Pedometer: Counting Step

Abstract:

Over the past 25 years, cellphones have gone from being devices without even a display which are only used for calling, to all-in-one devices capable of doing everything. They can not only do everything, but they are able to perform so well that they have singlehandedly eradicated product lines like IPods, Pagers, most digital cameras and for that matter, even reduced the need for a laptops. On the other hand, they are still lagging in terms of fitness tracking, more specifically step counters. Step Counters, in some form, have been around since at least the last 400 years. They used to be and are still available as standalone devices whose sole or major responsibility was to track the number of steps taken by a user. Today's dedicated fitness trackers seem to have a really high accuracy rate of around 97%. Smartphone sensors on the other hand, are still playing catch up. Even though the quality of the MEMS on smartphone sensors have improved dramatically over the past 10 years or so, the step counts from even the flagship phones on the market today still have really high error rates. There is a need to improve the quality of the step counters in smartphones and this is the problem being tackled in this project.

Introduction:

Step Counters have gained popularity in the past few years. While heath conscious people have always been interested in keeping a track of their step counts, calories they burn and the distances they cover during their workout sessions or during their daily life, even the average person now tracks the same metrics more regularly. This has been attributed to the rise of readily available and built in applications in their smartphones which facilitate this behavior. Smartphones on both Android and iOS have had step counters since the past 6 years, and their accuracy as well as the general structure and purpose the applications has improved gradually over time.

Advantages:

- Real-Time step counting
- Graphical representation of Steps count.
- Stores step count data on daily basis.

Disadvantages:

- Step count may not be accurate as the sensor used is accelerometer and not pedometer.
- Doesn't maintain the database on server, if the app is uninstalled all the previous data will be lost.