

Dissertação de Mestrado em Engenharia Informática (2017/2018)

Title: Classification Models for Sleep Apnea Detection and/or Prediction

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Summary

Sleep apnea syndrome (SAS), which can significantly decrease the quality of life is associated with a major risk factor of health implications such as increased cardiovascular disease, sudden death, depression, irritability, hypertension, and learning difficulties. Thus, it is relevant and timely to develop a classification model that should provide an auto-adaptive and no external-human action dependency.

The base idea for this research is to create a computerized model with capability to support the clinical decision making for sleep apnea diagnosis. In addition, a benchmark of different methods for features selection, signal processing, data analysis and its modeling for the decision-making on multiple scenarios should be provided.

Objectives

The main objective of this work is the development of an application that applies signal processing methods, and algorithms on the collected data. In addition, a comparative benchmark composed by different techniques should be produced.

Tasks

- T1 – Technological background study;
- T2 – Review the State-of-the-art;
- T3 – Requirements Analysis: what kind of signals? what kind of data? what kind of model to handle data?, ... ;
- T4 – Design and construction, including integration;
- T5 – Testing and evaluation;
- T6 – The writing of the dissertation.

Expected result

In this research work the following deliverables are expected:

Two journal papers describing the process.

Timeline

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
T1	X	X						
T2		X	X					
T3		X	X					
T4			X	X	X			
T5					X	X	X	
T6				X	X	X	X	X

References:

n/a