Wearable computing data analysis code book

Subject 1

Number of participants who attend the test [30]

Activity 1

6 different activities participant takes to record the data [6]

1. WALKING
2. WALKING_UPSTAIRS
3. WALKING_DOWNSTAIRS
4. SITTING
5. STANDING
6. LAYING

Measurements 66

Mean and standard deviation of 66 different test data records from accelerometer and gyroscope (Acc and Gyro). The acceleration signal is separated into body and gravity acceleration signals (Body and Gravity). “t” denotes time to record the data.

The body linear acceleration and angular velocity were derived in time to obtain Jerk signals. Also the magnitude of these three-dimensional signals were calculated using the Euclidean norm (Jerk and Mag).

Finally a Fast Fourier Transform (FFT) was applied to some of these signals produced. “f” denotes to the frequency.

These signals are used to estimate variables of the feature vector for each pattern: '-XYZ' is used to denote 3-axial signals in the X, Y and Z directions.

1. tBodyAcc.mean.X
2. tBodyAcc.mean.Y
3. tBodyAcc.mean.Z
4. tBodyAcc.std.X
5. tBodyAcc.std.Y
6. tBodyAcc.std.Z
7. tGravityAcc.mean.X
8. tGravityAcc.mean.Y
9. tGravityAcc.mean.Z

10. tGravityAcc.std.X
11. tGravityAcc.std.Y
12. tGravityAcc.std.Z
13. tBodyAccJerk.mean.X
14. tBodyAccJerk.mean.Y
15. tBodyAccJerk.mean.Z
16. tBodyAccJerk.std.X
17. tBodyAccJerk.std.Y
18. tBodyAccJerk.std.Z
19. tBodyGyro.mean.X
20. tBodyGyro.mean.Y
21. tBodyGyro.mean.Z
22. tBodyGyro.std.X
23. tBodyGyro.std.Y
24. tBodyGyro.std.Z
25. tBodyGyroJerk.mean.X
26. tBodyGyroJerk.mean.Y
27. tBodyGyroJerk.mean.Z
28. tBodyGyroJerk.std.X
29. tBodyGyroJerk.std.Y
30. tBodyGyroJerk.std.Z
31. tBodyAccMag.mean
32. tBodyAccMag.std
33. tGravityAccMag.mean
34. tGravityAccMag.std
35. tBodyAccJerkMag.mean
36. tBodyAccJerkMag.std
37. tBodyGyroMag.mean
38. tBodyGyroMag.std
39. tBodyGyroJerkMag.mean
40. tBodyGyroJerkMag.std
41. fBodyAcc.mean.X
42. fBodyAcc.mean.Y
43. fBodyAcc.mean.Z
44. fBodyAcc.std.X
45. fBodyAcc.std.Y
46. fBodyAcc.std.Z
47. fBodyAccJerk.mean.X
48. fBodyAccJerk.mean.Y
49. fBodyAccJerk.mean.Z
50. fBodyAccJerk.std.X
51. fBodyAccJerk.std.Y
52. fBodyAccJerk.std.Z
53. fBodyGyro.mean.X

54. fBodyGyro.mean.Y
55. fBodyGyro.mean.Z
56. fBodyGyro.std.X
57. fBodyGyro.std.Y
58. fBodyGyro.std.Z
59. fBodyAccMag.mean
60. fBodyAccMag.std
61. fBodyBodyAccJerkMag.mean
62. fBodyBodyAccJerkMag.std
63. fBodyBodyGyroMag.mean
64. fBodyBodyGyroMag.std
65. fBodyBodyGyroJerkMag.mean
66. fBodyBodyGyroJerkMag.std