

## Smartphone-Based Human Activity Recognition by Machine Learning Methods

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**Abstract :** As smartphones upgrading, their software and hardware are getting smarter, so the smartphone-based human activity recognition will be described as more refined, complex, and detailed. In this context, we analyzed a set of experimental data obtained by observing and measuring 30 volunteers with six activities of daily living (ADL). Due to the large sample size, especially a 561-feature vector with time and frequency domain variables, cleaning these intractable features and training a proper model becomes extremely challenging. After a series of feature selection and parameters adjustment, a well-performed SVM classifier has been trained.

**Keywords :** smart sensors, human activity recognition, artificial intelligence, SVM

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