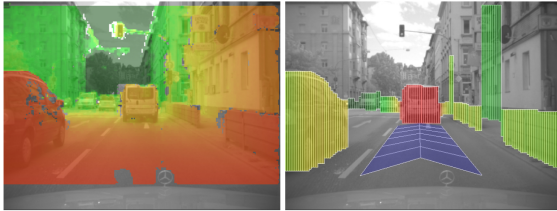


The Stixel World - A Compact Medium Level Representation of the 3D-World

H. Badino, U. Franke, and D. Pfeiffer (DAGM 2009)



- ▶ Motivation: Develop a compact, flexible representation of the 3D traffic situation that can be used for the scene understanding tasks of driver assistance and autonomous systems
- ▶ Contributions:
 - ▶ Introduces a new primitive, a set of rectangular sticks called stixel for modeling 3D scenes
 - ▶ Each stixel is defined by its 3D position relative to the camera and stands vertically on the ground, having a certain height
 - ▶ Each stixel limits the free space and approximates the object boundaries
- ▶ Stochastic occupancy grids are computed from dense stereo information
- ▶ Free space is computed from a polar representation of the occupancy grid
- ▶ The height of the stixels is obtained by segmenting the disparity image in foreground and background disparities