Human Activity(Binary) Recognition

Overview

Human activity recognition is the problem of classifying sequences of accelerometer and gyroscope data recorded by a smartphone into known well-defined movements (walking and running).

This hackathon which aims to detect whether the person is running or walking based on deep neural networks and sensor data collected from iOS device.

Data Dictionary

The data samples are collected from an accelerometer and gyroscope from iPhone 5c in 10 seconds interval and ~5.4/second frequency.

Train File

CSV file containing samples for whom ‘activity’ is known. It has the following columns (each column contains sensor data for one of the sensor's axes)

Variable	**Description**
date	Date of measurement
time	Time of measurement
wrist	wrist where the device was placed to collect a sample 0 : left wrist 1 : right wrist
activity	0 : walking 1 : running
acceleration_x	X-axis acceleration from the accelerometer
acceleration_y	Y-axis acceleration from the accelerometer
acceleration_z	Z-axis acceleration from the accelerometer
gyro_x	X-axis Angular velocity from the accelerometer
gyro_y	Y-axis Angular velocity from the accelerometer
gyro_z	Z-axis Angular velocity from the accelerometer

Test File

CSV file containing samples for whom ‘activity’ is to be predicted.

Variable	**Description**
date	Date of measurement
time	Time of measurement
wrist	wrist where the device was placed to collect a sample 0 : left wrist 1 : right wrist
acceleration_x	X-axis acceleration from the accelerometer
acceleration_y	Y-axis acceleration from the accelerometer
acceleration_z	Z-axis acceleration from the accelerometer
gyro_x	X-axis Angular velocity from the accelerometer
gyro_y	Y-axis Angular velocity from the accelerometer
gyro_z	Z-axis Angular velocity from the accelerometer

Submission File Format

Variable	**Description**
date	Date of measurement
time	Time of measurement
activity	Predicted activity 0 : walking 1 : running

Public and Private LeaderBoard

Test file is further divided into Public (25%) and Private (75%).

- Your initial responses will be checked and scored on the Public data.
- The final rankings would be based on your private score which will be published once the competition is over.

Evaluation Criteria

Your model performance will be evaluated on the basis of **F1-score**.

Rubric

Component	Weightage
Data Cleaning and Data Visualization	25%
Model Building and Evaluation	60%
Pipeline and Deployment (Dashboard/Webapp)	15%