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

Date	30 October 2022
Team ID	PNT2022TMID07985
Project Name	GESTURE BASED TOOL FOR STERILE BROWSING OF RADIOLOGY IMAGES
Maximum Marks	4 Marks

Technical Architecture Steps:

1. The sterile gesture interface consists of a Canon VC-C4 camera, whose pan/tilt/zoom can be initially set using an infrared (IR) remote. This camera is placed just over a large flat screen monitor (▶).
2. Additionally, an Intel Pentium IV, (600MHz, OS: Windows XP) with a Matrox Standard II video-capturing device is used.
3. A two layer architecture is used: In the lower level “Gestix” provides tracking and recognition functions, while at the higher level a graphical user interface called “Gibson” manages imaging visualization.
4. After a short calibration process, where a probability color model of the doctor's hand is built, images of the surgeon's hand gesturing are acquired by video-camera and each image is back-projected using a color model.

Technical Architecture :

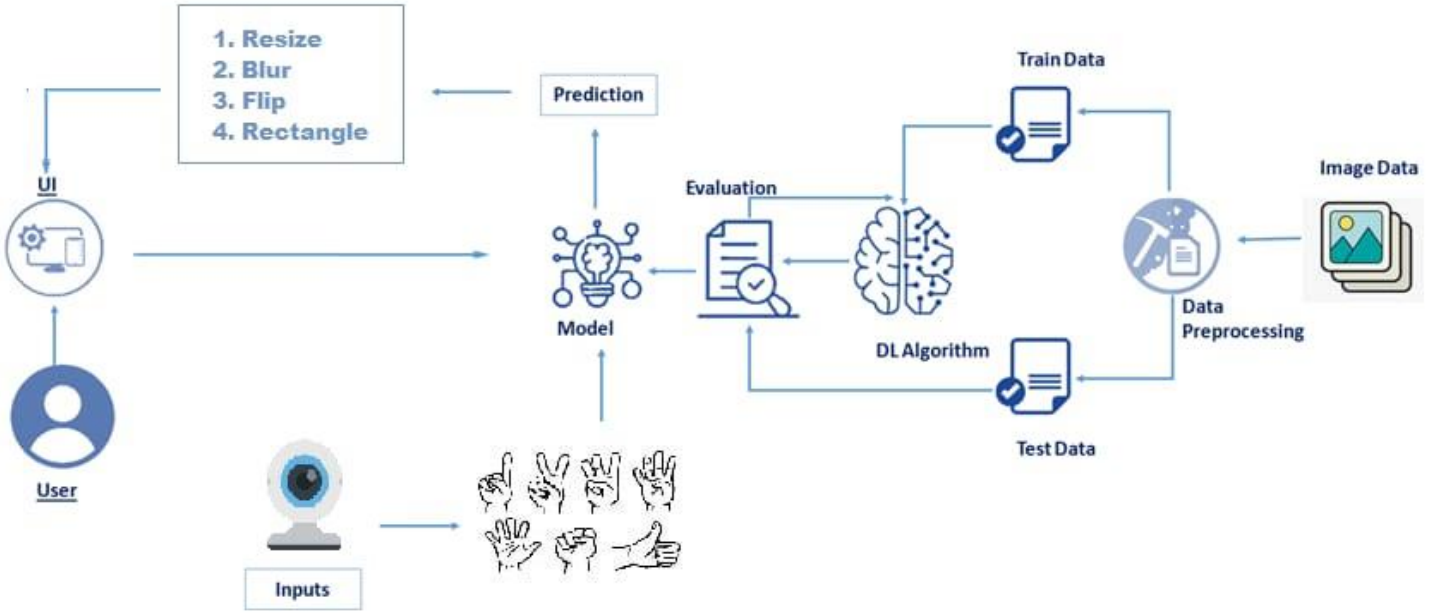

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Bot Preview	A simple page is presented to the user with a chat layout that has an input box field available to get user queries and preset options are presented for the user to select.	HTML, CSS, JavaScript
2.	Application Logic-1	An input bar is provided that enables the user to type queries.	Java / Python
3.	Application Logic-2	Regularly asked queries or options are presented to the user.	IBM Watson STT service
4.	Application Logic-3	Processes responses to custom queries and displays a relevant response.	IBM Watson Assistant
5.	External API-1	It provides an interface between the application and the cloud to send the query from the application to the cloud.	Watson Assistant v2 API
6.	External API-2	A cloud based API that supports several cloud based applications and operations.	IBM Cloud API
7.	Deep Learning Model	It is trained with several queries and uses that knowledge to provide relevant responses to queries with a good enough accuracy.	Deep Learning

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python Flask, CSS Frameworks
2.	Security Implementations	General access control and the built-in security features of IBM Cloud are present.	IBM Watson Assistant, IBM Cloudant DB
3.	Scalable Architecture	The architecture consists of three tiers, the client side, the web server and the cloud server. Each of these can be scaled as per requirements.	Client Side: Flask (Python) Web Server: IBM Watson Assistant Cloud Server: IBM Cloud
4.	Availability	The chatbot is available 24/7 on almost all devices that support an internet browser.	IBM Cloud, Flask (Python)
5.	Performance	Responds to several thousands of queries at the same time.	IBM Load Balancer, IBM Cloud