Project Design Phase-I

Date	19 November 2023
Team ID	592033
Project Name	ASL- Alphabet Image Recognition
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Speech impaired people use hand signs and gestures to communicate. Normal people face difficulty in understanding their language. Hence there is a need for a system which recognizes the different signs, gestures and conveys the information to the normal people. It bridges the gap between physically challenged people and normal people.
2.	Idea / Solution description	The proposed system is a sign language recognition system using convolution neural networks which recognizes various hand gestures by capturing video and converting it into frames. Then the hand pixels are segmented and the image it obtained and sent

		for comparison to the trained model. Thus our system is more robust in getting exact text labels of letters.
3.	Novelty / Uniqueness	Use of Convolutional Neural Networks (CNNs) accurately deciphers and translates American Sign Language (ASL) alphabet gestures from images. Leveraging the power of deep learning, the project introduces an innovative approach to recognize and interpret the intricate hand movements inherent in ASL. This application of CNN technology not only addresses the specific needs of the ASL community but also contributes to the broader landscape of image recognition, showcasing the potential of AI to enhance accessibility and inclusivity for individuals with diverse communication abilities.
4.	Social Impact / Customer Satisfaction	Through the implementation of this advanced technology, individuals with hearing impairments gain a more inclusive means of communication, transcending language barriers and promoting accessibility. The project envisions empowering users by providing an accurate and efficient tool for translating ASL alphabet gestures from images, facilitating smoother interactions in various environments.By leveraging CNN's capabilities, the project not only advances technological innovation but also contributes to a more inclusive and compassionate society, bridging

		communication gaps and promoting a positive social impact.
5.	Business Model (Revenue Model)	The primary source is expected to be through licensing agreements with educational institutions, language learning platforms, and assistive technology providers, allowing them to integrate the ASL image recognition technology into their applications. Additionally, a freemium model could be implemented, offering a basic version of the ASL recognition app for free while charging for premium features, such as advanced learning modules and personalized feedback mechanisms.Collaborations with healthcare providers and accessibility-focused organizations could also lead to partnerships for customized solutions catering to specific user needs.
6.	Scalability of the Solution	The modular design of the solution allows for seamless integration of new gestures or improvements without compromising the overall system performance. As the project evolves, the scalable nature of the CNN-based solution ensures that the ASL-Alphabet Image Recognition system can effectively handle diverse datasets and continue to provide accurate and efficient recognition across different environments and user scenarios. This scalability enhances the longevity and versatility of the solution, contributing to its sustainability and relevance over time.