

基于知识的视觉导航农业机器人行走路径识别

Road recognition for agricultural robot guided by machine vision

投稿时间: 2002-9-24

稿件编号: 20030624

中文关键词: 路径识别; 视觉导航; 农业机器人; 机器视觉

英文关键词: road recognition; vision guidance; agricultural robot; machine vision

基金项目: 教育部科学技术重点研究项目(项目编号: 03091)

作者	单位
周俊	上海交通大学机电控制研究所, 上海 200030
姬长英	南京农业大学工学院, 南京 210031

摘要点击次数: 15

全文下载次数: 15

中文摘要:

目前的农业生产方式引起了环境污染、生态恶化等诸多问题, 研制具有精确作业能力的视觉导航农业机器人因而被较多关注。针对导航视觉系统采集的农田非结构化自然环境彩色图像, 探讨了用于行走路径识别的适宜的彩色特征, 并结合农田作业时农业机器人行走路径的特点, 运用路径知识启发机制识别出行走路径。与传统的阈值分割算法的对比处理试验表明, 此识别算法可以明显地改善路径识别效果。

英文摘要:

At present, the problem of environmental pollution and ecological deterioration raised by agricultural production is increasingly serious, so the development of the agricultural robot guided by machine vision is widely considered to be necessary which has the potential of precision farming and being friendly with natural environment. In this paper, an algorithm of road recognition is introduced, which is a key technology for the visual guidance in the non-structured agriculture environment. At first, the suitable segmentation feature of the color picture of natural field environments is discussed. Based on the road knowledge and the feedback idea, then a new edge following method is developed to recognize the road. Finally, compared with the conventional method of threshold segmentation, the result of the treatment of actual field pictures shows that this algorithm is more effective for the road recognition.

[查看全文](#)

[关闭](#)

[下载PDF阅读器](#)

您是第606958位访问者

主办单位: 中国农业工程学会 单位地址: 北京朝阳区麦子店街41号

服务热线: 010-65929451 传真: 010-65929451 邮编: 100026 Email: tcsae@tcsae.org

本系统由北京勤云科技发展有限公司设计