Detecting Parkinson's Disease using Machine Learning

LITERATURE SURVEY

1. Detection of Parkinson's Disease Using Rating Scale

AUTHORS: Anita

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ABSTRACT:

Parkinson disease (PD) is a neurodegenerative disorder. Many common symptoms which may or may not indicate that patient is suffering from Parkinson Disease. In this study a novel rating scale has been introduced which helps to examine the level of Parkinson Disease but is not mandatory that a person having similar symptoms may surely suffering from Parkinson Disease. PD is an unsolved problem till date hence the study focuses on relevant features, drugs and common techniques used to detect or analyze PD. To overcome such problem different techniques will be used to study and analyze the early detection of PD. It can be analyzed with the help of deep understanding of Parkinson Disease. However presence of some common symptoms has not yet been described up to the mark to analyze the level of Parkinson Disease. Hence it is very challenging to detect early stage of Parkinson Disease. In study, work focuses on only confirmed symptoms of Parkinson Disease which doesn't deals to any other disease completely. Study also focus on the Unified Parkinson's Disease Rating scale (UPDRS) for Parkinson Disease

along with respective symptoms. It includes the analysis in terms of medical science and computer applications for analyzing PD. Medication for PD has also been discussed in the study including wide literature survey which provide the clearance of the goal for treating PD. Proposed rating scale in the study is time efficient as compared with UPDRS.

2. THE PARKINSON'S DISEASE DETECTION USING MACHINE LEARNING TECHNIQUES

AUTHORS: C.K.Gomathy, B.Varshini,B.Varsha, Dheeraj kumarreddy

PUBLISHED IN: Research gate

DATE OF PUBLICATIONS: October 2021

ABSTRACT:

The Parkinson’s disease is progressive neuro degenerative disorder that affects a lot only people significantly affecting their quality of life. It mostly affect the motor functions of human. The main motor symptoms are called "parkinsonism" or "parkinsonian syndrome". The symptoms of Parkinson’s disease will occur slowly, the symptoms include shaking, rigidity, slowness of movement and difficulty with walking, Thinking and behavior change, Depression and anxiety are also common. There is a model for detecting Parkinson’s using voice. The deflections in the voice will confirm the symptoms of Parkinson’s disease. This project showed 73.8% efficiency. In our model, a huge amount of data is collected from the normal person and also previously affected person by Parkinson’s disease. these data is trained using machine learning algorithms. From the whole data 60% is used for training and 40% is used for testing. The data of any person can be entered in db to check whether the person is affected by Parkinsons disease or not. There are 24 columns in the data set each column will indicate the symptom values of a patient except the status column. The status column has 0's and I's.those values will decide the person is effected with Parkinsons disease. I's indicate person is effected, 0's indicate normal conditions.

3.MACHINE LEARNING BASED APPROACHES FOR PREDICTION OF PARKINSON'S DISEASE

AUTHORS: Dr. Arvind Kumar Tiwari

PUBLISHED IN: An International Journal (MLAIJ) Vol.3, No.2

DATE OF PUBLICATION: June 2016

ABSTRACT:

The prediction of Parkinson's disease is most important and challenging problem for biomedical engineering researchers and doctors. The symptoms of disease are investigated in middle and late middle age. In this paper, minimum redundancy maximum relevance feature selection algorithms is used to select the most important feature among all the features to predict the Parkinson diseases. Here, it is observed that the random forest with 20 number of features selected by minimum redundancy maximum relevance feature selection algorithms provide the overall accuracy 90.3%, precision 90.2%, Mathews correlation coefficient values of 0.73 and ROC values 0.96 which is better in comparison to all other machine learning based approaches such as bagging, boosting, random forest, rotation forest, random subspace, support vector machine, multilayer perceptron, and decision tree based methods

4. Intelligent Parkinson Disease Prediction Using Machine Learning Algorithms

AUTHORS: Tarigoppula V.S Sriram , M. Venkateswara Rao , G V Satya Narayana , DSVGK Kaladhar

PUBLISHED IN: International Research Journal of Engineering and Innovative Technology (IRJET)

DATE OF PUBLICATIONS: September 2013

ABSTRACT:

Diagnosis of the Parkinson disease through machine learning approache provides better understanding from PD dataset in the present decade. Orange v2.0b and weka v3.4.10 has been used in the present experimentation for the statistical analysis, classification, Evaluation and unsupervised learning methods. Voice dataset for Parkinson disease has been retrieved from UCI Machine learning repository from Center for Machine Learning and Intelligent Systems. The dataset contains name, MDVP:Fo(Hz), MDVP:Fhi(Hz), MDVP:Flo(Hz), MDVP:Jitter(%), MDVP: Jitter(Abs), MDVP:RAP, MDVP:PPQ, Jitter:DDP, MDVP:Shimmer, MDVP:Shimmer(dB), Shimmer:APQ3, Shimmer:APQ5, MDVP:APQ, Shimmer:DDA, NHR, HNR, status, RPDE, DFA, spread1, spread2, D2, PPE attributes. The parallel coordinates shows higher variation in Parkinson disease dataset. SVM has shown good accuracy (88.9%) compared to Majority and k-NN algorithms. Classification algorithm like Random Forest has shown good accuracy (90.26) and Naïve Bayes has shown least accuracy.