Abstract

A flexible framework that performs real-time analysis of physiological data to monitor people's health conditions is discussed in this paper. Patients suspected of suffering sleep apnea and hypopnea syndrome (SAHS) have to undergo sleep studies such as expensive polysomnography to be diagnosed. Healthcare professionals are constantly looking for ways to improve the ease of diagnosis and comfort for this kind of patients as well as reducing both the number of sleep studies they need to undergo and the waiting times.
Relating to this scenario, some research proposals and commercial products are appearing, but all of them record the physiological data of patients to portable devices and, in the morning, these data are loaded into hospital computers where physicians analyze them by making use of specialized software. The aim of this paper is to show a very accurate classifier that is able of identifying the presence of sleep apneas from blood oxygen saturation signal fragments taken from pulsioximetry systems (SpO2 & HRV) implemented on smart phone in real time.

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**Index Terms**

Computer Science  
Bio-medical Applications

**Keywords**

Real time Data stream mining  
signal Processing  
Feature Extraction