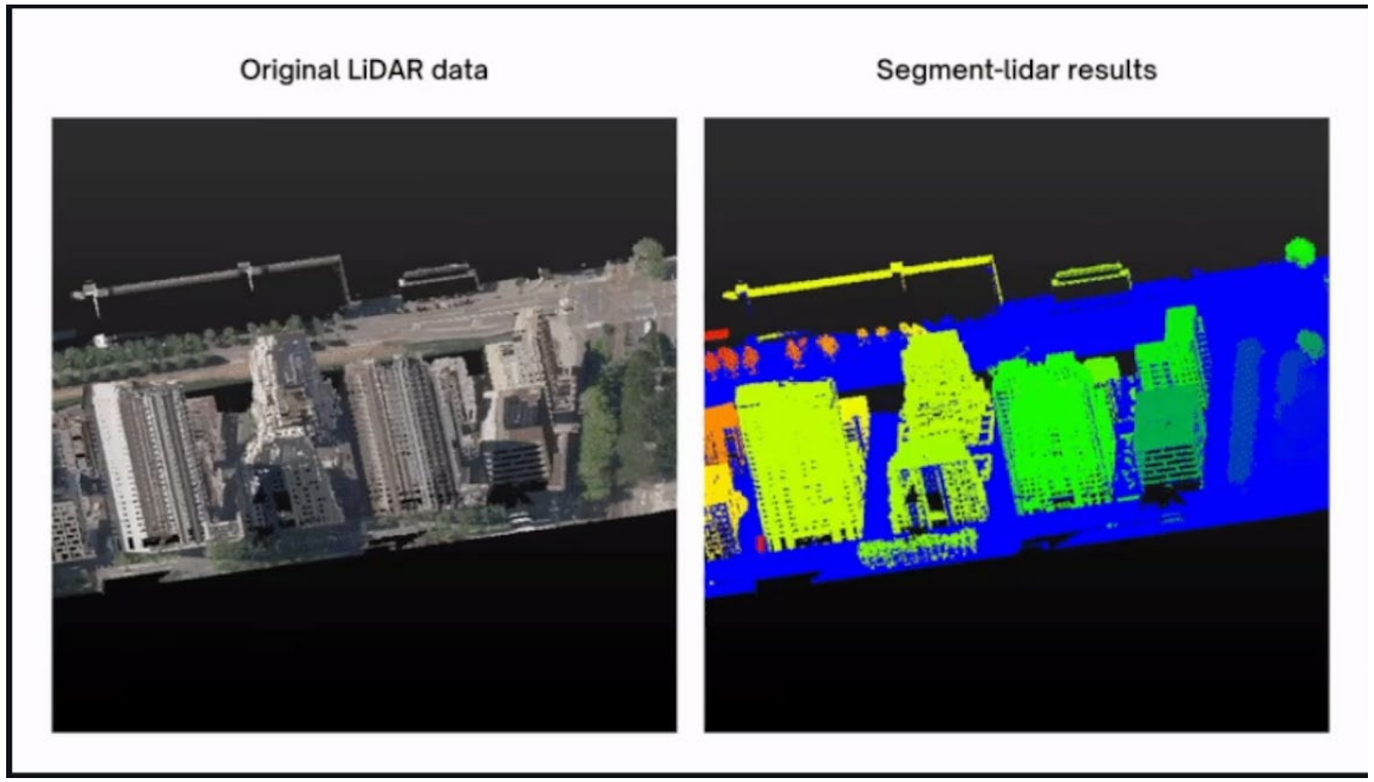
Github : [charlesq34/pointnet2: PointNet++: Deep Hierarchical Feature Learning on Point Sets in a Metric Space (github.com)]

Keywords:

1. Tensorflow
2. The method can be applied for part segmentation and semantic segmentation to classify objects
3. The paper indicates that performance saturates around 1K points, suggesting a potential limitation in dealing with very large point sets.

Segment Lidar

Result:

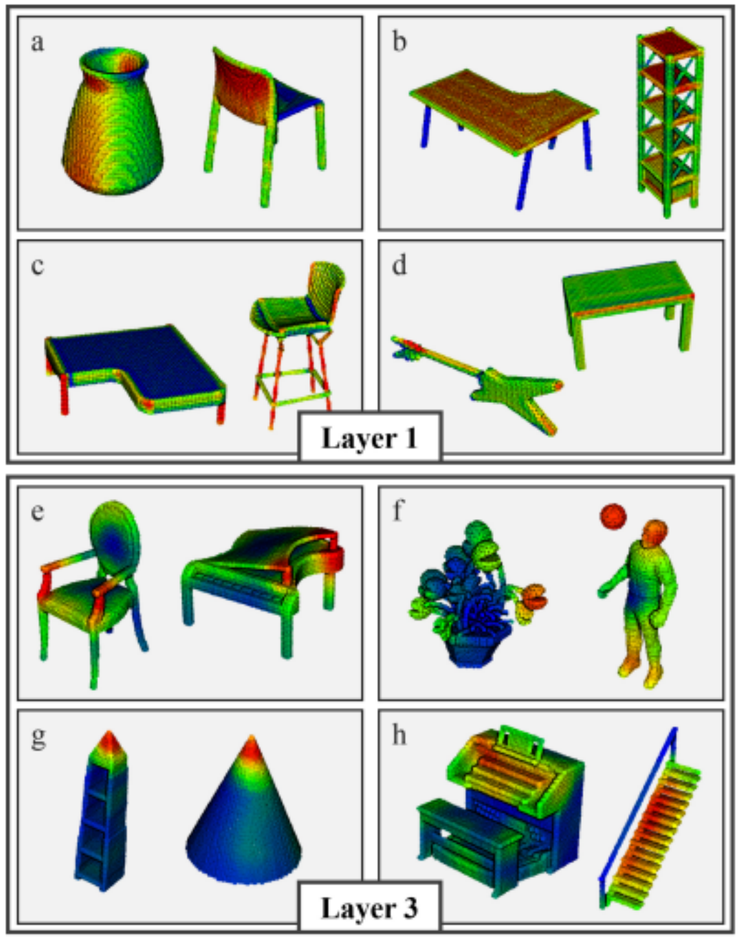


Github : [Yarroudh/segment-lidar: Python package for segmenting LiDAR data using Segment-Anything Model (SAM) from Meta AI. (github.com)]

Keywords:
1. Pytorch
2. There is no paper found for this method

KP Conv

Result:



Github : [HuguesTHOMAS/KPConv-PyTorch: Kernel Point Convolution implemented in PyTorch (github.com)]

Keywords:
1. Pytorch
2. RGB Datasets
3. Indoor application

Future Direction

1. Segmentation process can work properly after labelling the data
2. Labelling process includes acquiring the datasets from ground occurrence
3. It is necessary find point cloud datasets containing information of landslide along embankment system