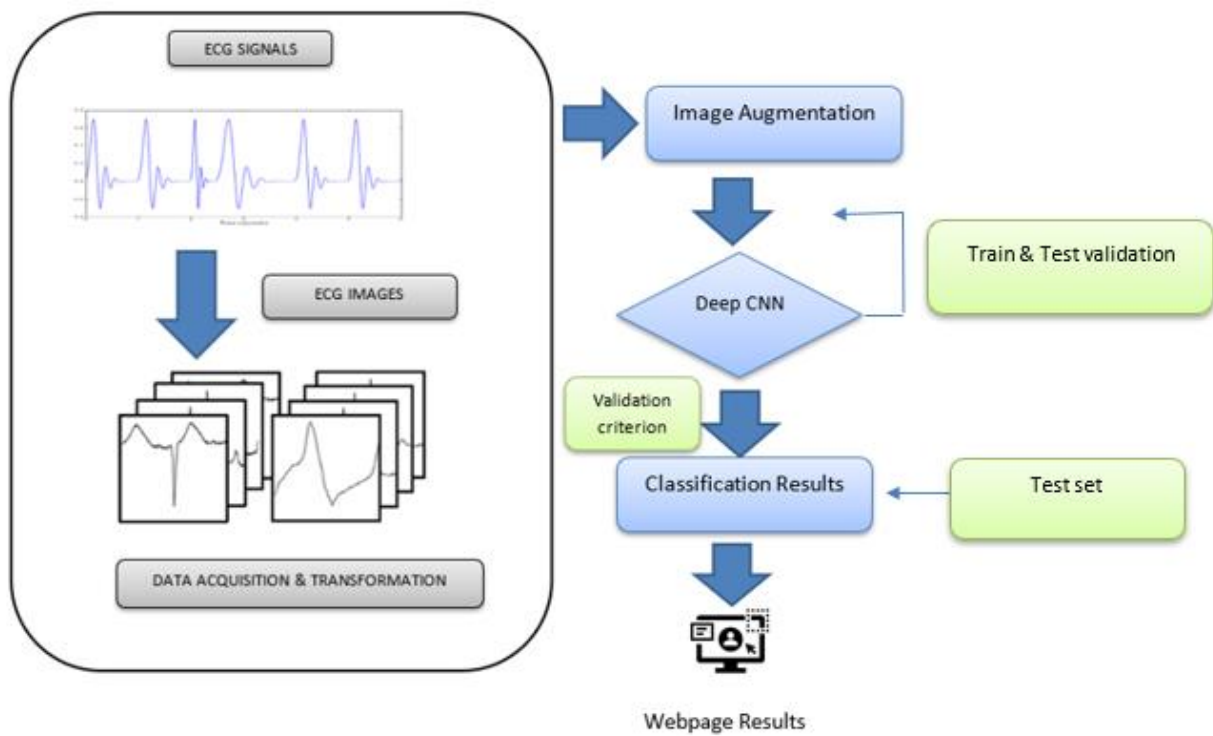| Date	18 October 2022
Team ID	PNT2022TMID38553
Project Name	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation
Maximum Marks	4 Marks

SOLUTION ARCHITECTURE:

- We are sequentially deploying four different types of CNN layers. Two-dimensional convolution layer: A two-dimensional convolution layer applies sliding convolutional filters on two-dimensional input. By moving the filters along the input both vertically and horizontally, computing the dot product of the weights and the input, and adding a bias term, the layer convolves the input.

- Pooling Layer: To make the feature maps smaller, pooling layers are utilised. As a result, it lessens the quantity of computation done in the network and the number of parameters to learn.

- Connected layer: The fully-connected layer is used to extend the connections between all features once features are extracted from various convolution layers and pooled. The SoftMax layer then does a logistic regression classification. The weighted sum of the output from the preceding layer is sent to the activation function via the fully linked layer.

- Dropout Layer: Prior to the completely connected layer, there is typically a dropout layer. During convolution neural network training, the dropout layer will randomly disconnect some neurons from the network for a short period of time. This lowers overfitting, reduces joint adaptability between neuron nodes, and improves the network's capacity for generalisation.

- Then the dataset will be collected and uploaded.

- The following primary tasks are part of Image pre-processing: Bringing in the ImageDataGenerator library By producing altered versions of the dataset's photos, the approach of "image data augmentation" allows one to fictitiously increase the size of a training dataset.

- Model building : It involves various tasks such as, initialisig the model using keras library, maxpool layer to down sample the data, flatten layer to flatten the input, adding hidden layers and output layers.

- Training the model with the given dataset.

- Saving the model with .h5 extension.

- Loading necessary libraries and testing the model.

- Building the application that will be integrated into the model.

Architecture diagram