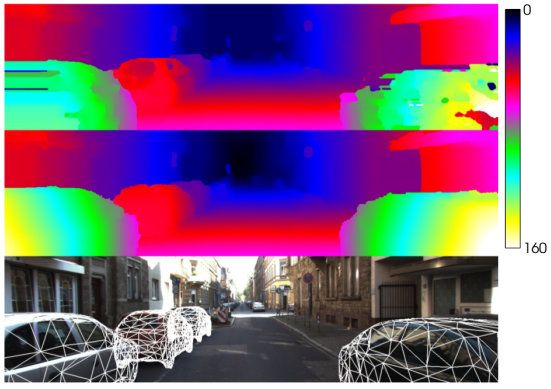
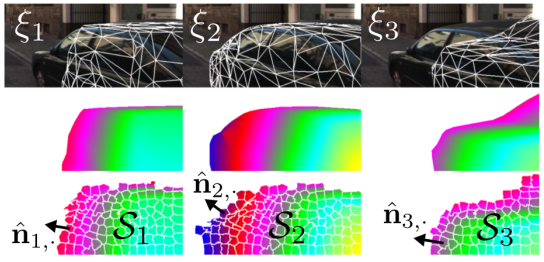
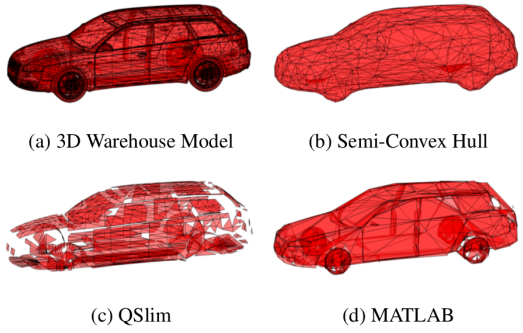
Displets: Resolving Stereo Ambiguities using Object Knowledge

F. Güney, and A. Geiger (CVPR 2015)







(a) 3D Warehouse Model (b) Semi-Convex Hull

(c) QSlim (d) MATLAB

- Using object-category specific disparity proposals (displets) to compensate for the weak data term on the reflecting and textureless surfaces
- Displets as non-local regularizer for the challenging object class 'car' in a superpixel based CRF framework
- Sampling displets using inverse graphics techniques based on a sparse disparity estimate and a semantic segmentation of the image
- Representative set of 3D CAD models of cars from Google Warehouse (8 models)
- Mesh simplification of 3D CAD models for preserving the hull of the object
- The best performing method on KITTI stereo benchmark, but slow