Document details

Back to results | 1 of 1

2017 IEEE International Conference on Smart Instrumentation, Measurement and Applications, ICSIMA 2017
Volume 2017-November, 8 March 2018, Pages 1-5
4th IEEE International Conference on Smart Instrumentation, Measurement and Applications, ICSIMA 2017; Putrajaya; Malaysia; 28 November 2017 through 30 November 2017; Category numberCFP1YAG-ART; Code 135221

Automated daily human activity recognition for video surveillance using neural network (Conference Paper)

Babiker, M.[a], Khalifa, O.O.[a], Htike, K.K.[b], Hassan, A.[a], Zaharadeen, M.[a]

[a]Department of Electrical and Computer Engineering, International Islamic University Malaysia, Malaysia
[b]Department of Information Technology UCSI University, Malaysia

Abstract

View references (10)

Surveillance video systems are gaining increasing attention in the field of computer vision due to its demands of users for the seek of security. It is promising to observe the human movement and predict such kind of sense of movements. The need arises to develop a surveillance system that capable to overcome the shortcoming of depending on the human resource to stay monitoring, observing the normal and suspect event all the time without any absent mind and to facilitate the control of huge surveillance system network. In this paper, an intelligent human activity system recognition is developed. Series of digital image processing techniques were used in each stage of the proposed system, such as background subtraction, binarization, and morphological operation. A robust neural network was built based on the human activities features database, which was extracted from the frame sequences. Multi-layer feed forward perceptron network used to classify the activities model in the dataset. The classification results show a high performance in all of the stages of training, testing and validation. Finally, these results lead to achieving a promising performance in the activity recognition rate. © 2017 IEEE.

Author keywords

Human activities recognition | intelligent system | Multi-layer feed forward perceptron | Neural Network | video surveillance

Indexed keywords

Engineering controlled terms: Classification (of information) | Intelligent systems | Mathematical morphology | Monitoring | Motion analysis | Neural networks | Pattern recognition

Engineering uncontrolled terms: Classification results | Digital image processing technique | Human activities recognition | Human activity recognition | Morphological operations | Multi-layer feed forward | Surveillance video systems | Video surveillance

Engineering main heading: Security systems

ISBN: 978-153863960-3 DOI: 10.1109/ICSIMA.2017.8312024

Source Type: Conference Proceeding
Original language: English
Document Type: Conference Paper
Sponsors: International Islamic University Malaysia (IIUM),UCSI University,Universiti Kuala Lumpur British Malaysian Institute (UniKL BMI),Universiti Teknologi Malaysia (UTM),Universiti Teknologi MARA (UiTM),University Putra Malaysia (UPM)
Publisher: Institute of Electrical and Electronics Engineers Inc.

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

References (10)

View in search results format >

All | Export | Print | E-mail | Save to PDF | Create bibliography

1 Hossen, M.K., Tuli, S.H.

A surveillance system based on motion detection and motion estimation using optical flow

(2016) *2016 5th International Conference on Informatics, Electronics and Vision, ICIEV 2016*, art. no. 7760081, pp. 646-651. Cited 5 times.
ISBN: 978-150901269-5
doi: 10.1109/ICIEV.2016.7760081

View at Publisher

2 Htike, K.K., Khalifa, O.O.

Human posture recognition: Methodology and implementation

(2015) *Journal of Electrical Engineering and Technology*, 10 (4), pp. 1910-1914.
http://www.jeet.or.kr/LTKPSWeb/pub/pubfpfile.aspx?ppseq=1352
doi: 10.5370/JEET.2015.10.4.1910

View at Publisher

3 Htike, K.K., Khalifa, O.O., Ramli, H.A.M., Abushariah, M.A.M.

Human activity recognition for video surveillance using sequences of postures

(2014) *2014 3rd International Conference on e-Technologies and Networks for Development, ICeND 2014*, art. no. 6991357, pp. 79-82. Cited 7 times.
ISBN: 978-147993166-8
doi: 10.1109/ICeND.2014.6991357

View at Publisher

4 Kaur, R., Singh, S.

Background modelling, detection and tracking of human in video surveillance system

(2014) *Proceedings of the International Conference on Innovative Applications of Computational Intelligence on Power, Energy and Controls with Their Impact on Humanity, CIPECH 2014*, art. no. 7019097, pp. 54-58. Cited 5 times.
ISBN: 978-147995871-9
doi: 10.1109/CIPECH.2014.7019097

View at Publisher

5 Meng, B., Zhang, L., Jin, F., Yang, L., Cheng, H., Wang, Q.

Abnormal events detection using deep networks for video surveillance

(2017) *Communications in Computer and Information Science*, 710, pp. 197-204. Cited 2 times.
http://www.springer.com/series/7899
ISBN: 978-981105229-3
doi: 10.1007/978-981-10-5230-9_22

View at Publisher

6 Peng, Q., Hong, G., Feng, M., Xia, Y., Yu, L., Wang, X., Li, Y.
(2016) *Off-position Detection Based on Convolutional Neural Network*

7 Sapana, M., Mishra, K., Bhagat, K.S.
A survey on human motion detection and surveillance
(2015) *International Journal of Advanced Research in Electronics and Communication Engineering*, 4 (4). Cited 5 times.

8 Wang, H., Shi, L.
Foreground model for background subtraction with blind updating

(2016) *2016 IEEE International Conference on Signal and Image Processing, ICSIP 2016*, art. no. 7888227, pp. 74-78. Cited 2 times.
ISBN: 978-150902376-9
doi: 10.1109/SIPROCESS.2016.7888227

View at Publisher

9 Wang, W.-J., Chang, J.-W., Haung, S.-F., Wang, R.-J.
Human Posture Recognition Based on Images Captured by the Kinect Sensor

(2016) *International Journal of Advanced Robotic Systems*, 13 (2), art. no. 62163. Cited 13 times.
http://arx.sagepub.com/content/by/year
doi: 10.5772/62163

View at Publisher

10 Zhang, S., Wei, Z., Nie, J., Huang, L., Wang, S., Li, Z.
A Review on Human Activity Recognition Using Vision-Based Method (Open Access)

(2017) *Journal of Healthcare Engineering*, 2017, art. no. 3090343. Cited 10 times.
http://www.hindawi.com/journals/jhe/contents/
doi: 10.1155/2017/3090343

View at Publisher