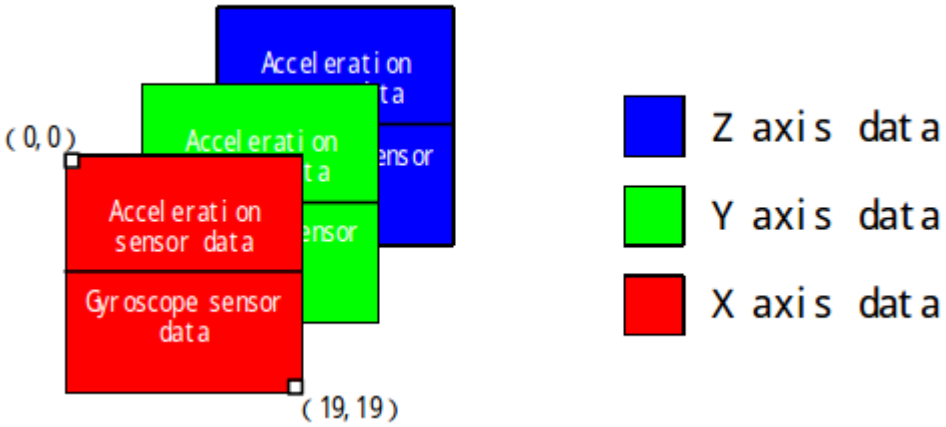
Machine Learning Assignment

You are given with data of 8 classes in two files – 'train.csv' and 'test.csv'. Each entry contains 1201 columns where the column 'label' represents the class. The remaining 1200 columns represent the features. The features represent the values of accelerometer and gyroscope in x, y and z axis. As shown in figure below, the 1200 features are formed as (20 x 20 x 3). The labels represent various activities recognized based on these features.



Develop a jupyter notebook to build a classification model based on following techniques -

1. SVM
2. Random Forrest
3. CNN of not more than 3 convolution layers (excluding the input and output layers)

In the notebook following should be present–

(i) Splitting of data into test and training set.
(ii) Accuracy over test dataset.
(iii) Confusion Matrix in each of the models.
(iv) Parameter selection methodology for each model.
(v) A function to predict the class of a single input image.

Finally, also write in brief about the algorithm which attained the maximum accuracy and your intuition behind why it attained the highest accuracy.

DELIVERABLE – Properly formatted Jupyter Notebook