

Multiple Face Tracking and Attention Focus Determination

蔡仁智、曾逸鴻

E-mail: 9707319@mail.dyu.edu.tw

ABSTRACT

In recent years, electronic advertisements gradually replace traditional advertising billboards with vigorous development of information industry, it become a new feature of street. For electronic billboards advertising content and broadcast time, the current study only the use of a questionnaire survey; not enough science and the use of automa-tion in the ad attraction analysis. Unable to carry out immediate data collection and sta-tistics, provided to advertisers for advertising effectiveness analysis. Therefore, this research proposes multiple face tracking and attention focus deter-mination system, it ' s base on computer vision; we extract Continuous image from the video, Then foreground pedestrian face detection and tracking pedestrian face, Then, the relative proportion of the face and head, To determine whether the various types of pe-destrians to view the advertising billboards. Finally, we will statistics, pedestrians to view the advertising billboards of time and frequency, to assess the content of broadcast ads for the attractiveness of pedestrian level.

Keywords : background subtraction ; face detection ; foreground object detection

Table of Contents

第一章 緒論	第一節 研究背景與動機	第二節 研究目的與限制	第三節 論文架構	第二章 文獻探討
第一節 前景臉部區域偵測	第二節 臉部區域追蹤	第三節 注視焦點判定	第三章 人臉偵測	第一節 膚色及全色背景模型建立
第二節 背景相減與臉部區域偵測	第四章 臉部追蹤與注視焦點判定	第一節 特徵值抽取	第二節 注視焦點判定	第二節 錯誤分析
第五章 實驗結果分析	第一節 實驗結果	第六章 結論 參考文獻	第二節	

REFERENCES

- Aggarwal, J. K., & Zhou, Q. (2006). Object tracking in an outdoor environment using fusion of features and cameras. *Computer Vision and Image Understanding*, 24(11), 1244-1255.
- Cheng, F. H., & Chen, Y. L. (2006). Real time multiple objects tracking and identification based on discrete wavelet transform. *Pattern Recognition*, 39(6), 1126-1139.
- Collins, R. T., Liu, Y., & Leordeanu, M. (2005). Online selection of discriminative tracking features. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 27(10), 1631-1643.
- Gonzalez, R. C., & Woods, R. E. (2002). *Digital Image Processing* (2nd ed.). Prentice Hall: New Jersey.
- Kang, H., & Kim, D. (2005). Real-time multiple people tracking using competitive condensation. *Pattern Recognition*, 38(7), 1045- 1058.
- Kim, J. B., & Kim, H. J. (2003). Efficient region-base dmotion segmentation for a video monitoring system. *Pattern Recognition Letters*, 24(3), 113-128.
- Lerdsudwichai, C., Mottaleb, M. A., & Ansari, A. N. (2005). Tracking multiple people with recovery from partial and total occlusion. *Pattern Recognition*, 38(7), 1059-1070.
- McKenna, S. J., Jabri, S., Duric, Z., Rosenfeld, A., & Wechsler, H. (2000). Tracking groups of people. *Computer Vision and Image Understanding*, 80(1), 42-56.
- Maio, D., & Maltoni, D. (2000). Real-time face location on gray-scale static images. *Pattern Recognition*, 33(9), 1525-1539.
- Pai, C. J., Tyan, H., Liang, Y. M., Liao, H. Y. M., & Chen, S. W. (2004). Pedestrian detection and tracking at crossroads. *Pattern Recognition Letters*, 37(5), 1025-1034.
- Rowley, H. A., & Rehg, J. M. (1997). Analyzing articulated motion using expectation-maximization. In *Proceedings of the IEEE International Conference on Pattern Recognition, CVPR(97)*, 935-941.
- Senior, A., Hampapu, A., Tian, Y. L., Brown, L., Pankanti, S., & Bolle, R. (2006). Appearance models for occlusion handling. *Computer Vision and Image Understanding*, 24 (11), 1233-1243.
- Tissainayagama, P., & Suter, D. (2005). Object tracking in image sequences using point features. *Pattern Recognition*, 38(1), 105-113.
- Tseng, Y. H., & Lin, C. H. (2006). Housebreaker detection by analyzing moving light sources in a dark indoor environment, *Proceedings of the 19th Conference on Computer Vision, Graphics and Image Processing*, (pp. 720-727), Taoyuan.
- Tseng, Y. H., & Lin, Y. Y. (2007). Multiple objects tracking in a night environment with weak lamplight, *Proceedings of the 20th Conference on Computer Vision, Graphics and Image Processing* (pp. 786-793), Miaoli.
- Wang, H., & Suter, D. (2006). A consensus-based method for tracking: Modelling background scenario and foreground appearance. *Pattern Recognition*, 40 (3), 1091-1105.
- Wong, K. W., Lam, K. M., & Siu, W. C. (2003). A robust scheme for live detection of human faces in color images. *Signal Processing: Image Communication*, 18, 103-114.
- Zhou, Z. H., & Geng, X. (2004). Projection functions for eye detection. *Pattern Recognition*, 37(5), 1049-1056.