Panoramic-View- and Epipolar-Plane-Image Understandings for Street-Parking Vehicle Detection

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It is important to assess street-parking vehicles causing traffic problems in urban areas, however, traffic censuses is performed manually and at high cost. It is a top priority for reducing cost, to develop a detection system of those vehicles. We propose a detection method using a line-scan camera mounted on probe vehicles. The method is based on two kinds of epipolar-plane image analysis; one is edge-based algorithm and the other is region-based algorithm. Both algorithms are fused to achieve higher reliability. As a result of experiments in roads, a detection rate reached 96%.

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C. Zhu, K. Hirahara and K. Ikeuchi, "Street-parking vehicle detection on EPI using edge- and region-based algorithm," *Proc. the 10th World Congress on Intelligent Transport Systems*, 2003.

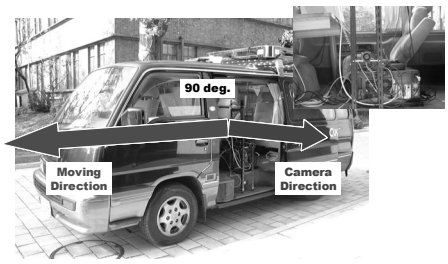

Fig. 1 Vehicle and System apparatus

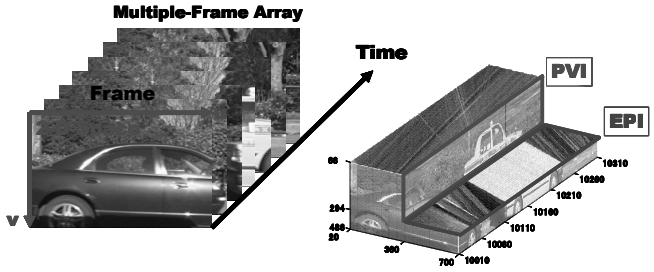

Fig. 2 Panoramic-view- and Epipolar-plane-images

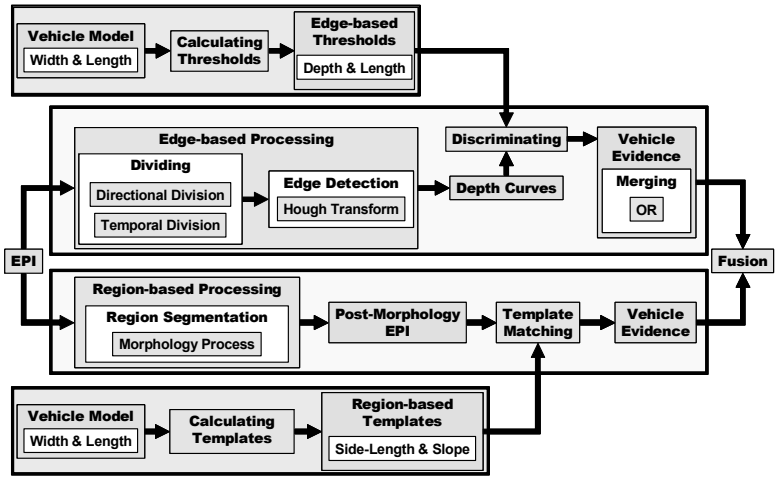

Fig. 3 Detection algorithm

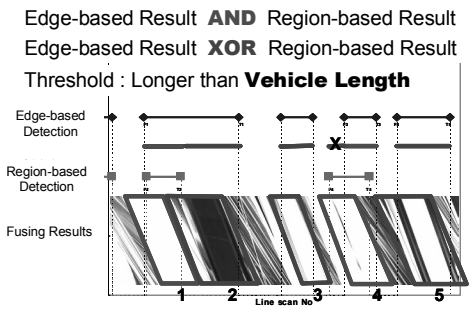

Fig. 4 Fusion result