

ANN-based Performance Analysis on Human Activity Recognition

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ABSTRACT

In the Big Data era, where various devices can connect to each other through network and cloud services, a smartphone has numerous sensors that can detect data about everything around it. This makes the identifying-process activity (AR) applications and behavior aware of the context. In this paper, we used an algorithm to predict a person's activity based on the collected sensor data. Also, Principal Component Analysis(PCA) is applied to the 561 features of the dataset. PCA reduced the dimensions of the dataset from 561 to 50, decreasing the complexity of the data. Therefore, a number of important features are identified out of the 561 features. Consequently, the neural network outperforms the HF-SVM. The HF-SVM was chosen because it requires less memory, computational power, and battery consumption. This study suggests minimizing the resources used by the neural network or exploring another classification algorithm to achieve comparable results with fewer resources.

KEYWORDS: ANN, Human Activity Recognition, Machine Learning, Analysis

DOI: <https://doi.org/10.1109/ICRAIE47735.2019.9037749>

ACKNOWLEDGMENT

This research work has been funded under the Postgraduate Research Grant Scheme (PRGS), PGRS190302, from Universiti Malaysia, Pahang and supported by Jazan University