Python project : Early Prediction of Parkinson Disease Using Machine Learning algorithms

Abstract
In recent years the number of people suffering from Parkinson's disease (PD) has increased to 10 million worldwide. Parkinson's disease is a disorder of the central nervous system which causes stiffness or slowing of movements and tremor. The purpose of the proposed model is to correctly identify the presence of Parkinson's disease in an individual using Machine learning (ML) algorithms. This project is in the domain of data science. This model will be made using XGBClassifier which will be imported from XGBoost library to build a model that accurately diagnoses a patient for PD . Dataset along with the necessary libraries will be imported, perform data analysis and visualization to get features and labels, scale the features, build an XGBClassifier and evaluate our trained model. To classify PD people from healthy people speech signal processing is done through ML algorithms.

Libraries used
The various python libraries used for the project are : numpy, scikit-learn, matplotlib, pandas, xgboost.

Timeline:
Day 1-2 : Understand the about Parkinson's Disease and study related models
Day 3-4 : Import the necessary Libraries and Datasets
Day 5-6 : Perform Analysis of the dataset
Day 7-8 : Data Visualization
Day 9-10 : Data preparation and Model Training
Day 11-12 : Study about XG-Boost
Day 13-14 : Train and Evaluate XG-Boost Algorithm

Featured to be learned:
Understand the theory on XGBoost and other machine learning algorithms.

Motivation
As I am from the biosciences department I wish to build a model related to the same field. I had also done a course on movement neuroscience so this project is the implementation of python to the biological concepts that are already known to me. I have also been learning ML during this vacation so this project is the perfect amalgamation of all the different courses I have taken so far.

References
1. https://easychair.org/publications/preprint/NQlD
2. https://www.coursera.org/learn/machine-learning-with-python
3. https://data-flair.training/blogs/python-machine-learning-project-detecting-parkinson-disease/