A Method for Camera Vision Based Parking Spot Detection

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The article was written by (**Weis_2006**). It was was cited 3 times according to Google Scholar. The task performed was detecting parking spot behind a vehicle from its rear camera.

Hypothesis

By using color for edge detection using a Kirsch filter it is possible to detect available parking spots.

Evidence and Results

Four images show parking spot detection. The first shows a parking spot occluded by a car being detected. The second image shows a free parking spot being detected. The third and fourth images show rejections.

Contribution

A first contribution is a thorough problem characterization of detecting a parking spot from a frontal camera. Two different parking spots poses are considered: perpendicular and parallel.

The whole method is based in detecting the parking lines and then apply fixed rules to filter them over a semantic analysis.

First, the authors pre-process the image to filter out colors and gray levels not belonging to classical parking lines. Then, the authors use a Kirsh filter to vectorize the lines. Finally, semantical filtering is applied.

Weaknesses

No quantitative results are show, just a red overlay over the parking lines and a green frame over the surmised parking spot.

A range on the size of a parking spot, i.e. its height and width, is assumed.

Future Work

Apply learning of some kind rather than assume fixed ranges.