CodeBook

Brett Taylor

February 13, 2015

## Study Design

### The steps to producing the data set.

variables, the data, and any transformations or work that you performed to clean up the data Transformations Variables #Reference: [1] Davide Anguita, Alessandro Ghio, Luca Oneto, Xavier Parra and Jorge L. Reyes-Ortiz. Human Activity Recognition on Smartphones using a Multiclass Hardware-Friendly Support Vector Machine. International Workshop of Ambient Assisted Living (IWAAL 2012). Vitoria-Gasteiz, Spain. Dec 2012 ##Code Book ###Includes a list of the variables

## Functions

functions<-read.csv("functions.csv")  
 print(functions,row.names=FALSE)

## Function Description  
## mean Mean value  
## std Standard deviation  
## mad Median absolute value  
## max Largest values in array  
## min Smallest value in array  
## sma Signal magnitude area  
## energy Average sum of the squares   
## iqr Interquartile range  
## entropy Signal Entropy  
## arCoeff Autorregresion coefficients   
## correlation Correlation coefficient  
## maxFreqInd Largest frequency component  
## meanFreq Frequency signal weighted average  
## skewness Frequency signal Skewness   
## kurtosis Frequency signal Kurtosis  
## energyBand Energy of a frequency interval   
## angle Angle between two vectors

## Variables

tidy.data<-read.table("activity-measurement-by-subject.txt",header = TRUE)  
variables<-names(tidy.data)  
 print(variables)

## [1] "Activity"   
## [2] "Subject"   
## [3] "c001.timeBodyAcc.mean...X"   
## [4] "c002.timeBodyAcc.mean...Y"   
## [5] "c003.timeBodyAcc.mean...Z"   
## [6] "c004.timeBodyAcc.std...X"   
## [7] "c005.timeBodyAcc.std...Y"   
## [8] "c006.timeBodyAcc.std...Z"   
## [9] "c041.timeGravityAcc.mean...X"   
## [10] "c042.timeGravityAcc.mean...Y"   
## [11] "c043.timeGravityAcc.mean...Z"   
## [12] "c044.timeGravityAcc.std...X"   
## [13] "c045.timeGravityAcc.std...Y"   
## [14] "c046.timeGravityAcc.std...Z"   
## [15] "c081.timeBodyAccJerk.mean...X"   
## [16] "c082.timeBodyAccJerk.mean...Y"   
## [17] "c083.timeBodyAccJerk.mean...Z"   
## [18] "c084.timeBodyAccJerk.std...X"   
## [19] "c085.timeBodyAccJerk.std...Y"   
## [20] "c086.timeBodyAccJerk.std...Z"   
## [21] "c121.timeBodyGyro.mean...X"   
## [22] "c122.timeBodyGyro.mean...Y"   
## [23] "c123.timeBodyGyro.mean...Z"   
## [24] "c124.timeBodyGyro.std...X"   
## [25] "c125.timeBodyGyro.std...Y"   
## [26] "c126.timeBodyGyro.std...Z"   
## [27] "c161.timeBodyGyroJerk.mean...X"   
## [28] "c162.timeBodyGyroJerk.mean...Y"   
## [29] "c163.timeBodyGyroJerk.mean...Z"   
## [30] "c164.timeBodyGyroJerk.std...X"   
## [31] "c165.timeBodyGyroJerk.std...Y"   
## [32] "c166.timeBodyGyroJerk.std...Z"   
## [33] "c201.timeBodyAccMag.mean.."   
## [34] "c202.timeBodyAccMag.std.."   
## [35] "c214.timeGravityAccMag.mean.."   
## [36] "c215.timeGravityAccMag.std.."   
## [37] "c227.timeBodyAccJerkMag.mean.."   
## [38] "c228.timeBodyAccJerkMag.std.."   
## [39] "c240.timeBodyGyroMag.mean.."   
## [40] "c241.timeBodyGyroMag.std.."   
## [41] "c253.timeBodyGyroJerkMag.mean.."   
## [42] "c254.timeBodyGyroJerkMag.std.."   
## [43] "c266.frequencyBodyAcc.mean...X"   
## [44] "c267.frequencyBodyAcc.mean...Y"   
## [45] "c268.frequencyBodyAcc.mean...Z"   
## [46] "c269.frequencyBodyAcc.std...X"   
## [47] "c270.frequencyBodyAcc.std...Y"   
## [48] "c271.frequencyBodyAcc.std...Z"   
## [49] "c294.frequencyBodyAcc.meanFreq...X"   
## [50] "c295.frequencyBodyAcc.meanFreq...Y"   
## [51] "c296.frequencyBodyAcc.meanFreq...Z"   
## [52] "c345.frequencyBodyAccJerk.mean...X"   
## [53] "c346.frequencyBodyAccJerk.mean...Y"   
## [54] "c347.frequencyBodyAccJerk.mean...Z"   
## [55] "c348.frequencyBodyAccJerk.std...X"   
## [56] "c349.frequencyBodyAccJerk.std...Y"   
## [57] "c350.frequencyBodyAccJerk.std...Z"   
## [58] "c373.frequencyBodyAccJerk.meanFreq...X"   
## [59] "c374.frequencyBodyAccJerk.meanFreq...Y"   
## [60] "c375.frequencyBodyAccJerk.meanFreq...Z"   
## [61] "c424.frequencyBodyGyro.mean...X"   
## [62] "c425.frequencyBodyGyro.mean...Y"   
## [63] "c426.frequencyBodyGyro.mean...Z"   
## [64] "c427.frequencyBodyGyro.std...X"   
## [65] "c428.frequencyBodyGyro.std...Y"   
## [66] "c429.frequencyBodyGyro.std...Z"   
## [67] "c452.frequencyBodyGyro.meanFreq...X"   
## [68] "c453.frequencyBodyGyro.meanFreq...Y"   
## [69] "c454.frequencyBodyGyro.meanFreq...Z"   
## [70] "c503.frequencyBodyAccMag.mean.."   
## [71] "c504.frequencyBodyAccMag.std.."   
## [72] "c513.frequencyBodyAccMag.meanFreq.."   
## [73] "c516.frequencyBodyBodyAccJerkMag.mean.."   
## [74] "c517.frequencyBodyBodyAccJerkMag.std.."   
## [75] "c526.frequencyBodyBodyAccJerkMag.meanFreq.."   
## [76] "c529.frequencyBodyBodyGyroMag.mean.."   
## [77] "c530.frequencyBodyBodyGyroMag.std.."   
## [78] "c539.frequencyBodyBodyGyroMag.meanFreq.."   
## [79] "c542.frequencyBodyBodyGyroJerkMag.mean.."   
## [80] "c543.frequencyBodyBodyGyroJerkMag.std.."   
## [81] "c552.frequencyBodyBodyGyroJerkMag.meanFreq.."  
## [82] "c555.angle.tBodyAccMean.gravity."   
## [83] "c556.angle.tBodyAccJerkMean..gravityMean."   
## [84] "c557.angle.tBodyGyroMean.gravityMean."   
## [85] "c558.angle.tBodyGyroJerkMean.gravityMean."   
## [86] "c559.angle.X.gravityMean."   
## [87] "c560.angle.Y.gravityMean."   
## [88] "c561.angle.Z.gravityMean."