**CNN Model Description**: Predicting user activity based on XYZ accelerometer readings (trained using PyTorch)

* Training data:
  + Dataset of 104,000 accelerometer XYZ readings (sampling rate of 200) from 33 different participants
  + **Activity labels**: Sitting, Standing, Walking, Upstairs, Downstairs, Running
  + **Post processing features** (9): Xavg, Yavg, Zavg, Xabsdiff, Yabsdiff, Zabsdiff, Xstanddev, Ystanddev, Zstanddev, Resultant Vector
  + Z-score normalization applied to dataset
  + Training and testing data split into 80% and 20% respectively
* Model Architecture
  + 3 convolutional layers
  + 2 max pooling layers
  + Dropout regularization layer (p = 0.5)
* Model hyperparameters
  + 100 epochs
  + Learning rate = 0.001
  + Weight decay = 0.0001
  + Adam optimizer
* Training results over 100 epochs
  + 96.5% training and 94.6% validation accuracy
  + 0.1079 training and 0.2660 validation loss
* 10-fold cross validation (K folds):
  + Average Validation Accuracy: 91.65%
  + Standard Deviation of Validation Accuracy: 1.53%
  + Training Accuracy: 93.00%
  + No significant overfitting detected.

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