Project Design Phase-I: Proposed Solution

Date	10th October 2022
Project Name	Detecting Parkinson's Disease using Machine Learning
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Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement	Parkinson's disease is caused by the disruption of brain cells. It produces a substance to allow brain cells called dopamine to communicate with each other. It is a progressive disorder of the central nervous system affecting movement and inducing tremors and stiffness. The symptoms usually emerge gradually. As the disease worsens, non-motor symptoms become more common. Symptoms include tremor, rigidity, slowness of movement, and difficulty with walking.
2.	Idea / Solution description	The project aims at presenting a solution for Parkinson's disease detection using the Python libraries like **scikit-learn, numpy, pandas, and xgboost**. It is a yes or no solution. We'll load the data, get the features and labels, scale the features, then split the dataset, build an XGBClassifier, and then calculate the accuracy of our model. The main idea behind the implementation is to classify a person as Healthy or having Parkinson's disease by building a model using XGBoost.
3.	Novelty / Uniqueness	The XGBoost algorithm used for detecting Parkinson's disease, optimizes the available disk space and maximises its usage. It implements a sparsity-aware split finding algorithm to handle different types of sparsity patterns in the data.

4.	Social Impact / Customer Satisfaction	Early diagnosis and treatment of Parkinsons are paramount to reducing the risk of disease progression and lower the treatment cost by early detection
5.	Business Model (Revenue Model)	Key partners: ● Educational Institutions ● NGOs ● Platforms Key activities: ● Development of solutions ● Data acquisition ● Platform operation ● Clinical Trials Key Resources: ● Data ● People Value Propositions: ● Uniqueness ● Performance ● Cost reduction Customer Segments: ● Clinics, Hospitals ● Software/platform developers
6.	Scalability of the Solution	XGBooster with different calculations the exactness, accuracy, review, and so forth is extremely excellent. XGBooster is not only able to keep up with all those other algorithms but exceeds them in performance. XGBoost can solve real-world scale problems using a minimal amount of resources.