Detecting Parkinson's Disease using Machine Learning

Literature survey:

S.No	Title	Author and year of Publications	Proposed work	Limitations
1.	Early Detection of Parkinson's Disease Using Deep Learning and Machine Learning	Wu Wang1 et al[1] [2017]	This paper states that predicting Parkinson's disease at an early stage of the patient is better to treat the disease in a better and efficient way. For this model the important attributes that were considered were Rapid Eye Movement and olfactory loss, Cerebrospinal fluid data, and dopaminergic imaging markers. With these the model was able to predict with the accuracy score of 96.4%.	Though this was able to predict Parkinson's disease at early stage but when it became to mid stage it showed poor accuracy.
2.	High-Accuracy Detection of Early Parkinson's Disease through Multimodal Features and Machine Learning.	R. Prashanth et al[2][2020]	This paper shares the information on predicting Parkinson's disease at an early stage of the patient. By the time PD occurs, the manifestation of clinical symptoms occur, more than 60% of the dopaminergic neurons have already been lost. So in order to treat it at an early stage by analyzing sleep Behavior Disorder (RBD) and olfactory loss. In this paper, we use the nonmotor features of RBD and olfactory loss.	The accuracy that was able to achieve by the model is comparatively very low.

3.	A Comparative Study of Existing Machine Learning Approaches for Parkinson's Disease Detection.	Gunjan Pahuja et al[3][2018]	The focus of this research paper is to provide an insightful survey and compare the existing computational intelligence techniques used for PD detection. To save time and increase treatment efficiency, classification has found its place in PD detection. The existing knowledge review indicates that many classification algorithms have been used to achieve better results, but the problem is to identify the most efficient classifier for PD detection. The challenge in identifying the most appropriate classification algorithm lies in their application on local dataset.	Using ANN Levenberg–Marquardt algorithm was found to be the classification accuracy (95.89%). It is still low comparatively.
4.	A Deep Learning Based Method for Parkinson’s Disease Detection Using Dynamic Features of Speech.	Changqin Quan et al[4][2020]	The author proposes an alternative view on detecting parkinson’s disease from the patient.it is that by analyzing voice changes of the peoples. Using time series data and applying LSTM it could be able to predict Parkinson's disease.	Using voice notes alone from the patient is not at all sufficient to predict Parkinson's disease with high accuracy.
5.	Machine Learning Approaches for Detecting Parkinson’s Disease from EEG Analysis: A Systematic Review.	Ana María Maitín et al[5][2020]	The author proposes they analyzed studies that used machine learning (ML) techniques to diagnose PD through resting state or motor activation electroencephalography (EEG) tests. Methods:	The accuracy that was able to be achieved is low. When it comes to health care the accuracy has to be at least 99%.

			The review process was performed following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines	