Human Activity Recognition Using Smartphones - KNeighbors Classifier:-

In this project you will design a robust activity recognition system based on the smartphones, as you know mobile devices have accelerometer as the sensor which collects the activities. These activities can be classified using K-nearest neighbor.

REQUIREMENT:-

1. Pandas
2. Numpy
3. Matplotlib
4. Scikit Learn

Machine Learning Model Used:-

1. k-nearest neighbors

Database Information:-

The data was collected from 30 subjects aged between 19 and 48 years old performing one of 6 standard activities while wearing a waist-mounted smartphone that recorded the movement data. Video was recorded of each subject performing the activities and the movement data was labeled manually from these videos.

Attribute Information:-

For each record in the dataset it is provided:

- Triaxial acceleration from the accelerometer (total acceleration) and the estimated body acceleration.

- Triaxial Angular velocity from the gyroscope.

- A 561-feature vector with time and frequency domain variables.

- Its activity label.

- An identifier of the subject who carried out the experiment.

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STEPS:-

1. Importing Libraries
2. Exploring the Dataset
3. Exploratory Data Analysis
4. Data Preprocessing
5. Model Building

KNeighborsClassifier

1. Evaluation
2. Conclusion

Citation Request:-

- Davide Anguita, Alessandro Ghio, Luca Oneto, Xavier Parra and Jorge L. Reyes-Ortiz. A Public Domain Dataset for Human Activity Recognition Using Smartphones. 21th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, ESANN 2013. Bruges, Belgium 24-26 April 2013