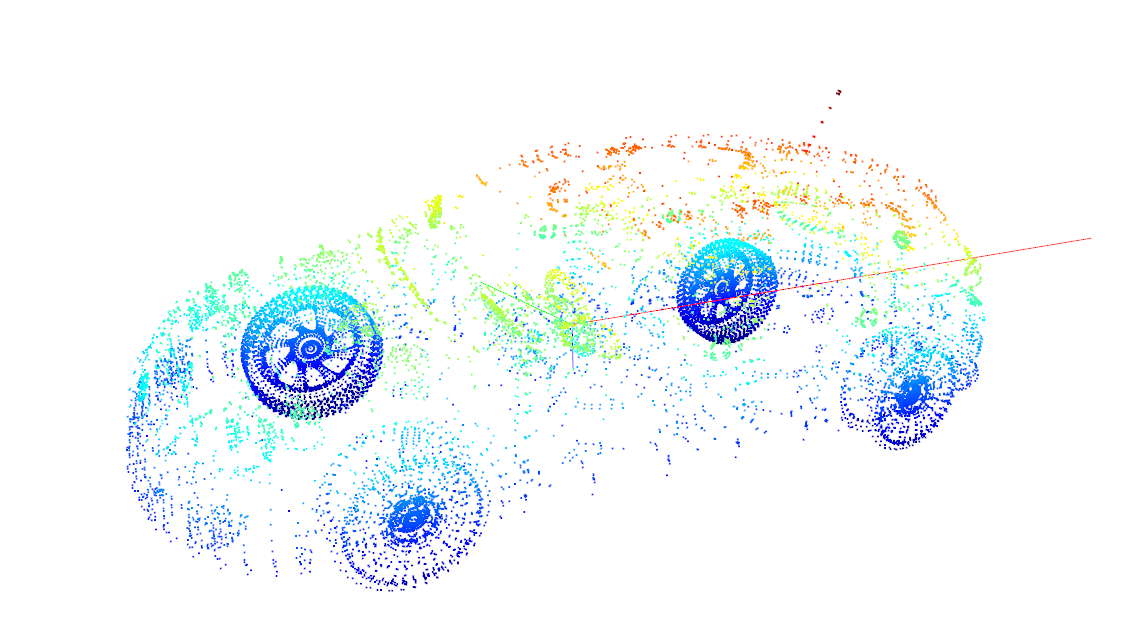
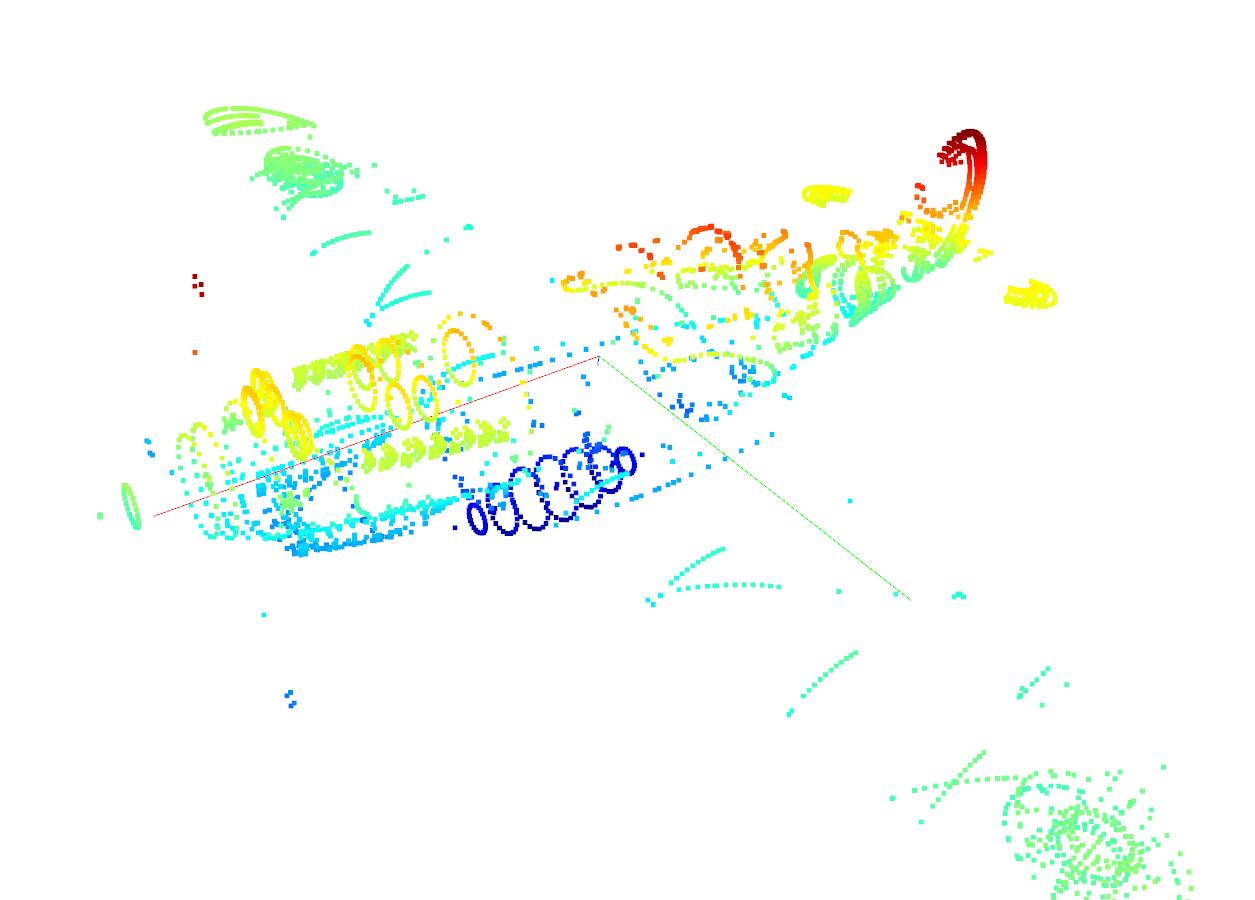
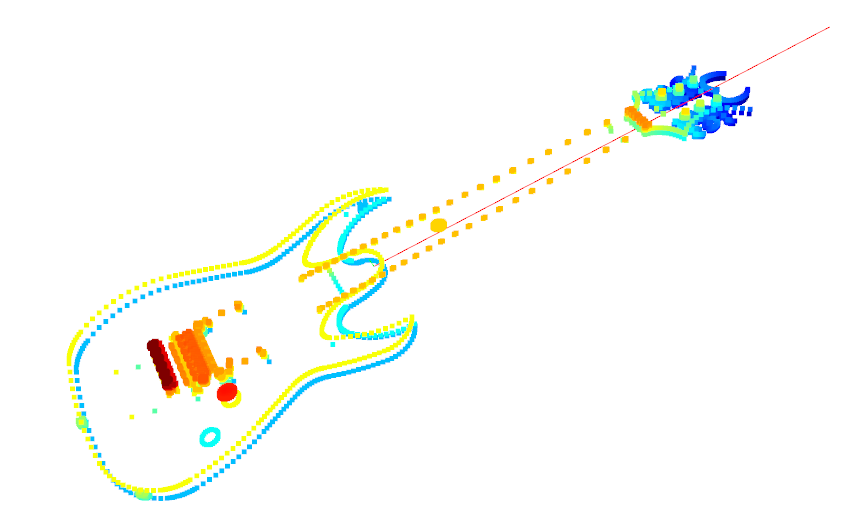
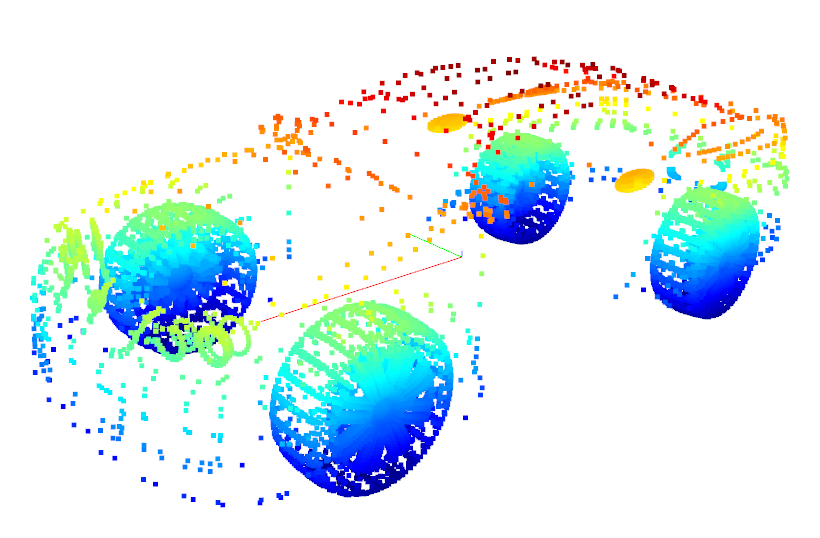
1. PCA - Python结果：

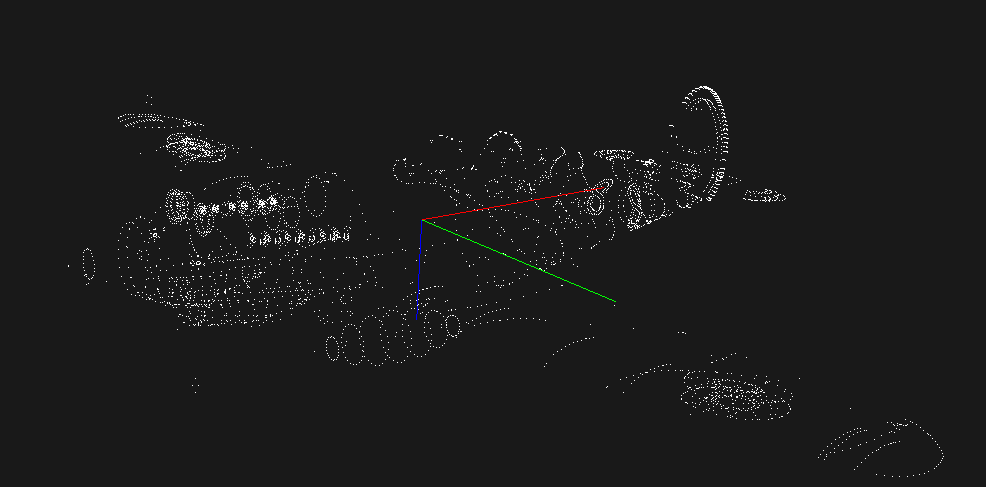


/airplane/test/airplane\_0645.ply /car/test/car\_0221.ply

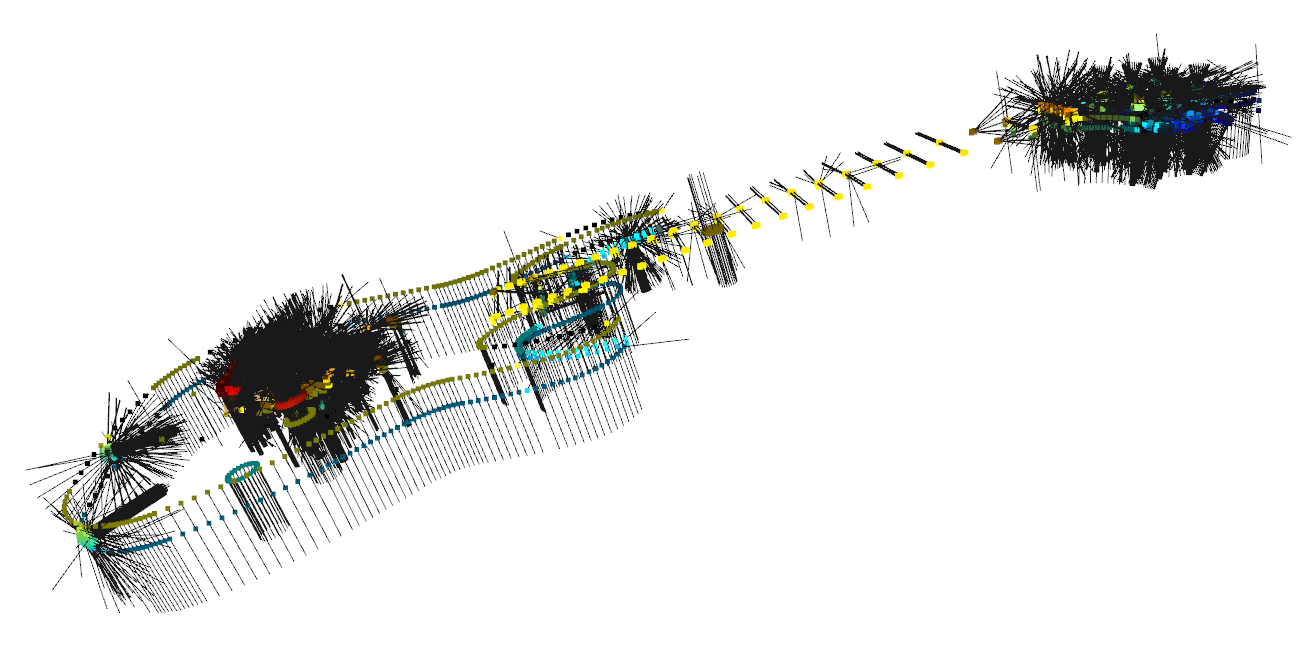
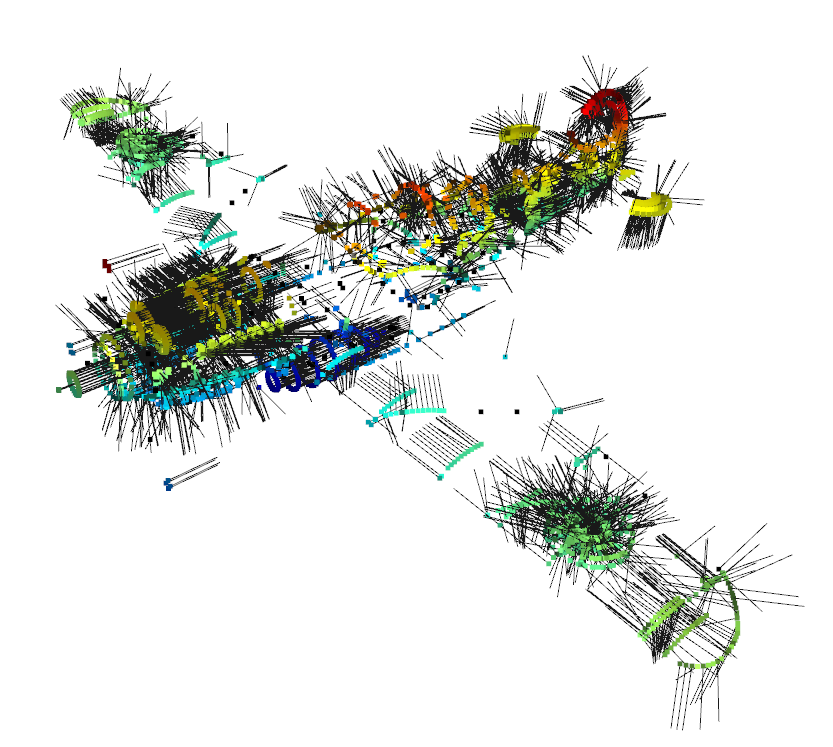
 

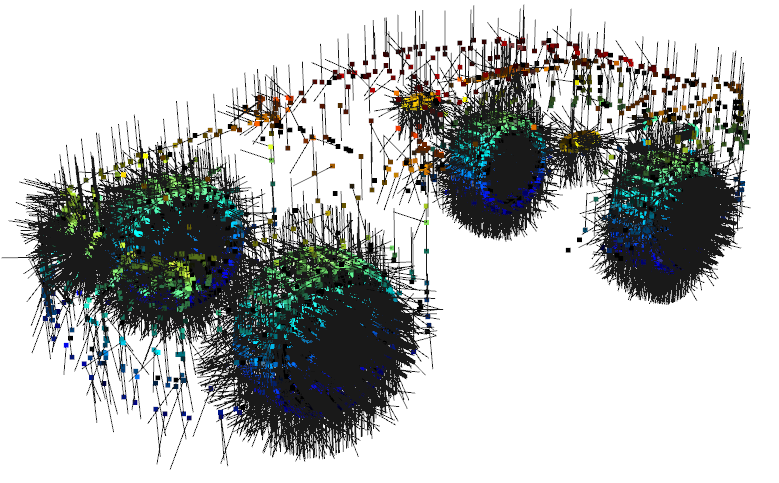
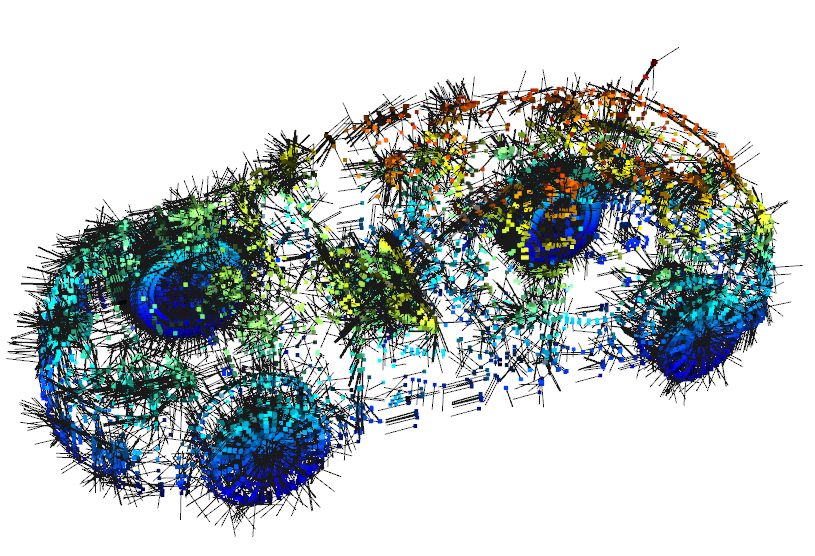
/guitar/test/guitar\_0166.ply /car/train/car\_0081.ply

PCA - C++结果：(只展示了第一个点云）



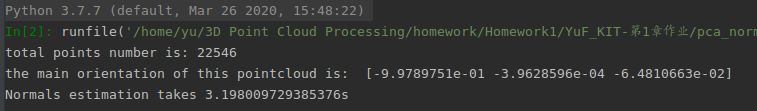
1. Normals estimation - Python结果：



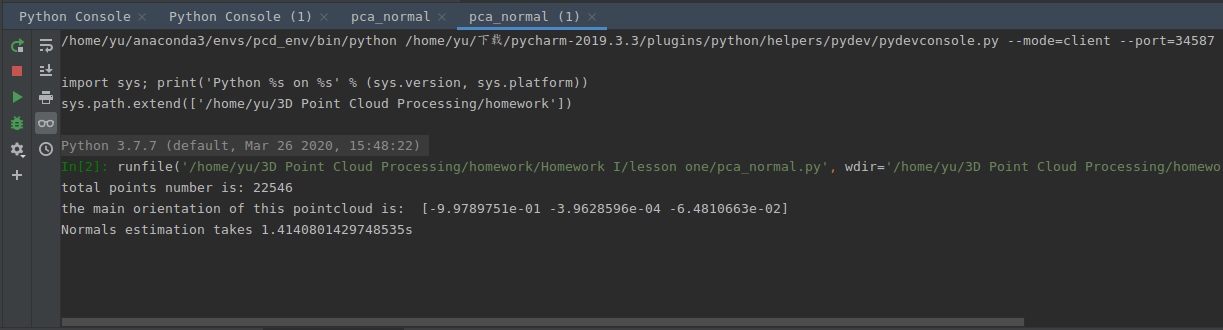


以下测试了python和c++中对于22546个点法向量估计的速度：

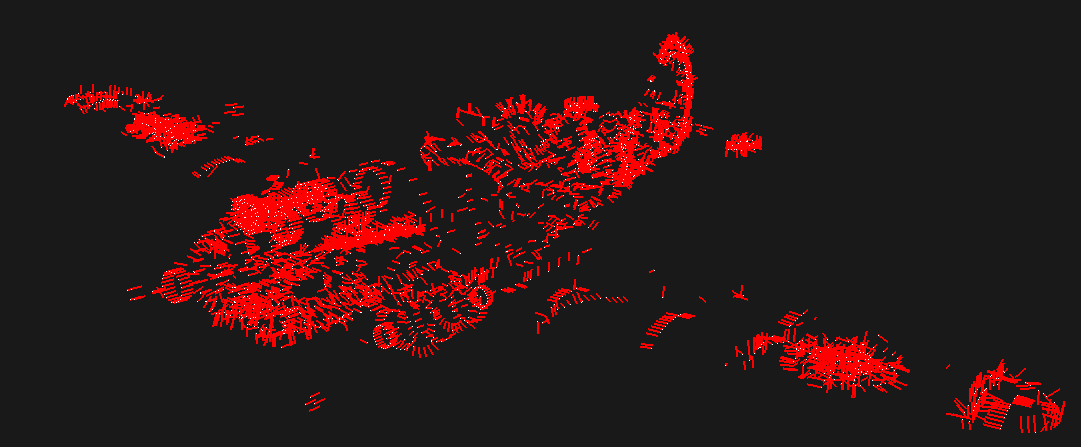
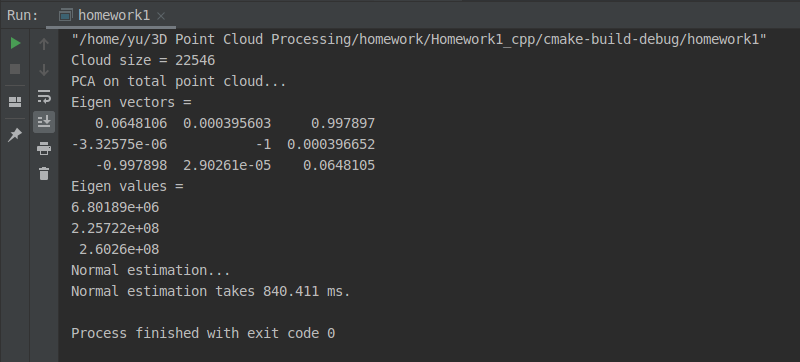
python基于numpy，大约3.19秒



python基于FastEigen3x3（pybind11），大约1.41秒



C++结果：(只展示了第一个点云）, 基于Eigen库。



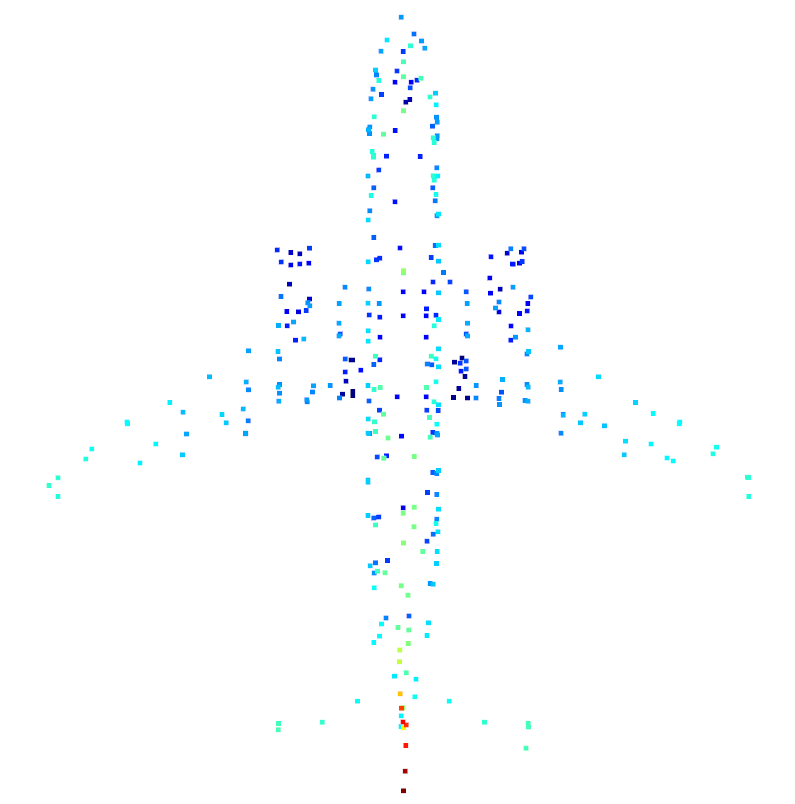
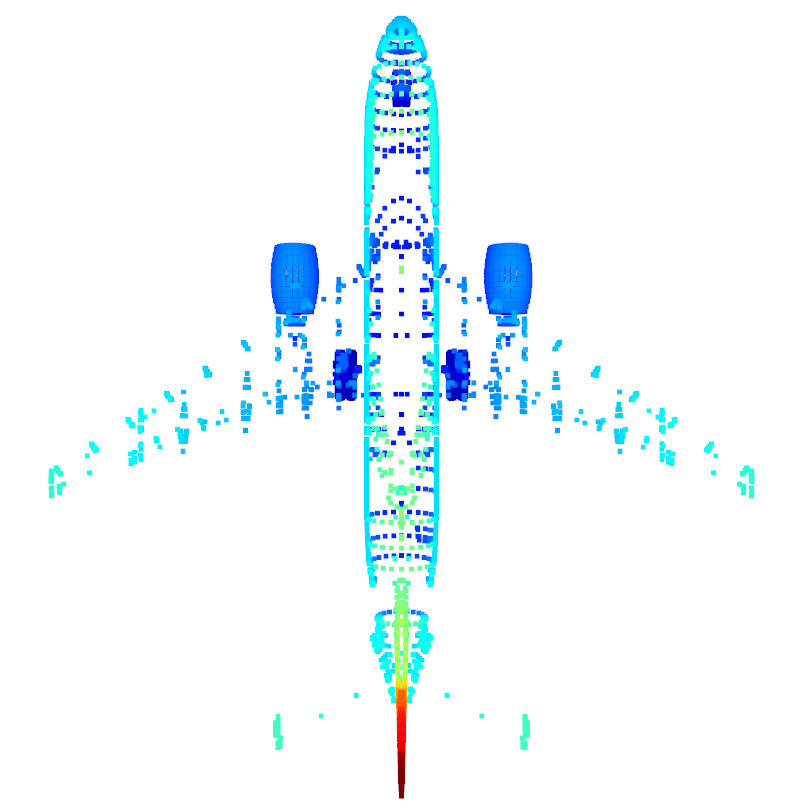
1. Voxel Downsampling

目标文件：

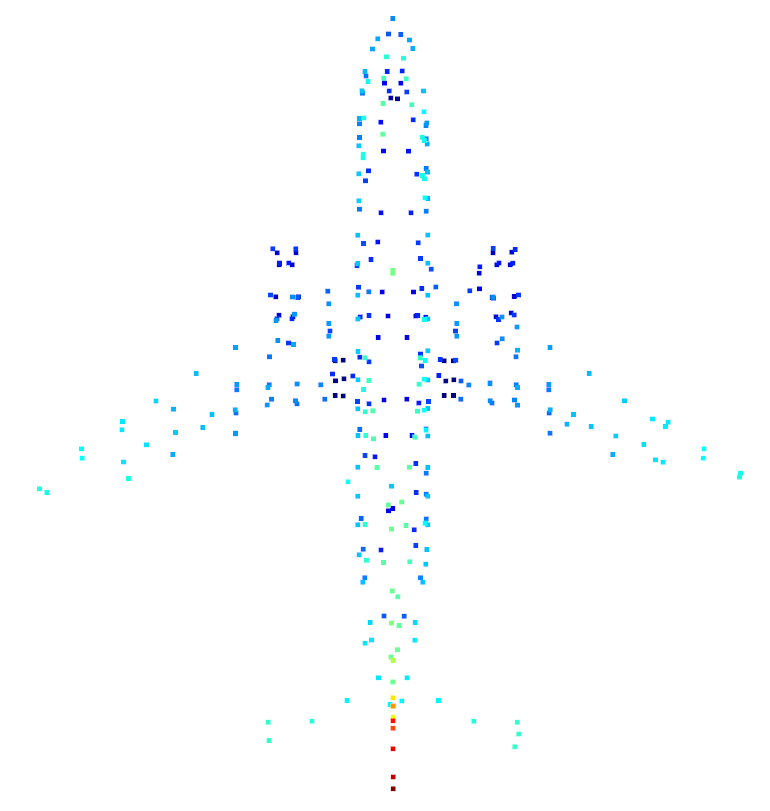
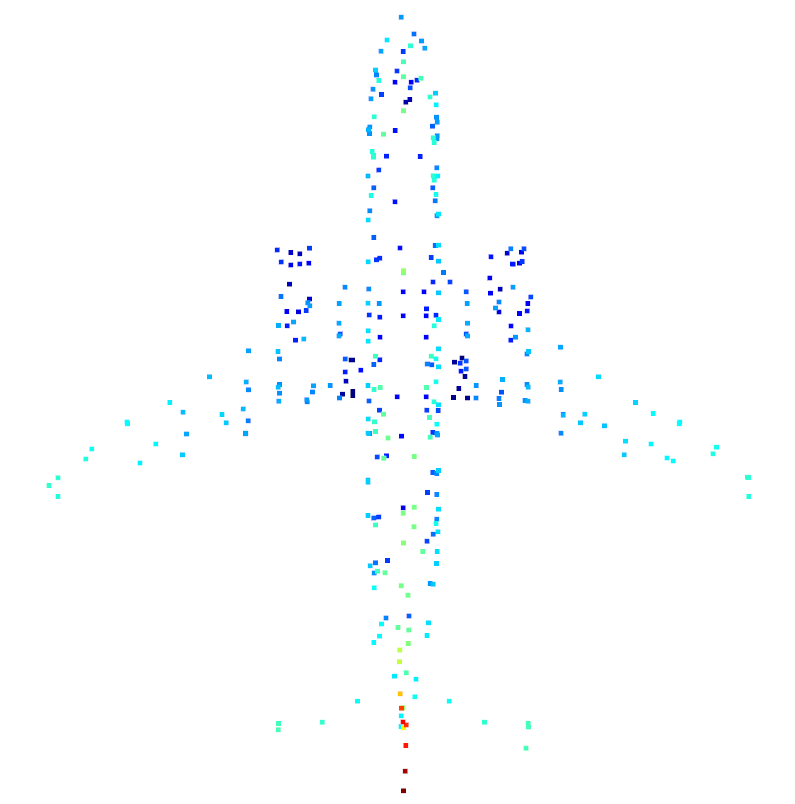
/airplane/train/airplane\_0137.ply

降采样leaf\_size = 100，该数据尺度较大。其中x\_min = 0.0, x\_max = 2372.34。

原point cloud: Random voxel down sample:



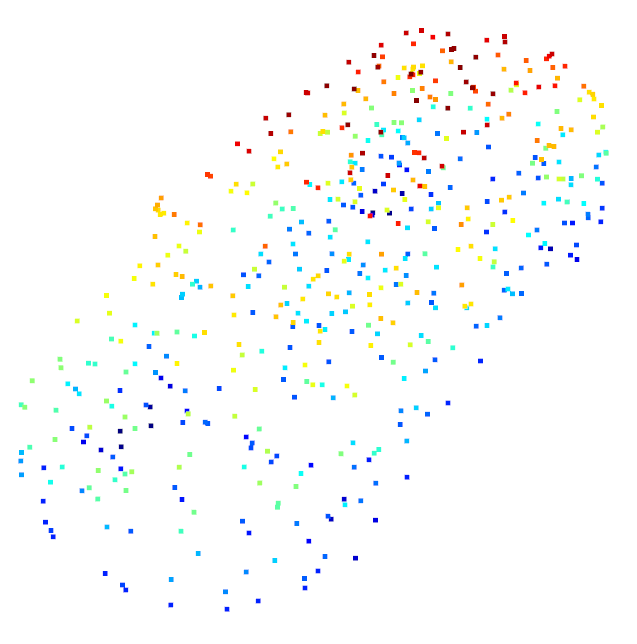
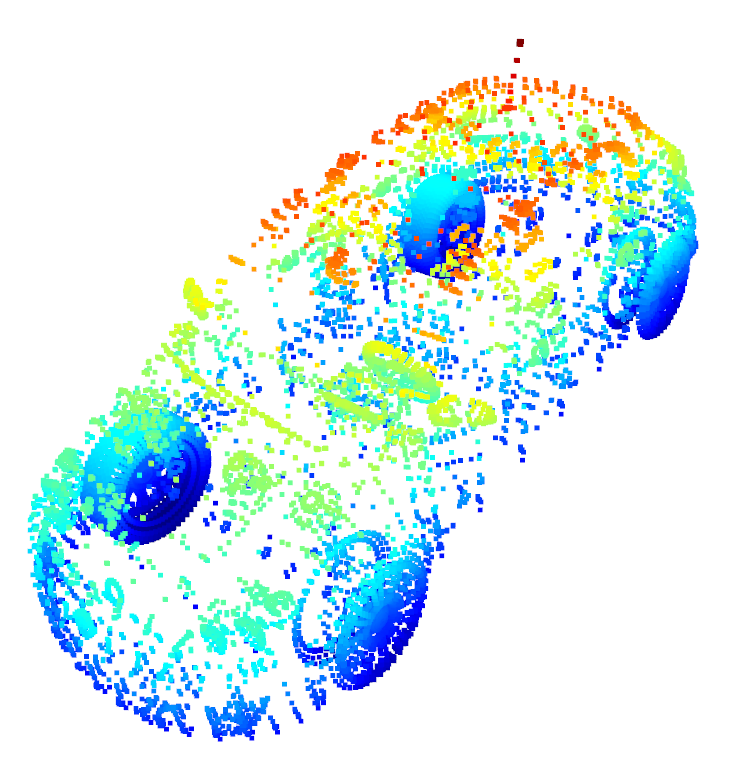
Random voxel down sample: Centroid voxel down sample:



目标文件：/car/test/car\_0221.ply

降采样leaf\_size = 0.25，该数据尺度小，其中x\_min = 0.247776, x\_max = 2.29653。

原point cloud: Random voxel down sample:



Random voxel down sample: Centroid voxel down sample:

