UNEXPECTED HUMAN ACTIVITY DETECTION USING ANDROID SMART PHONES

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Human security is one of the most important issues in this world and the researchers try to develop computer applications to protect the individuals using modern information technology facilities. In this stage, development of mobile phone based application for the protection of individual is one of the major research areas. Since each individual always carrying smart mobile phone, it is feasible to determine the status of the user every minute. In other words, in cases of unexpected event happen to the user are unable to inform immediately to security personals about the status. On the other hand developing an application to send a status message to alert the security personals will be useful application for the users. This project is proposing a mobile phone application to send alert message to security personal in a situation where an unexpected event is happened to the user.

The modern smart phones with android platform can be used to collect various kinds of signals (data) through different type of sensors. The accelerometer associated with the smart phone provides the accelerations in x, y and z direction in particular time interval while the GPS facilitates to determine the position of the phone using the longitude and latitude. The proposed system uses these two kinds of data and the SMS service to send the alert message.

The proposed system is implemented using Android OS and tested with various scenarios such as person doing normal activity and doing unexpected activity. Here the system can recognize Walking and Running as Normal activity, the unexpected activities considered in this project are jumping, and falling down. The system was developed without using any external classifier applications which consumes more hardware resources. The output of the application shows promising results and successfully sends alert message to another user (security personal) during the unexpected activity. This application is processed by the mobile phone and send message within a minute.