

Project Design Phase-I
Proposed Solution Template

Date	03 November 2023
Team ID	Team - 592796
Project Name	Alzheimer Disease Prediction
Maximum Marks	2 Marks

Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem to be solved is the early detection of Alzheimer's disease. Currently, the disease is often diagnosed at a later stage when symptoms have already become severe, leading to limited treatment options and reduced quality of life for patients. There is a need for a reliable and accurate method to identify early signs of Alzheimer's disease before noticeable symptoms occur.
2.	Idea / Solution description	The idea is to use a custom Sequential CNN architecture for the classification task. The

		<p>architecture includes convolutional and dense blocks with specific configurations, and it is compiled with the Adam optimizer, categorical cross-entropy loss, and metrics for accuracy and AUC. The model's performance will be evaluated through a comparative study to determine the most accurate results. Upon choosing the best model, a website will be created to display the appropriate treatment plan based on the prediction made.</p>
3.	Novelty / Uniqueness	<p>The proposed solution, utilizing a custom Sequential CNN architecture for Alzheimer's detection, represents a novel approach to healthcare. By leveraging this technology, the project aims to enhance precision and efficiency in Alzheimer's detection, thereby reducing the burden on medical staff. This approach promotes early intervention, safeguards patients' health, and contributes to early diagnosis and treatment, ultimately leading to improved patient care.</p>
4.	Social Impact / Customer Satisfaction	<p>The social impact of this solution is significant. Early detection of Alzheimer's disease can lead to timely interventions, allowing healthcare providers to provide appropriate treatment and support to patients and their families. This can</p>

		<p>potentially slow down the progression of the disease, improve patient outcomes, and enhance the quality of life for individuals affected by Alzheimer's. Additionally, early detection can also reduce the burden on caregivers and healthcare systems.</p> <p>Customer satisfaction is also a key aspect of this solution. By providing early detection and intervention, patients and their families can have peace of mind knowing that they are receiving timely care. Healthcare providers can also benefit from improved diagnostic accuracy, leading to better treatment planning and management of Alzheimer's disease.</p>
5.	Business Model (Revenue Model)	<p>The revenue model for this solution can be based on a combination of approaches. One possible revenue stream is through partnerships with healthcare institutions and clinics, where the deep learning model can be integrated into their existing systems for automated screening and early detection of Alzheimer's disease. This can be offered as a subscription-based service or through licensing agreements.</p> <p>Another revenue stream can be through</p>

		collaborations with pharmaceutical companies and research institutions. The deep learning model can be used to identify potential candidates for clinical trials or to assess the efficacy of new treatments for Alzheimer's disease.
6.	Scalability of the Solution	The proposed solution has good scalability potential. The deep learning model can be trained on large datasets from various sources, allowing for the inclusion of diverse populations and improving the generalizability of the model. As more data becomes available, the model can be continuously updated and refined to improve its performance and accuracy. Additionally, the integration of the model into existing healthcare systems can be easily scaled up to reach a larger number of patients and healthcare providers.