

# [Early can be further improved by implementing](https://assignbuster.com/early-can-be-further-improved-by-implementing/)

Earlydetection of severity of any disease helps in treating the patient sooner. Thispaper intended to verify the effectiveness of the application of Deep Learningfor predicting the severity of Parkinson’s disease in a patient using his orher voice characteristics. The dataset used was UCI’s Parkinson’sTelemonitoring Dataset, comprising of 16 attributes or biomedical voice measurementswith various range of values from 42 people with early-stage Parkinson’sdisease. It was first pre-processed by applying normalisation.

Then thesegmentation of the normalised dataset was done to create training dataset andtesting dataset. Deep Neural Networks were trained on the training data, andfinally the accuracy of severity prediction was obtained by running the networkon the testing data. We were able to successfully implement deep neural networkin predicting the severity of Parkinson’s disease, achieving an accuracy of81. 6 % and 62.

7 % in the case of motor-UPDRS and total-UPDRS scoresrespectively. In order to analyse the dataset and make an attempt to understandthe trend of these severity scores, an analysis of the normalised dataset wasperformed on the basis of gender and age of patients. The results indicate thataccurate prediction of severity of Parkinson’s disease can be done using deeplearning. This implies that Deep Learning can be used for severity predictionand medical analysis for other diseases of similar types as well. Although wehave used a dataset of 5875 instances, the accuracy of our approach can befurther improved by implementing it on a larger dataset, having more number ofinstances of each severity class.

Moreover, more number of patient attributeslike- gait and handwriting features- can be added to make the model morereliable. Also, more powerful computing resources(i. e. GPUs with betterprocessing capabilities) can be used to improve the time complexity of our approach.