

## 基于对称 FAST 特征的车辆目标检测方法

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**摘要:** 针对动态复杂环境下车辆目标识别和定位问题, 提出一种基于对称 FAST 特征的车辆目标识别方法. 利用车辆的对称特征, 采用水平镜像矩阵构造 FAST 特征描述矢量, 检测具有对称特性的 FAST 特征点对, 以此为车辆特征聚类的约束条件, 确定车辆中心线位置, 并结合车辆底部阴影特征对车辆目标进行识别和定位. 实验结果表明, 该方法提取的目标车辆区域位置准确, 平均检测准确率高达 93.2%.

**关键词:** 车辆检测; 对称特征; FAST 特征点; 特征描述; 阴影特征

## Vehicle detection method using symmetrical FAST feature

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**Abstract:** Aiming at the problem of moving vehicle detection and recognition, this paper proposed a vehicle detection algorithm based on vehicle symmetrical FAST feature. Based on the vehicle symmetrical feature, a novel symmetrical FAST points extraction algorithm is presented by constructing FAST descriptor. Then the vehicle symmetrical features are extracted using this method, which is also used to locate the central position of vehicle. At last, the vehicle will be recognized combining with the shadow features of the target. The experiment results show that the proposed method can detect vehicle area accurately, which can reach an average accurate detection rate of 93.2%.

**Key words:** vehicle detection; symmetrical feature; FAST feature points; feature description; shadow feature

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