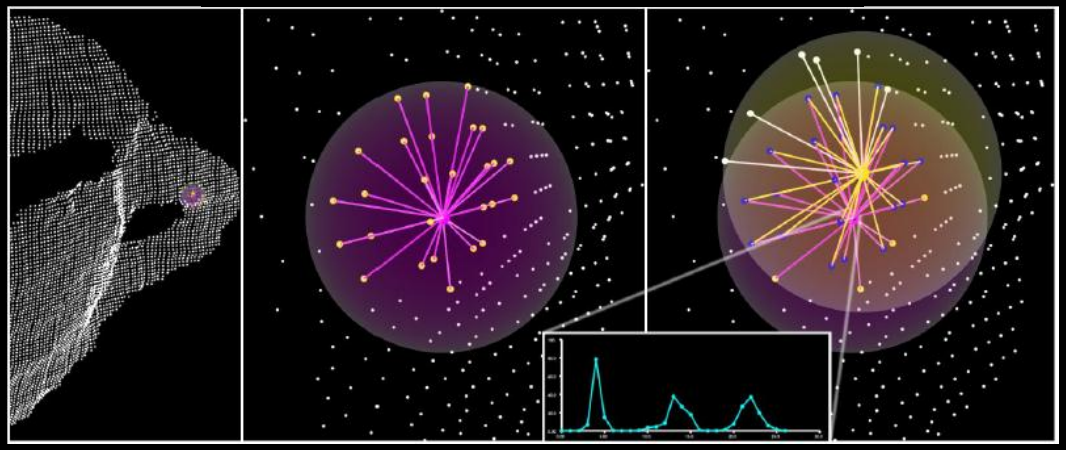
pointcloudlibrary



PCL Laboratory 2
Exercises

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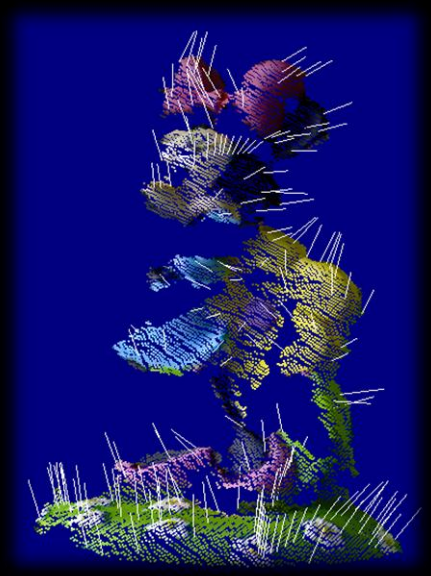
DIPARTIMENTO
DI INGEGNERIA
DELL'INFORMAZIONE

demo_compute_normals

- Normals are computed at every point of the input point cloud
- One normal every 100 is visualized with PCL viewer
- Try this demo with these two input point clouds:
  - "../dataset/minimouse1_segmented.pcd" (without ground plane)
  - "../dataset/minimouse1.pcd" (with ground plane)

- **Exercise 1:**
  - Compute normals with two different values (0.03 e 0.002) of the «search radius» parameter and compare the results with the visualizer in 2 viewports side-by-side.

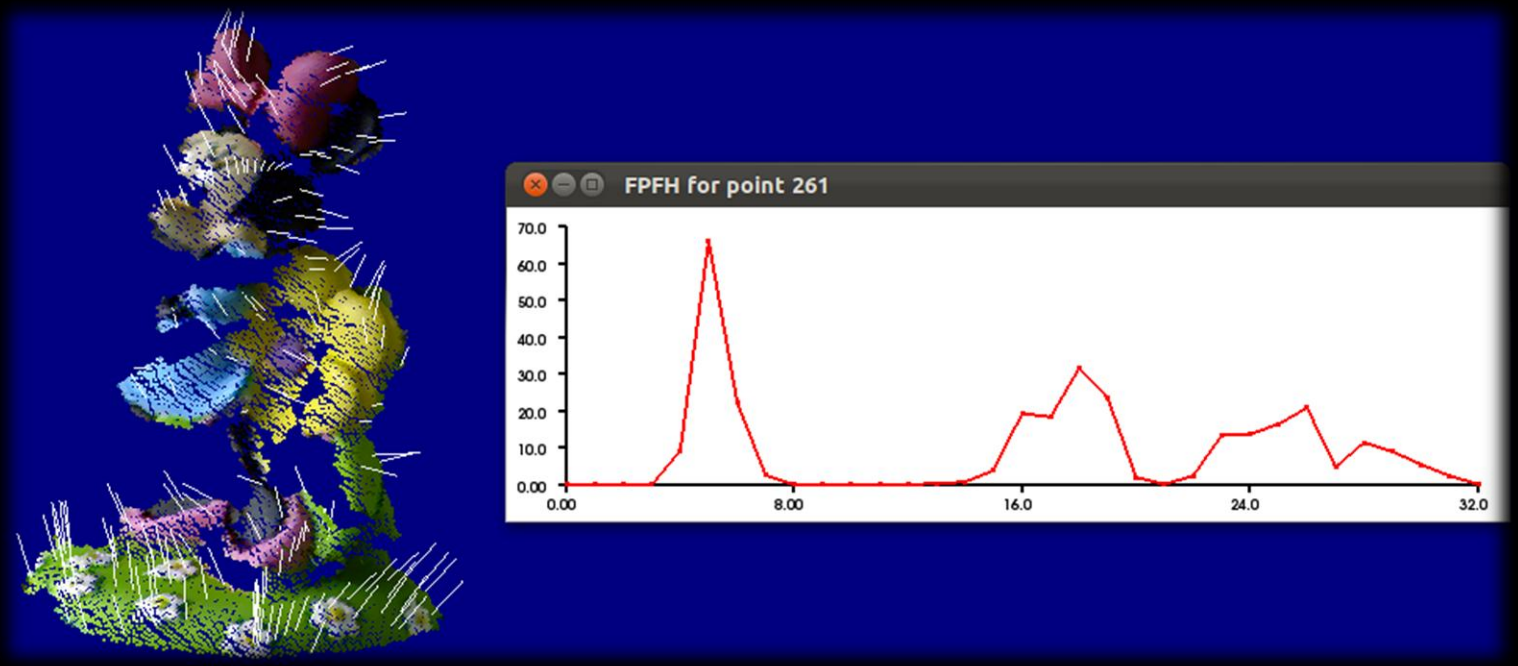


Tips & Tricks

- For a better positioning of the point cloud in the visualizer try to move the mouse while clicking the central button or Ctrl.
- Press +/- for changing the points size.
- Press «G» for visualizing a metric grid.

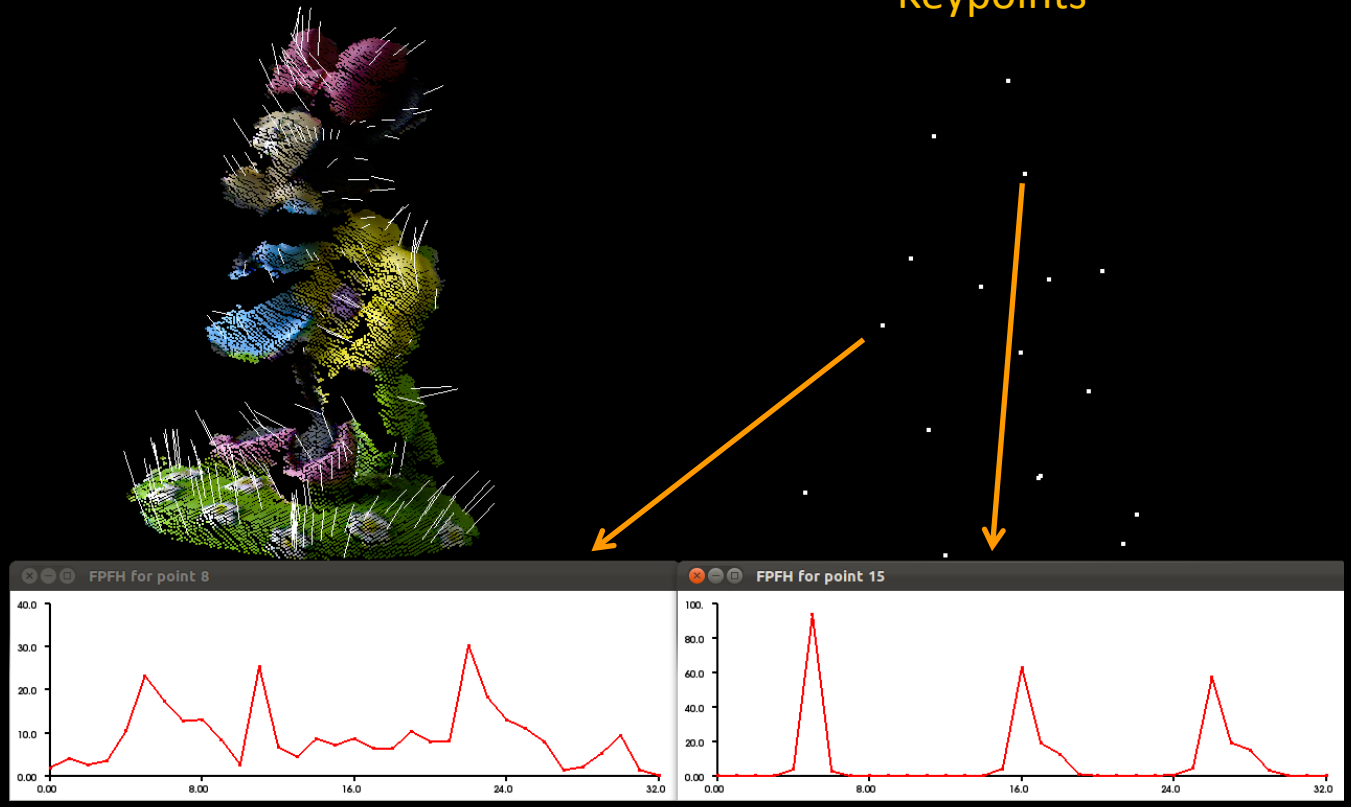
demo_compute_FPFH

- Normals and FPFH features are computed at every point of the input point cloud
- One normal every 100 is visualized with PCL viewer
- With «Shift+LeftClick» on a point of the point cloud you can see the FPFH descriptor of that point.



demo_compute_keypoints_and_FPFH

- **Exercise 2:**
  - Create a file «demo_compute_keypoints_and_FPFH» that computes SIFT3D keypoints and then compute FPFH features only at the keypoints location.
  - Verify if the keypoints descriptors are different to each other by visualizing them.



demo_compute_keypoints_and_FPFH

- **Exercise 2:**
  - Create a file «demo_compute_keypoints_and_FPFH» that computes SIFT3D keypoints and then compute FPFH features only at the keypoints location.
  - Verify if the keypoints descriptors are different to each other by visualizing them.
  - Example of parameters to use for SIFT3D keypoints:
    - min_scale = 0,01
    - nr_octaves = 3
    - nr_scales_per_octave = 2
    - min_contrast = 0

Kinect viewer

- ./openni_simple_viewer