Project Design Phase - I
Proposed Solution Document

Date	12-10-2022
Team members	DEEPAK N ARJUN R GOKUL M S RANJITH B
Project Name	DETECTING PARKINSONS DISEASE USING MACHINE LEARNING

Proposed Solution:

S.No.	Parameter	Description
1	Problem Statement (Problem to be solved)	Parkinson's disease is a brain disorder that causes unintended or uncontrollable movements, such as shaking, stiffness, and difficulty with balance and coordination. Symptoms usually begin gradually and worsen over time. As the disease progresses, people may have difficulty walking and talking. They may also have mental and behavioral changes, sleep problems, depression, memory difficulties, and fatigue. While virtually anyone could be at risk for developing Parkinson's, some research studies suggest this disease affects more men than women. It's unclear why, but studies are underway to understand factors that may increase a person's risk. One clear risk is age: Although most people with Parkinson's first develop the disease after age 60, about 5% to 10% experience onset before the age of 50. Early-onset forms of Parkinson's are often, but not always, inherited, and some forms have been linked to specific gene mutations.

		The main purpose of this project is to develop an machine learning powered web application model with the strong building of user interface features that helps to identify and predicts the disease by the analysing the symptoms.
2	Idea / Solution description	It processes the breathing signals using a neural network that infer whether the person has Parkinson's disease or not, and if they are identified with the symptoms then it assesses the severity of their disease in accordance with the Movement Disorder Society Unified Parkinson's Disease using ML algorithms. User can place their values and interact with the friendly user assistance bot which guides the person in using the application. Great classification of the right variation of true and fake samples of data that is entered by users in the application.
3	Novelty / Uniqueness	Parkinson’s Disease is detected only after secondary stage (Dopamine deficiency) which leads to medical challenges. Also, doctors must manually examine and suggest medical diagnosis in which the symptoms might vary from person to person so suggesting medicine is also a difficult challenge. So hence the disease examination varies at different instances of the medical operations. Here by using machine learning methods, the problem can be addressed with very less error rate. The voice dataset of Parkinson's disease from the UCI Machine learning library is used as input. Also, our proposed system provides accurate results by integrating spiral drawing inputs of normal and Parkinson’s affected patients.

		We propose a hybrid and accurate results analyzing patient both voice and spiral drawing data. This application offers medical advice and solutions as the next step after user is confirmed based on the presence of Parkinson's disease. This can be used direct by medical team for analyzing and offering the solutions at much positive scaling time.
4	Social Impact / Customer Satisfaction	● Increasing interaction with the human and application. ● Personalized the UI experience. ● Improves accurate result as expected. ● An automated chatbot will control the user interaction environment. ● Accurate prediction at good time complexity. ●
5	Business Model (Revenue Model)	● Solutions prospects of improvement. ● Suits for better saving of involvements. ● Economical Development. ● Easy User interface. ●
6	Scalability of the Solution	● Good conversation with different Ethnic people. ● Saves enough time for performing internal operations for Doctors. ● It does not require the users to spend their money in offering their basic data into the model. ● On spot results for the users.