BOOK/JOURNEL	AUTHOR'S NAME	INFERENCE
Application of Machine Learning in a Parkinson's Disease Digital Biomarker Dataset Using Neural Network Construction (NNC) Methodology Discriminates Patient Motor Status	Ioannis G. Tsoulos, Georgia Mitsi, Athanassios Stavrakoudis and Spyros Papapetropoulos	They proposed the application of Machine Learning in a Parkinson's Disease Digital Biomarker Dataset Using Neural Network Construction Methodology Discriminates Patient Motor Status where the objective is to provide preliminary evidence that artificial intelligence systems may allow one to discriminate PD patients from and determine different features of the disease. The recently introduced Neural Network Construction technique was used here to classify data collected by a mobile application into two categories. The NNC algorithm discriminated individual PD patients from HVs with 93.11% accuracy and ON vs OFF states with 76.5% accuracy.
Deep Learning-Based Parkinson's Disease Classification Using Vocal Feature Sets- IEEE	Hakan Gunduz	He proposed Deep Learning-Based Parkinson's Disease Classification Using Vocal Feature Sets(2019) Parkinson's Disease (PD) is a progressive neurodegenerative disease with multiple motor and non-motor characteristics. PD patients commonly face vocal impairments during the early stages of the disease. So, diagnosis systems based on vocal disorders are at the forefront on recent PD detection studies. Our study proposes two frameworks based on Convolutional Neural Networks to classify Parkinson's Disease (PD) using sets of vocal (speech) features. Extracted deep features are not only successful at distinguishing PD patients from healthy individuals but also effective in boosting up the discriminative power of the classifiers

Building a Machine-Learning Framework to Remotely Assess Parkinson's Disease Using Smartphones	Oliver Y. Chén , Florian Lipsmeier , Huy Phan , John Prince , Kirsten I. Taylor, Christian Gossens, Michael Lindemann, and Maarten de Vos	They proposed a Machine-Learning Framework to Remotely Assess Parkinson's Disease Using Smartphones. Using smartphones, remote patient monitoring has the potential to obtain objective behavioural data semi-continuously, track disease fluctuations, and avoid ratter dependency. Methods: Smartphones collect sensor data during various active tests and passive monitoring, including balance (postural instability), dexterity (skill in performing tasks using hands), gait (the pattern of walking), tremor (involuntary muscle contraction and relaxation), and voice. Data analysis results from 437 behavioural features obtained from 72 subjects (37 PD and 35 HC) sampled from 17 separate days during a period of up to six months suggest that this framework is potentially useful for the analysis of remotely collected smartphone sensor data in individuals with PD.
Angular Velocity Analysis Boosted by Machine Learning for Helping in the Differential Diagnosis of Parkinson's Disease and Essential Tremor - IEEE	Julián D. Loaiza Duque,Antonio J. Sánchez Egea,Theresa Reeb,Andrés M. González-Vargas	They proposed Angular Velocity Analysis Boosted by Machine Learning for Helping in the Differential Diagnosis of Parkinson's Disease and Essential Tremor. This work aims to develop Machine Learning models to improve the differential diagnosis between patients with Parkinson's Disease and Essential Tremor. For this purpose, we use a mobile phone's built-in gyroscope to record the angular velocity signals of two different arm positions during the patient's follow-up, more precisely, in rest and posture positions. The models developed reached an average accuracy of 97.2 ± 3.7% (98.5% Sensitivity, 93.3% Specificity) to differentiate between Healthy and Trembling subjects and an average accuracy of 77.8 ± 9.9% (75.7% Sensitivity, 80.0% Specificity) to discriminate between Parkinson's Disease and Essential Tremor patients.

Machine Learning-Based Prediction of Impulse Control Disorders in Parkinson's Disease From Clinical and Genetic Data	Johann Faouzi , Samir Bekadar, Fanny Artaud , Alexis Elbaz , Graziella Mangone, Olivier Colliot, and Jean-Christophe Corvol	They proposed Machine Learning-Based Prediction of Impulse Control Disorders in Parkinson's Disease from Clinical and Genetic Data. Impulse control disorders (ICDs) are frequent non-motor symptoms occurring during the course of Parkinson's disease (PD). The objective of this study was to estimate the predictability of the future occurrence of these disorders using longitudinal data, the first study using cross-validation and replication in an independent cohort. Methods: We used data from two longitudinal PD cohorts (training set: PPMI, Parkinson's Progression Markers Initiative; test set: DIGPD, Drug Interaction with Genes in Parkinson's Disease). Results: The recurrent neural network (PPMI: 0.85 [0.80 – 0.90], DIGPD: 0.802 [0.78 – 0.83]) was the only model to be significantly better than the trivial model (PPMI: ROC AUC = 0.75 [0.69 – 0.81]; DIGPD: 0.78 [0.75 – 0.80]) on both cohorts.
Early Detection of Parkinson's Disease Using Deep Learning and Machine Learning	Wu Wang,Junho Lee, Fouzi Harrou and Ying Sun	They proposed detecting Parkinson's disease (PD) at an early stage is certainly indispensable for slowing down its progress and providing patients the possibility of accessing to disease-modifying therapy. A comparison between the proposed deep learning model and twelve machine learning and ensemble learning methods based on relatively small data including 183 healthy individuals and 401 early PD patients shows the superior detection performance of the designed model, which achieves the highest accuracy, 96.45% on average. Besides detecting the PD, we also provide the feature importance on the PD detection process based on the Boosting method.