Ideation Phase

Literature survey on the selected project & Information Gathering

Date	24/09/2022
Team ID	PNT2022TMID52880
Project Name	Classification of Arrhythmia by UsingDeep Learning with 2-D ECG Spectral Image Representation.
Maximum Marks	4 Marks

SI.NO	AUTHOR(S)	TITLE	METHODOLOGY
1	J. Lang and F.Yang	An improved classification method for arrhythmia electrocardiogramdataset	In this paper Difference, Weighted k-nearest neighbor(DF-WKNN) classifier is presented to recognize unbalanced UCI cardiac arrhythmia data from the UCIarrhythmia data set. This method incorporates the correlation of K neighbors into the classification.
2	Amin Ullah, Syed Muhammad Anwar, Muhammad Bilal and Raja Majid Mehmood	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation	In this study, they proposed a two-dimensional (2-D) convolutional neural network (CNN) model for the classification of ECG signals into eight classes; namely, normal beat, premature ventricular contraction beat, paced beat, right bundle branch block beat, left bundle branch block beatpremature , atrial contraction beat, ventricular flutter wave beat, and ventricular escape beat.The one-dimensional ECG time series signals are transformed into 2-D spectrograms through a short-time Fourier transform. The 2-D CNN model consisting of four convolutional layers and four pooling layers is designed for extracting robust features and testing was done.

3	Mohebbanaaz, Y. P. Sai and L.V. R. kumari	A Review on Arrhythmia Classification Using ECG Signals	This paper presents survey issues concerned in ECG denoising, feature extraction,optimization and classification. Mainly methods used toanalyze the performance.
4	RobertaVanzato, FrancescoBeritelli	Automatic ECG diagnosis usingConvolutionalNeural Network(2020)	For the “atrial premature beat” class, ECG segments were correctly classified 100% of the time. Finally, for the “premature ventricular contraction” class, ECG segments were correctly classified 96% of the time. In total, there was an average classification accuracy of 98.33%. The sensitivity (SNS) and the specificity (SPC) were, respectively, 98.33% and 98.35%.
5	C. Ye, M. T. Coimbra and B.V. K. VijayaKumar	Arrhythmia detection and classification using morphological and dynamic features of ECG signals	In this paper, a new approach is proposed for arrhythmia classification based on a combination of morphological and dynamic features. WaveletTransform (WT) and Independent Component Analysis (ICA) are applied separately to each heartbeat to extract corresponding coefficients, which are categorized as ‘morphological’ features.