Abstract:

The increasing number of heart disease demands the expansion of cutting-edge predictive models for earlier diagnosis and treatment. In the past few years, integrating Internet of Things (IoT) devices with healthcare systems has developed hopeful solutions for real-time health monitoring and disease forecasting. Our paper proposes a predictive model for heart disease using IoT sensors, cloud technology and machine learning algorithms. The IoT-based system involves a network of sensors that continuously monitor physical parameters like ECG, blood pressure, heart rate and pulse rate. These non-invasive sensors collect real-time health data from patients and convey it to a cloud-based platform for securely storing and processing. After storing data, it undergoes machine learning analysis based on a dataset including medical records and attributes relevant to heart disease to train our model. A variety of supervised learning algorithms, like logistic regression, decision tree and support vector machines, are applied to build our cutting-edge predictive model. Our model achieves up to 99% accuracy in prediction, offering a significant boost to the reliability of early diagnosis. The procedures of our model are to identify patterns from the data collected by IoT sensors and find relations between different health parameter and their possibility of heart disease. The ultimate solution produces valuable insights into the patient's health which is more helpful for giving a boost in improving treatment procedures for the early detection of heart disease. Our model can alert healthcare providers and patients if irregular readings are sensed and enable timely intrusion and preventive actions. The predictive model can contribute to long-term monitoring and personalised strategies. This IoT-based heart disease prediction model offers a cost-efficient and effective strategy for cardiovascular healthcare. Integrating real-time data with machine learning boosts the improvement of the accuracy of heart disease diagnosis and potentially saves lives with early detection.

Keywords: IoT, Cloud data storage, Machine Learning