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**Conference Record - IEEE Instrumentation and Measurement Technology Conference** • 2022 • 2022 IEEE International Instrumentation and Measurement Technology Conference, I2MTC 2022 • Ottawa • 16 May 2022 through 19 May 2022 • Code 180602

**Document type**

Conference Paper

**Source type**

Conference Proceedings

**ISSN**

10915281

**ISBN**

978-166548360-5

**DOI**

10.1109/I2MTC48687.2022.9806551

**Publisher**

Institute of Electrical and Electronics Engineers Inc.

**Sponsors**

IEEE • IEEE Instrumentation and Measurement Society (IMS)

**CODEN**

CRIIE

**Original language**

English

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# Human Activity and Posture Classification using Smartphone Sensors and Matlab Mobile

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## Abstract

Human Activity Recognition (HAR) is significant, especially in the medical field. Activity recognition has been used in various ways as technology has advanced, particularly using a smartphone-based approach. This work aims to evaluate the accuracy of the triaxial accelerometer in the Matlab Mobile and examine the development and performance of the algorithms in identifying human motions on individuals of similar ages and physical appearances. Motion signals from three subjects are measured, data is preprocessed using a filtering technique, features are extracted, feature normalization is used to reduce bias in data measurement, and activities are classified. Confusion matrix, precision, recall, accuracy, F1-score, and Kappa score are performance indicators used to determine this classification approach. As a result, this research discovered that the Quadratic Support Vector Machine (SVM) produces the best results, with a 99.22 % accuracy rate, proving the efficacy of its activity identification method. © 2022 IEEE.

## Author keywords

human activity recognition; posture recognition; smartphone sensors ; SVM classifier

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