

# Vehicle Recognition in Panoramic Street Image

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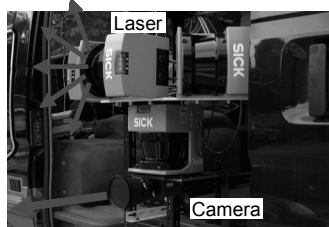
It is important to assess street-parking vehicles causing traffic problems in urban areas; however, assessments are performed manually and at high cost. Developing a detection system of those vehicles is a top priority for reducing cost and avoiding human error. We propose a detection method using a laser-range finder and a line-scan camera. In the detection method, two kinds of cluster analyses are applied to laser-range points: One is for clustering laser-range points at each scan, and the other for clustering laser-range points over several scans. Each cluster of laser-range points indicates a vehicle. As a result of verification experiments in real roads, a detection rate reached 90 %.

**Publication:**

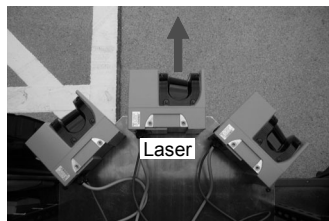
K. Hirahara and K. Ikeuchi, "Detection of vehicles in panoramic range image," *Proc. the IEEE Int'l. Conf. Robotics and Automation (ICRA'04)*, pp.84-89, 2004.



(a)



(b)



(c)

Fig. 1 System apparatus

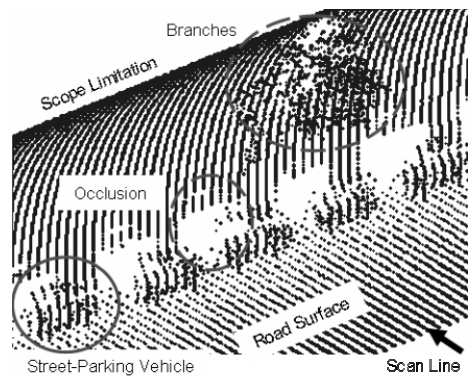


Fig. 2 Panoramic range image

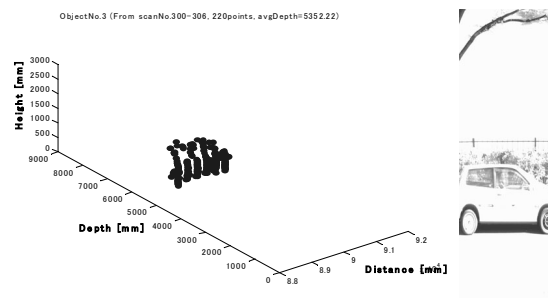


Fig. 3 Vehicle detection result

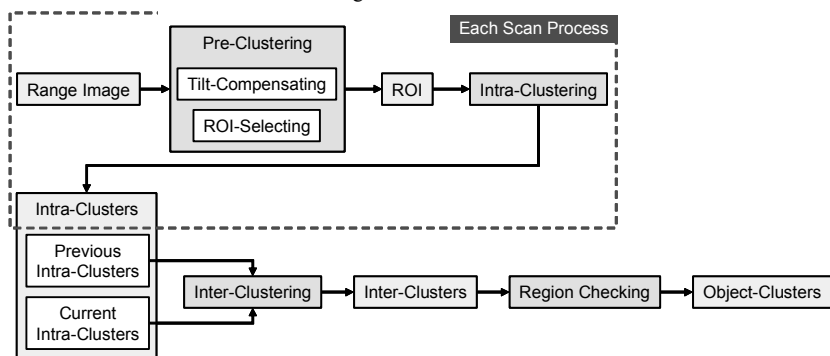


Fig 4 Detection algorithm