论文   最新目录 | 下期目录 | 过刊浏览 | 高级检索   << Previous Articles | Next Articles >>

一种基于光流拟和的航拍视频图像全局运动估算方法

许东, 安锦文

西北工业大学 自动化学院, 陕西 西安 710072

Global Motion Estimation by Fitting Optical Flow in Aerial Video Imagery

XU Dong, AN Jin-wen

College of Automation, Northwestern Polytechnical University, Xi'an 710072, China

| 摘要 | 参考文献 | 相关文章 |

Download: PDF (3226KB)   HTML 0KB   Export: BibTeX or EndNote (RIS)   Supporting Info

摘要 在多分辨率光流估算的基础上,提出了一种基于光流拟和的方法用于对航拍视频图像中的全局运动进行估算。在利用光流对全局运动模型拟和时,针对光流估算的不确定性以及图像中独立目标运动的干扰,提出了一种光流分块拟和与评估的方法用于剔除光流场中不利于全局运动估算的干扰数据,从而有效提高了全局运动的估算精度。航拍视频图像配准与独立运动检测的仿真结果均验证了算法的有效性。

关键词: 计算机图象处理   全局运动估计   光流拟和   图像配准   运动检测

Abstract: A new model based global motion estimation method is proposed by fitting optical flow field for aerial video imagery. Prior to motion model fitting, optical flows are first estimated based on a multi-resolution mechanism. However, due to noise-sensitive defect of standard linear regression technique, the uncertainties and independent motions of optical flow estimation would ruin the fitting result of global motion model. Therefore, instead of fitting the whole optical flow field, an array of non-overlapping flow regions is used to derive an initial set of motion models by fitting each region separately. Regions with fitting errors greater than a prescribed threshold are rejected since they do not provide a good description of motion within the region. Finally, the remaining optical flows are fitted again, which results in a more accurate motion model. Experimental results of both aerial image registration and independent motion detection show the effectiveness of the algorithm proposed.

Keywords: global motion estimation   motion model fitting   optical flow   image registration   motion detection

引用本文:

许东;安锦文. 一种基于光流拟和的航拍视频图像全局运动估算方法[J]. 航空学报, 2006, 27(1): 94-97.

XU Dong;AN Jin-wen. Global Motion Estimation by Fitting Optical Flow in Aerial Video Imagery[J]. Acta Aeronautica et Astronautica Sinica, 2006, 27(1): 94-97.

Service
- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器
- Email Alert
- RSS

作者相关文章
- 许东
- 安锦文