

ABSTRACT

A detection method used by an autonomous mobile robot having a camera and a lidar is disclosed and includes: obtaining a camera image and lidar point-cloud information; obtaining a depth map; performing a semantic segmentation process to the camera image to obtain each pixel's semantic score and painting the semantic scores onto the depth map to generate a virtual key instance (VKI); retrieving multiple first features and multiple second features respectively from the VKI and the lidar point-cloud information; performing a bird's-Eye View (BEV) feature fusion process to the multiple first and second features to generate a first bounding box information with respect to a target object; performing a region-of-interest (ROI) feature fusion process to the multiple first and second features to generate a second bounding box information; and combining the first and second bounding box information to output a detection result.

Fig.3