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

 Babiker, M.<sup>a</sup> ✉, Khalifa, O.O.<sup>a</sup> ✉, Htike, K.K.<sup>b</sup>, Hassan, A.<sup>a</sup>, Zaharadeen, M.<sup>a</sup>
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### Abstract

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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  
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 Surveillance video systems Video surveillance

Engineering main heading: Security systems

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