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(57) Abstract :

Heart rate and breathing pattern are the vital signs indicating the physical condition of a person. Smart health monitoring involves measurement and analysis of these vital signs. In this invention, a novel method for identifying the pattern of heart rate of a person is proposed. This invention is able to detect heart abnormalities namely atrial fibrillation, atrial flutter and ventricular fibrillation. Front end hardware is IoT based which involves ECG patch consisting of wearable analog front end circuit with a Bluetooth module able to detect ECG signals. Real time ECG signal is displayed on the smart devices via the application which is also able to label instantly unusual signals detecting cardiac disease in real time. ECG signals recorded from the wearable ECG patch is sent to cloud database where ECG signals of each of the user is stored, acting as a big data database for the Artificial Intelligence algorithm for detecting cardiac disease. Algorithm for detection of heart disease is based on convolutional neural network which provides an accuracy of 94.8%.

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