Ideation Phase

Literature survey on the selected project & Information Gathering

Date	19 September 2022
Team ID	PNT2022TMID03100
Project Name	Project - Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation
Maximum Marks	4 Marks

SI.NO	AUTHOR(S)	TITLE	METHODOLOGY	LIMITATIONS
1	C. Ye, M. T. Coimbra and B.V. K. Vijaya Kumar	Arrhythmia detection and classification using morphologicaland 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. Wavelet Transform (WT) and Independent Component Analysis (ICA) are applied separately to each heartbeat to extract corresponding coefficients, which are categorized as 'morphological' features.	Techniques discussed here are quite outdated.
2	Monali Choudhary, Anisha Patnaik, Dipali Phatak, Dhanashri Deokar, Dilip Hingorani .	Cardiac Arrhythmia Detection using Deep Learning	Fundamental focal point of this investigation is to execute a basic, solid and effectively pertinent learning method for the grouping of the chosen three diverse heart conditions (heart arrhythmia, Congestive Heart Failure, Normal sinus rhythm) so that diagnosis can be done for the same. The results exhibited that the moved profound learning highlight extractor fell with a traditional back proliferation neural organization had the option to get exceptionally elite rates.	Validation accuracy Strategy are not discussed in detailed fashion.

3	Mohebbanaaz, Y. P. Sai and L.V. R. kumari	A Review on Arrhythmia Classification Using ECG Signals	This paper presents surveyon issues concerned in ECG denoising, feature extraction, optimization and classification. Mainly methods used to analyze the performance.	Techniques used here for ECG denoising, Feature Extraction and Classification can be improved
4	Cui-fang Zhao, Wan-yun Yao, Mei-juan Yi, Chao Wan, Yong-Le Tian	Arrhythmia Classification Algorithm Based on a Two-Dimensional Image and Modified Efficient Net	In this study, we propose an arrhythmia classification algorithm based on two-dimensional (2D) images and modified Efficient Net. First, we developed a method for converting original one-dimensional (1D) ECG signals into 2D image signals. In contrast with the existing classification method that uses only the time-domain features of a 1D ECG signal, the classification of 2D images can consider the spatiotemporal characteristics of the signal.	The main limitation of the proposed arrhythmia classification algorithm is the low positive prediction accuracy for identifying APC beats. This is caused by data imbalance: specifically, there are many more NOR beats than other beats. The ratio of APC beats is only 2.3% in the data set. Moreover, multiple ECG samples from the same patient will generally exhibit the greatest similarity in heartbeats.
5	J. Lang and F.Yang	An improved classification method for arrhythmia electrocardiogram dataset	In this paper Difference Weighted k-nearest neighbor (DF-WKNN) classifier is presented to recognize unbalanced UCIcardiac arrhythmia data from the UCI arrhythmia data set. This method incorporates the correlation of K neighbors into the classification	ECG pre-processing methods are not discussed in detailed fashion