Abstract

Human activity recognition (HAR) has given a lot of attention in the recent years due to the need of high level context about the human activities in several applications. Many domains have attempted to overcome the lack of performance techniques used to collect raw data such as cameras to record or capture activities and inertial sensor units to record correct readings. As a result, few studies have regarded to acquire raw data and extract features instead of understanding, recognizing, inferring, and predicting human activities in future to obtain recommendations or detecting healthcare, daily, and educational positions to humans. This paper aims to analyze the performance of Neural Network (NN) and Deep Neural Network (DNN) for HAR. To achieve this aim, we select Daily and Sports Activities data set (DSA) to match paper's needs. This paper depends on NN and DNN based on softmax
function. We form three sets of DSA dataset: small, medium, and large. The results showed
that DNN based on softmax function reduce the computational cost than NN, increase the
performance of network, and achieved high overall successful differentiation rate in testing on
large dataset (97.74%) than on medium dataset (67.81%). or on small dataset (67.63%).

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**Index Terms**

Computer Science       Artificial Intelligence

**Keywords**

Human Activity Recognition (HAR), Neural Network (NN), Deep Neural Network (DNN).