

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	10 October 2022
Team ID	PNT2022TMID20847
Project Name	Detecting Parkinson's Disease using Machine Learning
Maximum Marks	4 Marks

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Accessibility	The accessibility is given to the doctors for the purpose of identification of the disease.
FR-2	HOG	Sub task: <ul style="list-style-type: none"><li>• Image preprocessing</li><li>• Feature descriptor</li></ul> Hog is highly accurate.
FR-3	Random Forest Algorithm	This ML algorithm is used to diagnose the PD severity from the handwriting of an individual
FR-4	EHR Encryption	If malware gets into a server, encrypting sensitive data items will reduce the amount of valuable information it can steal.
FR-5	Spiral and wave image inputs	These inputs help in distinguishing a healthy individual from a Parkinson's affected individual.

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	This model is useful in detecting the disease at an early stage and helps in taking preventive measures.
NFR-2	<b>Security</b>	Data encryption protects information on servers. Patients are better protected from identity theft.
NFR-3	<b>Reliability</b>	Random Forest Algorithm is used in this model because the accuracy obtained is greater than any other ML algorithm.
NFR-4	<b>Performance</b>	Due to early detection of the disease, the symptoms can be controlled and the cost of illness is greatly reduced.
NFR-5	<b>Availability</b>	Currently, there is no cure for Parkinson's disease. Using this model early detection is possible
NFR-6	<b>Scalability</b>	Both random forest and hog are highly scalable in nature