Project Proposal

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## Project Topic:

* The Heterogeneity Activity Recognition Data Set contains 9 users’ activity recognitions from smartphone and smartwatch. The status of a user is recorded with time series data consisting of 3-axial linear acceleration and 3-axial angular velocity at a constant rate of 50Hz, using embedded sensors in each model.

## Proposed Work:

* We aim at predicting a user’s activity (‘Biking’, ‘Sitting’, ‘Standing’, ‘Walking’, ‘Stair Up’ and ‘Stair down’) through building several machine learning models such as K means, spectral clustering, etc and compare accuracy rates to find the best model.
* Figure out ways to implement categorical features to models and deal with NA data.

## Important References:

Relevant Link:

http://archive.ics.uci.edu/ml/machine-learning-databases/00344/

Relevant Papers:

Smart Devices are Different: Assessing and Mitigating Mobile Sensing Heterogeneities for Activity Recognition

## What’s the difficulty of the proposed work:

1. Dealing with Huge data of about 3.07 GB.
2. Real time data with little variation in coordinates to identify exactly into which category the test data falls in.
3. Dealing with various devices where there is possibility in variation of X,Y and Z coordinates data collection like the rate at which different devices recognize the variations in actions.