Pal, Sankar K., and Dinabandhu Bhandari. "Selection of optimal set of weights in a layered network using genetic algorithms." *Information Sciences—Informatics and Computer Science, Intelligent Systems, Applications: An International Journal* 80.3-4 (1994): 213-234.

**Related Work**

Agarwal et al. proposed an efficient approach to implement Extreme Machine Learning on a reliable dataset of speech samples of Parkinson's patients sourced from the UCI repository. They were able to achieve an accuracy of 90.76% and 0.81 MCC in distinguishing between Parkinson’s positive and Parkinson’s negative patients. Their work is mainly focused on Neural Networks and Support Vector Machines.

***A. Agarwal, S. Chandrayan and S. S. Sahu, "Prediction of Parkinson's disease using speech signal with Extreme Learning Machine,"*2016 International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT)*, Chennai, India, 2016, pp. 3776-3779, doi: 10.1109/ICEEOT.2016.7755419.***

Ouhmida et al. deployed Convolution Neural Networks (CNN) and Artificial Neural Networks (ANN) for the classification of healthy patients from Parkinson’s Disease (PD) positive patients on two datasets from UCI Machine Learning repository databases. The datasets were denoted by database I and database II consisting of 22 and 45 acoustic features respectively. CNN model achieved the highest accuracy of 93.10% on database I.

***A. Ouhmida, O. Terrada, A. Raihani, B. Cherradi and S. Hamida, "Voice-Based Deep Learning Medical Diagnosis System for Parkinson's Disease Prediction,"*2021 International Congress of Advanced Technology and Engineering (ICOTEN)*, Taiz, Yemen, 2021, pp. 1-5, doi: 10.1109/ICOTEN52080.2021.9493456.***

Ogawa and Yang worked on the early detection of Parkinson’s Disease using 10-layered 1-d Convolution Neural Networks (CNN) and novel Residual Network (ResNet) type 1-d CNN, on a dataset consisting of the vocal features of healthy and PD-positive patients. They were able to achieve an accuracy of 0.888, an F-measure of 0.928 and an MCC of 0.692 in classifying.

***M. Ogawa and Y. Yang, "Residual-Network -Based Deep Learning for Parkinson's Disease Classification using Vocal Datasets,"*2021 IEEE 3rd Global Conference on Life Sciences and Technologies (LifeTech)*, Nara, Japan, 2021, pp. 275-277, doi: 10.1109/LifeTech52111.2021.9391925.***

Aghzal and Mourhir combined a Histogram of Oriented Gradients with Convolution Neural Networks (CNN) to automate the detection process of Parkinson’s Disease based on the handwriting patterns of both positive and negative patients. Their model was able to achieve an accuracy of 87% and an F1-Score of 83.21%, outperforming the then-present clinical diagnostic techniques.

***M. Aghzal and A. Mourhir, "Early Diagnosis of Parkinson’s Disease based on Handwritten Patterns using Deep Learning,"*2020 Fourth International Conference On Intelligent Computing in Data Sciences (ICDS)*, Fez, Morocco, 2020, pp. 1-6, doi: 10.1109/ICDS50568.2020.9268738***

Anand et al. deployed state-of-the-art machine learning and deep learning models equipped with varying dimensional reduction (DR) techniques to boost the efficiency, precision, recall and F1-Score of the models on the Parkinson’s Speech Dataset gathered from the UCI Machine Learning Repository. A comparative analysis was performed among the implemented models to come up with a conclusion of the best working model.

***A. Anand, M. A. Haque, J. S. R. Alex and N. Venkatesan, "Evaluation of Machine learning and Deep learning algorithms combined with dimentionality reduction techniques for classification of Parkinson’s Disease,"*2018 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, Louisville, KY, USA, 2018, pp. 342-347, doi: 10.1109/ISSPIT.2018.8642776.***