Project Design Phase-II Technology Stack
(Architecture & Stack)

Date	12 November 2022
Team ID	PNT2022TMID22143
Project Name	Project: Real-Time Communication System Powered by AI for Specially-Abled
Maximum Marks	4 Marks

Technical Architecture:

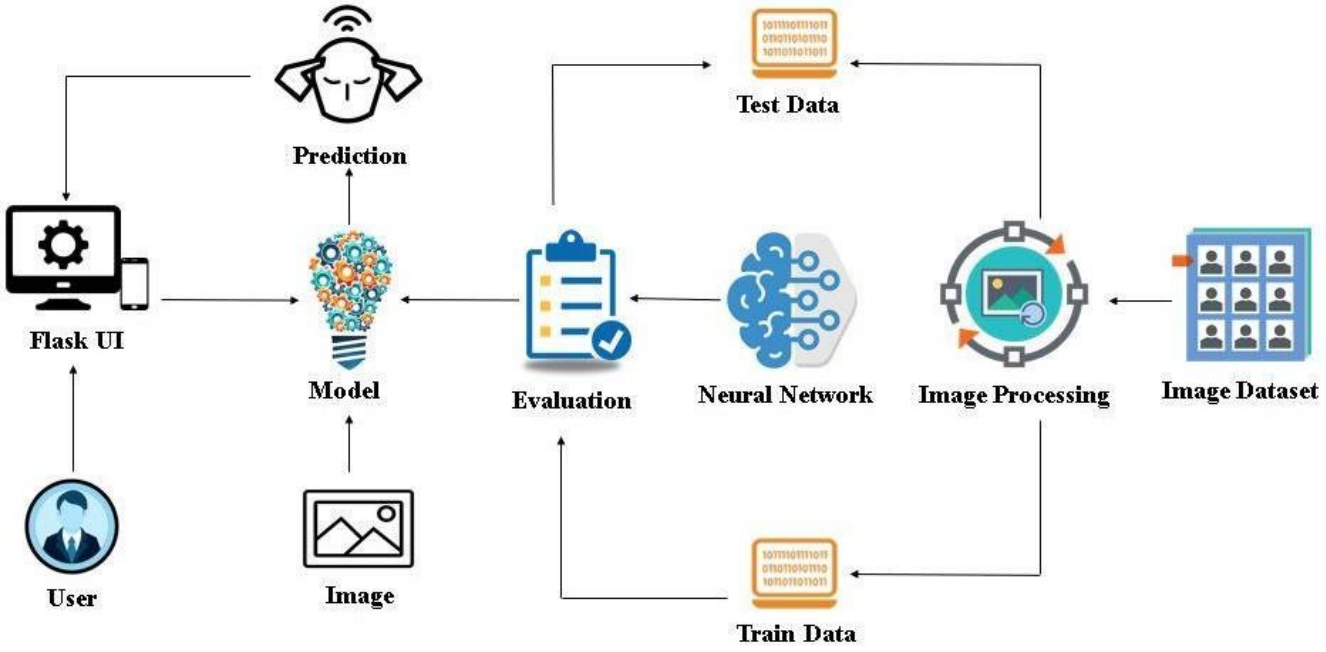

Table-1 : Components & Technologies:

Si. No.	Components	Description	Technology
1.	User Interface	The user interface is where people engage with computers and communicate with them on a device.	Python flask, HTML, CSS/JavaScript.
2.	Flash UI	The user interface elements in Flash enable interaction with visitors to your site and data collection.	IBM cloud.
3.	Models	The classification of our dataset of gesture images is then performed using Support Vector Machine (SVM).	Machine Learning.
4.	Image	Using a neural network, image processing is utilised to extract indications from the picture..	ANN, CNN, Open CV.
5.	Evaluate data	aims to calculate the generalisation accuracy of a model using future (unknown/out-of-sample) data.	NLP.
6.	Unstructured data	Unstructured data is a collection of a wide range of distinct data kinds that are kept in their original formats.	Natural Language Processing (NLP).
7.	Structured data	Quantitative data is typically well-organized and simple for machine learning algorithms to understand.	Machine language and artificial intelligence tools.
8.	File Storage	File storage needs to be met in order to keep the trained model for use as needed.	IBM Block Storage or Cloud object.
9.	ML service	Allows you to design, train, and deploy machine learning models by offering a broad variety of tools and services.	Python, IBM Watson.
10.	IBM Cloud	On IBM Cloud Pak for Data, IBM Watson Studio enables data scientists, developers, and analysts to create, run, and manage AI models and optimise choices from anywhere.	IBM Cloud and Watson Studio service
11.	Dataset	A dataset of 24 static signs from the Panamanian Manual Alphabet was used in the system's initial prototype.	AI technology.

Table-2: Application Characteristics:

Si. No.	Characteristics	Description	Technology
1.	Open-Source Frameworks	Aids in the use of best practices for model retraining, model tracking, and data automation.	TensorFlow.
2.	Security Implementations	It runs the largest national network of specialised monitoring centres and provides clients with a six-month money-back guarantee.	ADT type of coding.

3.	Scalable Architecture	The data tier, the presentation tier, and the application tier are the three logical and physical processing tiers that make up the well-known three-tier architecture for software programmes.	3 – Tier Architecture.
4.	Availability	The system will be made universal so that everyone can use it.	Website
5.	Performance	The model will be tweaked to find the right mix between performance and accuracy..	Optimization of code and trained model.