**Paper 1:** DETECTING PARKINSON’S DISEASE USING IBM WATSON

CLOUD

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**Summary:**

According to the Parkinson’s Foundation in worldwide more than 10 million people are suffering from Parkinson’s Disease. While Parkinson’s cannot be cured, early detection along with proper medication can significantly improve symptoms and quality of life. The researchers found that the drawing speed was slower and the pen pressure is lower among Parkinson’s patients. One of the main indications of Parkinson’s is tremors and rigidity in the muscles, it will make difficult to draw smooth spirals and waves. According to the researchers, 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 main goal is to quantify the visual appearance using HOG method of these drawings written by the persons and then train a machine learning model to classify these drawings. In this model, we are using, Histogram of Oriented Gradients (HOG) image descriptor along with a Random Forest classifier to automatically detect the Parkinson’s disease using hand-drawn images of spirals and waves form drawings.

**Conclusion:**

Previous work papers have focused only on a particular imaging modality such as MRI or PET, or on one specific type of dementia only such as AD. The proposed method aimed to cover a broader space of imaging and machine learning technologies for mental illness diagnostics such that researchers in the field could readily identify the state of the art in the domain. Moreover, in this we emphasize the importance of early detection and prediction of Parkinson’s disease, such that treatment and support can be provided to patients as soon as possible and the effects of the disease can be decreased.