Project Initialization and Planning Phase

Date	15 March 2024
Team ID	739868
Project Title	Real Time Communication System Powered By AI For Specially Abled
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

The proposal report aims to develop a real-time AI-powered communication system to assist individuals with speech and hearing impairments, enhancing accessibility and inclusivity.

Project Overview	
Objective	The primary objective is to empower specially-abled individuals by providing a real-time communication system that leverages AI for seamless interaction.
Scope	The project focuses on translating non-verbal cues (e.g., sign language) into text or speech and vice versa, enabling effective communication for daily interactions, education, and caregiving.
Problem Statement	
Description	Individuals with speech and hearing impairments struggle to communicate effectively due to limited availability of efficient assistive tools.
Impact	Addressing this issue will enhance their ability to interact in real time, reduce social isolation, and foster inclusivity in various domains like education, healthcare, and public services.
Proposed Solution	
Approach	Implementing AI-based natural language processing (NLP) and computer vision algorithms to develop a system that translates non-verbal communication into text or speech in real time.

Key Features	• Real-time translation of sign language into text or speech. • Voice-to-text functionality to assist individuals with hearing impairments. • Continuous improvement through feedback and AI model updates.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPUs
Memory	RAM specifications	16 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	tensorflow, OpenCV, NLTK, pandas, numpy
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Source, size, format	Images and videos in labeled formats; size: 20,000 samples