World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Bundle Block Detection Using Spectral Coherence and Levenberg Marquardt Neural Network

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Abstract : This study describes a procedure for the detection of Left and Right Bundle Branch Block (LBBB and RBBB) ECG patterns using spectral Coherence(SC) technique and LM Neural Network. The Coherence function finds common frequencies between two signals and evaluate the similarity of the two signals. The QT variations of Bundle Blocks are observed in lead V1 of ECG. Spectral Coherence technique uses Welch method for calculating PSD. For the detection of normal and Bundle block beats, SC output values are given as the input features for the LMNN classifier. Overall accuracy of LMNN classifier is 99.5 percent. The data was collected from MIT-BIH Arrhythmia database.

Keywords : bundle block, SC, LMNN classifier, welch method, PSD, MIT-BIH, arrhythmia database
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020