Piecewise Planar City 3D Modeling from Street View Panoramic Sequences B. Mičučík and J. Košecká (ICCV 2015)



- Unified framework for creating 3D city models
- Exploiting image segmentation cues, dominant scene orientations and piecewise planar structures
- Pose estimation with a modified SURF-based matching approach to exploit properties of the panoramic camera
- Multi-view stereo method that operates directly on panoramas while enforcing the piecewise planarity constraint in the sweeping stage
- Depth fusion method which exploits the constraints of urban environments combines advantages from volumetric- and viewpoint-based fusion
- Avoids expensive voxelization of space and operates directly on 3D reconstructed points through effective kd-tree
- Final surface by tessellation of backprojections of the points into the reference image
- Demonstration on two street-view sequences, only qualitative results