Electrocardiogram Signal Denoising Using Hybrid Filtering for Cardiovascular Diseases Prediction

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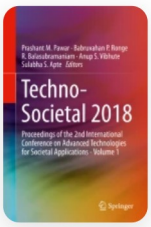

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Sanjay Ghodake, Shashikant Ghumbre & Sachin Deshmukh

Abstract

One of the leading causes of death worldwide is different types of heart diseases. Such diseases are called cardiovascular diseases (CVD). Thus, the accurate diagnosis of CVD is important at the early stages to prevent from any harm. The traditional methods for CVD diagnosis are inaccurate and expensive. The Electro Cardiogram (ECG) is an inexpensive way for the CVD diagnosis. The ECG data is effectively used with the Computer Aided Diagnosis (CAD) systems for the accurate and early prediction of CVD. ECG composed of important heart-related beats which can assist in evaluating the behavior of heart. In the recent past, there are several CAD

systems designed for CVD diagnosis using the raw ECG signals, and still, the number of research works going on. The CAD system for CVD analysis is composed of three main steps pre-processing, future extractions, and classification. The pre-processing method helps to improve the chances of accurate prediction, as the presence of irrelevant raw data in the original signal may lead to inaccurate outcomes. The outcome of this paper is a practical implementation and evaluation of hybrid filtering method designed for ECG signal denoising.

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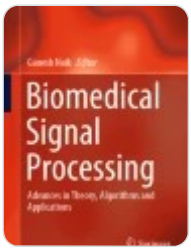

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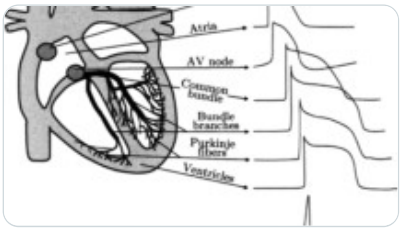

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