Project Design Phase-I

Proposed Solution Template

Date : 24 September 2022

Team ID : PNT2022TMID00042

Project Name Project : Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation

Maximum Marks : 2 Marks

1. Problem Statement :-

The presented problem wants us to identify and classify the 6 major types of Arrhythmia provided in the dataset using Spectral Images of the Electrocardiogram that are employed for prediction of Cardiovascular Diseases.

2. Idea/Solution Description :-

The given dataset for this problem initially undergoes various data pre-processing steps to identify various forms of noise in the dataset and denoise them to make the data suitable for training a deep learning model. We will employ 2-Dimensional Convolutional Neural Network Model to carry out this classification

3. Novelty/Uniqueness :-

-> Deploys the model to a mobile application by assigning all heavy pre-processing to the cloud through an API

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4. Social Impact/Customer Satisfaction :-

-> Promotes Simplicity

-> Promotes Self-Diagnosis

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5. Business Model

-> Deployed in the Cloud to use as an application

-> An API that can be used by mobile applications to run the classification program

6. Scalability of the Solution

-> Increasing the dataset used for model training will in turn increase the application's scalability

-> Making the model more reliable will lead to hospitals using this application, this also eliminates human error

-> More powerful Cloud Instances for Concurrent use of the application

-> Periodically expanding the dataset and updating the model to increase scalability and reliability