SEG4D

Segmentation for Cultural Heritage Diagnosis

Comunidad de Madrid

Version: Alpha

USER GUIDE

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3 Other methods

This tab includes algorithms with different processings.

Noise reduction

This tool allows you to reduce the Gaussian noise of the point cloud from an anisotropic filter, where the anisotropic neighborhoods were computed to both denoise the smooth regions and to preserve the sharp features, i.e. edges and corners.

The implementation is based on Z. Xu et al. [1].

[1] Z. Xu and A. Foi, «Anisotropic Denoising of 3D Point Clouds by Aggregation of Multiple Surface-Adaptive Estimates,» in IEEE Transactions on Visualization and Computer Graphics, vol. 27, no. 6, pp. 2851-2868, 1 June 2021, doi: 10.1109/TVCG.2019.2959761

Point cloud voxelization

Point clouds are very flexible, but irregular, geometry types. The voxel grid is another geometry type in 3D that is defined on a regular 3D grid, whereas a voxel can be thought of as the 3D counterpart to the pixel in 2D.

From point cloud, the voxel grid can also be created from a point cloud using the method create_from_point_cloud. A voxel is occupied if at least one point of the point cloud is within the voxel. The color of the voxel is the average of all the points within the voxel. The argument voxel_size defines the resolution of the voxel grid.

For using this tool, you only need to choose a point cloud and execute the algorithm with "Run".

Potree Converter

Potree is web-based point cloud viewer. Its main function is that it allows you to see large point clouds due to its pyramidal loading scheme.

For using this tool, you only need to choose an output directory to save data and execute the algorithm with "Run". Then, open your output directory folder and double click the HTML file named "index.html".