

Classification Of Heart Valve Diseases Using Correlation Analysis

Abstract

As a subjective and qualitative method, heart sound auscultation has its inherent limitations. In this paper, we present an analytical perspective on heart sound auscultation and explain how to classify heart diseases using correlation analysis which is done in frequency domain. Abnormal heart sounds taken from a heart sound simulator are being cross-correlated with normal heart sound to get different patterns of graph plots for each abnormality. Seven different heart valve diseases were classified with the aid of an artificial neural network system. All tested data was classified correctly to their classes. It is concluded that this study is a simple and effective way to classify heart valve disorder based on heart sounds.

Author Keywords

Classification; Correlation analysis; Frequency domain analysis; Heart sound