

工程与应用

公交车乘客流量自动计数的P2DHMM技术研究

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摘要 我国一些大中城市公交车运营管理采用了无人售票的刷卡系统管理, 但是自动刷卡系统不能够满足车辆调度、运营规划等公共管理的要求, 为了获取乘客流量的实际数据, 开发高精度自动记数模型成为当前的热点和技术难点。我国现有乘客流量统计系统的精度在80%左右, 造成精度问题的主要原因是在乘车高峰时段拥挤的状态背景条件下, 一般模式识别算法和模型设计难以准确将单个人体识别和分割出来, 为此, 在充分调研的基础上, 设计了采用普通数码摄像机和模板匹配方案, 选择实验了先进的P2DHMM模型, 模拟实验结果证实, 该方法具有稳定的识别性能, 为真实条件下的实验奠定了良好的基础。

关键词 [公交车运营管理](#) [自动记数系统](#) [伪二维隐马尔可夫模型 \(P2DHMM\)](#)

分类号

Study on P2DHMM method of automatic passenger counting for bus management

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Abstract

In order to content the development of the roboticized and intelligentized bus management, the management of self-service is adopted in many cities in China. But it can't satisfy the request with bus adjusting and programing, so, it is a hot subject to develop a model of automatic passenger counting with high-precision to obtain the reliably daily flux of passengers. The precision of the present system is around 80%. The problem is caused by the crowded passengers when passengers take bus. The general pattern recognition is unable to distinguish sole person. Based on the sufficient research, the author design a project with common digital vidicon and the advanced model of P2DHMM. The result of the simulating experiment confirmed that it has nice capability on recognition, and affords a good foundation for the reality.

Key words [bus management](#) [automatic counting system](#) [Pseudo Two Dimensional Hidden Markov Model \(P2DHMM\)](#)

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