

DETECTING PARKINSON'S DISEASE USING MACHINE LEARNING

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Project Name: DETECTING PARKINSON'S DISEASE USING MACHINE LEARNING

OBJECTIVE:

More than 10 million people are living with Parkinson's Disease worldwide, according to the Parkinson's Foundation. While Parkinson's cannot be cured, early detection along with proper medication can significantly improve symptoms and quality of life.

One of the indications of Parkinson's is tremors and rigidity in the muscles, making it difficult to draw smooth spirals and waves. It is possible to detect Parkinson's disease using the drawings alone instead of measuring the speed and pressure of the pen on paper. Our goal is to quantify the visual appearance(using HOG method) of these drawings and then train a machine learning model to classify them. In this project, We are using, Histogram of Oriented Gradients (HOG) image descriptor along with a Random Forest classifier to automatically detect Parkinson's disease in hand-drawn images of spirals and waves.

The objectives are to

- To understand the problem to classify if it is a regression or a classification kind of problem.
- To know how to pre-process the image by using different data pre-processing techniques.
- To learn how to use OpenCV and machine learning to automatically detect Parkinson's disease in hand-drawn images of spirals and waves
- To know how to find the accuracy of the model.
- To build web applications using the Flask framework.