

Dissertação de Mestrado em Engenharia Informática (2019/2020)

Title: Real-time Features Detection for Cardiovascular diseases Prediction using ECG Signals

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Summary

Cardiovascular diseases (CVD) are the number one cause of death worldwide, in 2016, caused the death of 17,9 Million people (about 31% of all deaths). Whereas a considerable amount of them could be aided through an electrocardiogram (ECG) trace analysis, which is considered as the gold standard of cardiovascular monitoring, The Interpretation of ECG is a complex task involving a visual inspection. To minimize this complexity computer-aided diagnosis systems has been used, to carried out the task of detection or classification of CVD. However, the first step for CVD detection or classification includes features detection based on a specific case. . Since, it has been reported in existing studies that diagnosis of CVD is essential so that medical professionals may offer proper as well as timely treatment. Therefore , appropriate features selection is crucial for correct diagnosing and treating of the patients having CVD. . This proposal focuses on dealing with pre-processing of ECG signal, segmentation and real-time features detection and selection based on Artificial Intelligence techniques such as deep learning. Moreover, this study also aims to provide a useful tool based on selected features for different cases of CVD classification or prediction.

Tasks

- T1 – Technological background study;
- T2 – Review the State-of-the-art;
- T3 – Requirements Analysis;
- T4 – Design and construction;
- T5 – Testing and evaluation;
- T6 – The writing of the dissertation.

Expected result

In this research work the following deliverables are expected:

- A validated computational tool;
- A publication describing the method and the validation results.

Timeline

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

References:

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