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NEURAL NETWORK BASED CHILD ACTIVITY RECOGNITION

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ABSTRACT

This paper presents the design of an artificial neural network for the child activity recognition. A Triaxial accelerometer sensor, housed in the leg, hand and back worn sensor unit has been used for capturing the acceleration of the movements associated. All the three sensors acceleration data were collected pre-processed and classified by extracting its features using MATLAB. A neural network approach for classification was used with an eye on Advanced RISC Machine (ARM7) based microcontroller recognition approach. This work shows a detailed description of the designing steps for the child activity classification with the help of acceleration data. A Feed forward neural network, with "trainbfg" algorithm for training, showed better performance when compared with the activity recognition using ARM7 based microcontroller approach. Recognized child activities are monitored and sent messages to their parents through Android mobile phones. Voice alerts are also sent if the temperature goes very high.

KEYWORDS: Accelerometer, Activity Classification, Activity Recognition, Feed-Forward Neural Network