

Features Dimensionality Reduction and Multi-Dimensional Voice-Processing Program to Parkinson Disease Discrimination

Authors : Djamila Meghraoui, Bachir Boudraa, Thouraya Meksen, M.Boudraa

Abstract : Parkinson's disease is a pathology that involves characteristic perturbations in patients' voices. This paper describes a proposed method that aims to diagnose persons with Parkinson (PWP) by analyzing on line their voices signals. First, Thresholds signals alterations are determined by the Multi-Dimensional Voice Program (MDVP). Principal Analysis (PCA) is exploited to select the main voice principal components that are significantly affected in a patient. The decision phase is realized by a Multinomial Bayes (MNB) Classifier that categorizes an analyzed voice in one of the two resulting classes: healthy or PWP. The prediction accuracy achieved reaching 98.8% is very promising.

Keywords : Parkinson's disease recognition, PCA, MDVP, multinomial Naive Bayes

Conference Title : ICBBE 2017 : International Conference on Biophysical and Biomedical Engineering

Conference Location : London, United Kingdom

Conference Dates : May 25-26, 2017