

论文与报告

基于B样条曲线模型的结构化道路检测算法

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摘要

提出一种新的基于均匀非周期B样条曲线模型的结构化道路检测算法. 算法首先利用Canny边缘检测算法提取道路边缘, 然后使用最小二乘法拟合道路标识线, 最后利用所提取的道路标识线求取道路中央线, 进而完成道路拟合. 为了准确定位道路弯道位置, 算法运用最大转向偏差定位(Maximum deviation of position shift, MDPS)方法求解道路模型控制点. 实验证明该算法快速、稳定、灵活, 可以满足智能导航的要求.

关键词 [道路检测](#) [Canny边缘检测](#) [最小二乘法](#) [最大转向偏差](#) [均匀非周期B样条曲线](#)

分类号

Structure Road Detection Algorithm Based on B-spline Curve Model

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Abstract

A new structure road detection algorithm based on open uniform B-spline curve model is proposed. The algorithm is composed of the following steps: First, Canny edge detection is used to extract road edges, then road marking lines are detected from the edge map by the least squares method, finally, the road model is fitted after the central points of the road are gotten from the lane markings. In order to accurately locate the position of road bend, the algorithm introduces the maximum deviation of position shift (MDPS) method to search control points. A large number of experiments show that the algorithm is fast, stable, flexible, and could meet the requirements of intelligent navigation.

Key words [Road detection](#) [Canny edge detection](#) [least square method](#) [maximum deviation of position shift \(MDPS\)](#) [open uniform B-spline](#)

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