DETECTING PARKINSON'S DISEASE USING MACHINE LEARNING

PRESENTED BY

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OBJECTIVE

To detect Parkinson's disease using the drawings of parkinson's patients and to quantify the visual appearance (using HOG method) of these drawings and then train a machine learning model to classify it.

LITERATURE REVIEW

1) **Early Identification of Parkinson's Disease using Histogram of Oriented Gradients and Machine Learning Techniques.**

(Ferdib-Al-Islam and Laboni Akter Khulna University of Engineering & Technology)

- hand drawn images of waves and spiral the disease had been identified by using the computer vision and machine learning techniques. Decision Tree, Gradient Boosting, K-Nearest Neighbor, Random Forest, and some other classification algorithms with the HOG feature descriptor algorithm had been used here.
- HOG descriptors are used to portray the basic shape and presence of an object in an image, making them incredible descriptors for object characterization.
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LITERATURE REVIEW Contd…

2) Reliable Parkinson's Disease Detection by Analyzing Handwritten Drawings: Construction of an Unbiased Cascaded Learning System Based on Feature Selection and Adaptive Boosting Model.

(liaqat ali 1 , ce zhu 1 , (fellow, ieee), noorbakhsh amiri golilarz2 , ashir javeed3 , mingyi zhou1 , and yipeng liu 1 , (senior member, ieee)

- Based on the Hand PD dataset records consists of 4 spirals and 4 meanders were collected . For calculating the differences between them comparision between hand written trace (HT) and exam template (ET) for the drawings had been made.
- The machine learning models including Ada boost, Support Vector Machine , GNB, DT, LDA and K-Nearest Neigh bour were implemented using scikit-learn framework of Python . These models were optimized by using the Grid search algorithm.
- In the conventional Ada boost model provides the accuracy of 78.04%.

LITERATURE REVIEW Contd…

3) Detecting parkinson's disease using ibm watson cloud

(Dr. Arun Kumar GH, Sachin MN, Nivedita K, Nischitha N, Pooja Mudenur)

- In this paper the Random Forest Classification , Decision Tree Classification algorithm had been used.
- Dataset consists of both hand-drawn spiral and wave patterns .Finally , split the data into train and test to predict the results.
- Evaluation process had been take place to check whether model is best suitable for the given dataset and problem.
- Based on the evaluation technique threetypes of evaluation models such as Accuracy score , Confusion matrix , Roc- Auc Curve had been found.
- Flask language had been used to build a web interface and pickle library had been used to integrate both model and web page.

LITERATURE REVIEW Contd…

4)Diagnosis of Parkinson's Disease Using Spiral Test Based on Pattern Recognition (mustafa gerger,abdulkadir gumuscu harran university)

- The Parkinson's patient drawings are used as a dataset.
- 123.066 features were obtained for each drawing.
- Each can be classified by using k-nearest neighbor and decision trees algorithm.
- The results are validated b validation method..
- Accuracy value obtained 1.00 in the decision tree classification by selecting the feature with the genetic algorithm.

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