A Model for Heart Sounds Segmentation using Neural Networks

Oriana-Maria Oniciuc, Liviu Ciortuz, Adrian Iftene,
Faculty of Computer Science, "Alexandru Ioan Cuza" University of Iasi
{maria.oniciuc, ciortuz, adiftene}@info.uaic.ro

Abstract

According to the World Health Organisation, cardiovascular diseases are the number one cause of death globally. These diseases have remained the leading causes of death in the last 15 years. Any work done in detecting signs of heart disease could therefore have a significant impact on world health.

Classifying Heart Sounds PASCAL provides us with a dataset that is gathered in real-world situations and frequently contains background noise of every conceivable type, being recorded both in a Hospital environment by a doctor (using a digital stethoscope) and at home by the patient (using a mobile device). Success in classifying this form of data requires multiples preprocessing of the audio recordings. This paper presents an overview of approaches to analysis of heart sound signals. The main purpose of this study is developing an automatic methodology for identifying the start moment of heartbeats in the phonocardiograms. We propose a model (artificial neural network) that enhances the dataset through noise cancellation, and helps detecting the beginning of a heartbeat.