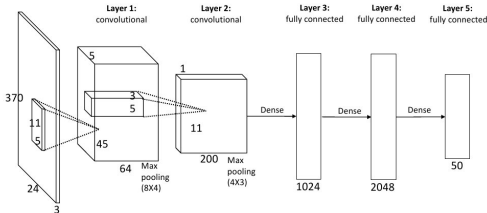


StixelNet: A Deep Convolutional Network for Obstacle Detection and Road Segmentation

D. Levi, N. Garnett and E. Fetaya (BMVC 2015)



- ▶ Obstacle avoidance for mobile robotics and autonomous driving
- ▶ Detection of the closest obstacle in each direction from a driving vehicle using single color camera
- ▶ Reduction of the problem in a column-wise regression problem solved with a deep CNN
 - ▶ Divide the image into columns
 - ▶ For each column the network estimates the pixel location of the bottom point of the closest obstacle
- ▶ Loss function based on a semi-discrete representation of the obstacle position probability
- ▶ Trained with ground truth generated from laser-scanner point cloud
- ▶ Outperforms existing camera-based methods including ones using stereo on KITTI
- ▶ Achieving among the best results for road segmentation on KITTI