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(54) Title: METHOD AND SYSTEM FOR LOCALIZING A MOBILE ROBOT

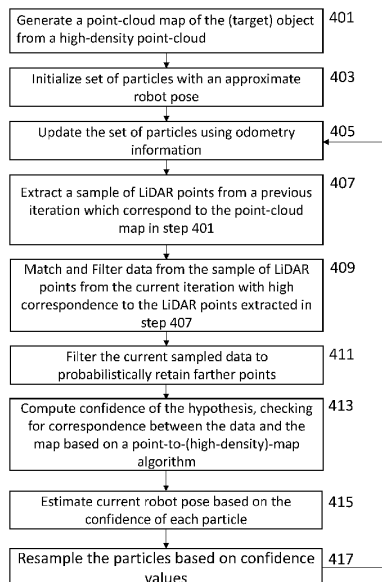


Fig. 4

(57) Abstract: A method of localizing a mobile robot 100 with respect to a target object 601 using an initial map of a reference object which is a representation of the target object is disclosed herein. The method comprises obtaining LiDAR data 503 of the target object 601 captured by a LiDAR device 203 of the mobile robot 100 as the mobile robot 100 traverses in an environment associated with the target object 601 the LiDAR data including respective point cloud representations of the target object 501 and the environment in various sampling instances; iteratively updating pose data representing estimated pose of the mobile robot 100 with respect to a known reference location in corresponding sampling instances as the mobile robot traverses the environment; extracting a subset of LiDAR data points in the point cloud representation of a previous sampling instance, the subset of LiDAR data points corresponding to features of the target object 601 in the initial map based on the estimated pose of the mobile robot 100 associated with the previous sampling instance; obtaining desired LiDAR data points in the point cloud representation in a current sampling instance, the desired LiDAR data points including current LiDAR data points which correspond to the extracted subset of LiDAR data points in the previous sampling instance; and determining a localization pose of the mobile robot 100 with respect to the target object 601 in the current sampling instance based on the desired LiDAR data points. A system for localizing a mobile robot is also disclosed herein.

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