Pairwise classification using combination of statistical descriptors with spectral analysis features for recognizing walking activities

ABSTRACT

The advancement of sensor technology has provided valuable information for evaluating functional abilities in various application domains. Human activity recognition (HAR) has gained high demand from the researchers to undergo their exploration in activity recognition system by utilizing Micro-machine Electromechanical (MEMs) sensor technology. Tri-axial accelerometer sensor is utilized to record various kinds of activities signal placed at selected areas of the human bodies. The presence of high inter-class similarities between two or more different activities is considered as a recent challenge in HAR. The nt of incorrectly classified instances involving various types of walking activities could degrade the average accuracy performance. Hence, pairwise classification learning methods are proposed to tackle the problem of differentiating between very similar activities. Several machine learning classifier models are applied using hold out validation approach to evaluate the proposed method.