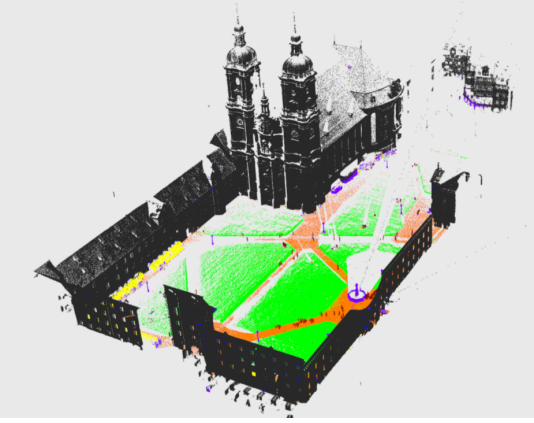
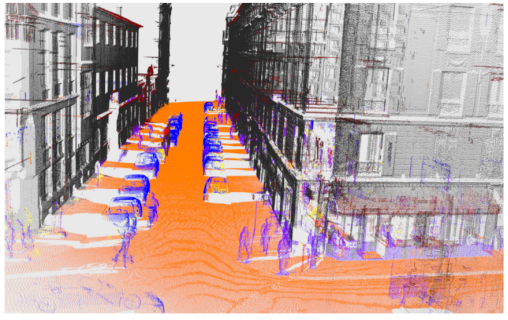
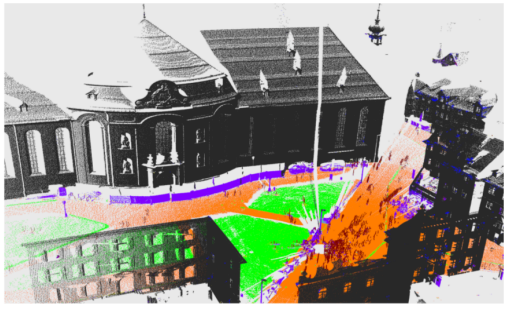
Fast Semantic Segmentation of 3D Point Clouds with Strongly Varying Density

T. Hackel, J. D. Wegner, and K. Schindler (APRS 2016)







- Semantic segmentation of 3D point clouds
- Unstructured and inhomogeneous point clouds (LiDAR, photogammetric reconstruction)
- Features from neighbourhood relations
  - A multi-scale pyramid with decreasing point density
  - A separate search structure per scale level
- Random Forest classifier to predict class-conditional probabilities
- Point clouds with many millions of points in a matter of minutes
- Evaluated on
  - benchmark data from a mobile mapping platform (Paris-Rue-Cassette and Paris-Rue-Madame)
  - a variety of large, terrestrial laser scans with greatly varying point density