Project Design Phase-I Proposed Solution Template

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| Date | 19 September 2022 |
| Team ID | PNT2022TMID02435 |
| Project Name | Project – Detection of Parkinson’s disease |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
| 1. | Problem Statement (Problem to be solved) | 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. |
| 2. | Idea / Solution description | 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. |
| 3. | Novelty / Uniqueness | HOG descriptors are powerful to detect images with occlusions, pose and illumination changes because they are extracted in a regular grid. For the regions of the image it generates histograms using the magnitude and orientations of the gradient. HOG can be used to detect small-scaled images with less computational power, which means you can run HOG without having a powerful GPU. Hence, the accuracy  is highly reliable. |
| 4. | Social Impact / Customer Satisfaction | Parkinson’s disease is the 14th leading cause of death in the United States, according to the Center for Disease Control, and more people currently live with it than those with multiple sclerosis, muscular dystrophy, and ALS combined. Though we cant cure  it,identifying it in soon can improve the lifespan. |
| 5. | Business Model (Revenue Model) | Early detection along with proper medication can significantly improve symptoms and quality of life. Our model can be used by hospitals to detect in early  stages, which can be profit for them. |
| 6. | Scalability of the Solution | scalability in our project is achieved by combining Statistics, ML, and Data Mining into flexible, scalable, and often nonparametric techniques. the projection is done at image-level and therefore the computational cost is linear in the number of views,  in our model every view is approximated at feature |