Project Design Phase-I Proposed Solution Template

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| Date | 30th September 2022 |
| Team ID | PNT2022TMID20647 |
| Project Name | Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy |

**Proposed Solution Template:**

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| S No | Parameter | Description |
| 1 | Problem Statement (Problem to be solved) | Diabetic Retinopathy (DR) is a commonplace complication of diabetes mellitus, which causes lesions at the retina that have an effect on imaginative and prescient. If it is not detected early, it may lead to blindness. lamentably, DR is not a reversible procedure, and remedy only sustains vision. Early detection and treatment of DR can considerably lessen the hazard of vision loss. |
| 2 | Idea / Solution description | To automate the existing guide diagnosis of DR with the aid of the usage of transfer mastering-based totally photo processing strategies to simplify, accelerate the analysis and to improve the accuracy of the photographs obtained |
| 3 | Novelty / Uniqueness | To expand a new CNN structure based on famend switch gaining knowledge of models consisting of Inception v3, Resnet50 and Xception v3 and so on. and boost up the gaining knowledge of method. We additionally purpose to growth the accuracy of the obtained images for better diagnosis. |
| 4 | Social Impact / Customer Satisfaction | This model may be discharged inside the shape of an utility which embeds the CNN into a lucid UI. therefore, the sufferers wouldn’t need to go through strenuous physical examination anymore. The application can similarly be prolonged in an effort to summarize the reports and end of the prognosis which would help the affected person to renowned and recognize the difficulty that he/she is affected by (if any). |

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| 5 | Business Model (Revenue Model) | This could be very well labeled below a B2C (enterprise to customer) model. The diagnostic abilities of a clinic might growth exponentially and the app can be used effectively with the aid of physicians for the examination of diabetic in addition to non-diabetic patients as and whilst they arrive for routine eye take a look at-us for screening etc. |
| 6 | Scalability of the Solution | The proposed concept will result in the method of an adaptive CNN version as a way to automatically locate even the one-of-a-kind kinds of DR (proliferative and non-proliferative). it's going to additionally be programmed to diagnose other eye associated repercussions of diabetes inclusive of glaucoma, macular edema and cataracts and so forth. it'll moreover be programmed to diagnose other eye associated repercussions of diabetes including glaucoma, macular edema and cataracts and so on. |