

## **A hybrid method used speech signal processing and the wrapper methods in diagnosis of Parkinson disease**

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### **Abstract**

If we come back in time just to the 19th century exactly to the start of the development of the industrial domain, we will figure out that the machines are inspired by nature. when the train was invented it was inspired by the snake then the plane based on the bird's flying mechanism. Until nowadays the industry still inspires by the systems in nature, such as the owl's ability to turn his head by 360° that is used in captors and to assure stability in drones. In the medical domain. Concerning the phase of diagnosis of the disease as Socrates said “understanding the questions is the half of the answer”, which means when we could make an accurate diagnosis that will be considered as reaching the half of the healing process. For tackling the problem of occur an accurate decision it has been recourse to the inspiration by nature owing to build algorithms of optimization as the wrapper method like Genetic Algorithm GA, etc. In this presentation, we will interpret the efficacy of some of the wrapper methods in the diagnosis of Parkinson's disease the second most common neurologic disease after Alzheimer's. based on the speech signal processing of patient uttering vowels by using the discrete wavelet transform DWT. Then extract the features matrix contain Linear Predictive Coding (LPC), ZeroCrossing Rate (ZCR), Mel Frequency Cepstral Coefficient (MFCC), and wavelet Shannon entropy. and the machine learning concerning the classification phase.

### **Biography:-**

Soumaya Zayrit was born in ZAOUIAT CHEIKH BENI MELLAL, Morocco on July 18th, 1994. Received a Master's degree in Electronics, Electrotechnics, Automatic, and Industrial Computing from Faculty of Science Ain Chok. University Hassan II - Casablanca, Morocco, in 2017 she is a research student in Research Laboratory in Industrial Engineering, Information Processing and Logistics (GITIL). Faculty of Science Ain Chok, University Hassan II - Casablanca, Morocco. Her interests are in speech processing for detecting people with neurological disorders. She has published 5 articles and has reviewed 2 articles.

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