

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

Date	03 October 2022
Team ID	PNT2022TMID49634
Project Name	Real Time communication powered by AI for specially abled people
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

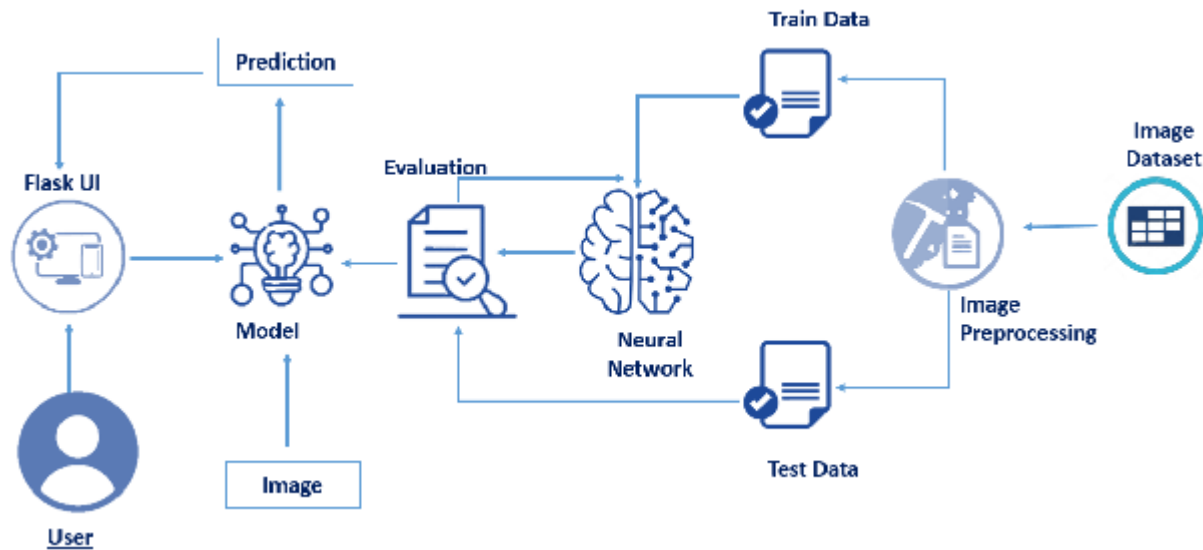


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Specially abled people can communicate efficiently by using their sign language which will convert to text .	CNN and other AI technologies.
2.	Flask UI	Used for developing web applications	Python
3.	Image Dataset	This application is trained on a subset of dataset containing signs adhering to ASL	AI
4.	Image Pre-Processing	It is performed in the dataset in-order to get an enhanced Image	Open CV
5.	Training	After Running on the training dataset to extract the attributes from the images which are then fed to Neural network in order to make the prediction	IBM Watson studio services, Natural Language Preprocessing
6.	Testing	Trained model is then run on an additional untested sign language images and the performance parameter are evaluated and recorded	NLP
7.	Neural network	Neural Network is used to recognize and same is used for both front and back end views	ANN
8.	Evaluation	Records the generalized accuracy of proposed model on future.	
9.	Model	By importing the required libraries and build the application	CNN , ML

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	This allows user to interact efficiently and guide the user	React , Bootstrap

2.	Security Implementations	Data is encrypted and continuous testing will be performed and keep data from leaking.	Encryptions, High level Authentication.
3.	Scalable Architecture	It supports higher workloads without any fundamental changes to it and scales your servers appropriately	Building Scalable database and use asynchronous communication.
4.	Availability	The app meet all the requirements of an individuality and it is available 24/7 and there will be availability monitoring.	AI
5.	Performance	It takes minimal time to load text /sign and optimize networking will be there and it is responsive web -app.	CDN