

Project Design Phase-I
Proposed Solution Template

Date	23 October 2023
Team ID	592675
Project Name	ASL - Alphabet Image Recognition
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem is the communication gap between the deaf and hearing communities. Deaf individuals primarily use American Sign Language (ASL) for communication. The problem is to create a technology solution that can accurately recognize ASL hand signs, making it easier for the deaf community to communicate with the hearing community.
2.	Idea / Solution description	The proposed solution is to develop an ASL Alphabet Image Recognition system. This system will involve training a machine learning model (e.g., a Convolutional Neural Network) to classify images of ASL hand signs corresponding to the 26 English letters and three additional

		<p>classes for "space," "delete," and "nothing."</p> <p>The trained model will be integrated into real-time applications that can interpret ASL hand signs from video streams, providing instantaneous text or speech translations.</p>
3.	Novelty / Uniqueness	<p>The uniqueness of this solution lies in its application of computer vision and machine learning to recognize ASL hand signs, thereby facilitating real-time communication. It addresses a specific and vital need for the deaf community by providing a technology-driven bridge to the hearing world. This technology leverages the distinct visual language of ASL, making it a novel and highly impactful innovation.</p>
4.	Social Impact / Customer Satisfaction	<p>The social impact is significant, as it fosters inclusivity and accessibility for deaf individuals, enabling them to communicate with the hearing community more effectively. The system's success is measured by increased customer satisfaction among both deaf and hearing users, as it makes communication smoother and more convenient for all parties.</p>
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"> As a project developed by college students with no immediate revenue goals, the primary focus can be on social impact and education. The goal is

		<p>to make the ASL Alphabet Image Recognition system freely available to the deaf and hearing communities to improve communication and accessibility.</p> <ul style="list-style-type: none"> ● Consider open-source and non-profit models to provide the technology to those who need it without cost. ● Collaborate with organizations and institutions that work with the deaf community to distribute the technology for educational and communication purposes.
6.	Scalability of the Solution	<p>The solution is highly scalable. As the model's performance improves and user bases grow, it can be deployed on various platforms such as mobile apps, websites, and integrated into existing communication tools. Additionally, the system can be expanded to recognize additional sign languages beyond ASL, making it more versatile and widely applicable.</p>