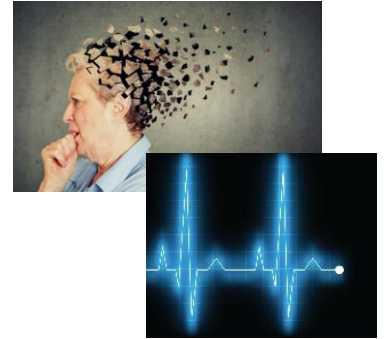


AlzSDR tool - a tool with Margolacs algorithm embedded for Alzheimer's detection and

This tool is based on a new electroencephalogram (EEG) signal processing tool - the Margolacs - to characterize the Alzheimer's disease (AD) activity and to assist on its diagnosis and evolution prospecting for different stages: Mild Cognitive Impairment (MCI), Mild and Moderate AD (ADM) and Advanced AD (ADA). This tool improves the diagnosing process and reduce the costs.



The Problem

Alzheimer's disease (AD) is a chronic and neurodegenerative disorder that progressively affects all brain functions. It is one of the most debilitating diseases of modern societies and the leading cause of dementia representing more than 50 million people all over the world. An early and accurate diagnosis method can play a key role in medical intervention to reduce brain damage, preserve daily functioning for longer and give the patient time to plan the future. The current available diagnostic methods are very expensive, making AD is the costliest chronic disease for society.

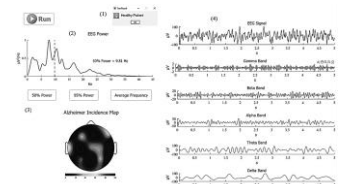
The Technology

Artificial neural networks have been trained with Margolacs distances to develop an automatic method for diagnosing and prospecting AD. The system reached an accuracy of >98% outperforming the state-of-art EEG and non-EEG methods.

The AlzSDR tool as an interface that provide to medical doctors some important information such as: (1) diagnosis; (2) Alzheimer Scalp-level activity prospecting; (3) Power spectral density metrics; (4) recording data and the corresponding EEG conventional sub-bands plot.

Our Solution

This technology proposes a new method capable to obtain an indicator of presence for Alzheimer's disease using electroencephalogram (EEG) signals. A set of features extracted from EEG signals will be processed to feed an Artificial Neural Networks (ANN) with aim to diagnose and prospect AD in an automatic way.



Schematic representation an interface: (1) indicator for AD; (2) power spectral density metrics; (3) Alzheimer Scalp-level activity prospecting; (4) recording data.



BENEFITS

- ✓ **Improvement in diagnosing Alzheimer's disease;**
- ✓ **Provides more detailed information to the doctor;**
- ✓ **Reduce Alzheimer's disease diagnostic costs.**



MARKET OPPORTUNITY

This technology has the potential to be applied as a diagnostic tool.



DEVELOPMENT PHASE

The developed method have tested using real-world data (ECG datasets).



INTELLECTUAL PROPERTY STATUS

Pending Patent.

AVAILABLE FOR

- ✓ Development/scale-up collaboration;
- ✓ Technology transfer.