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

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|---|---|
| Date | 14 October 2022 |
| Team ID | PNT2022TMID42641 |
| Project Name | A Gesture-Based Tool for Sterile Browsing of Radiology Images |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

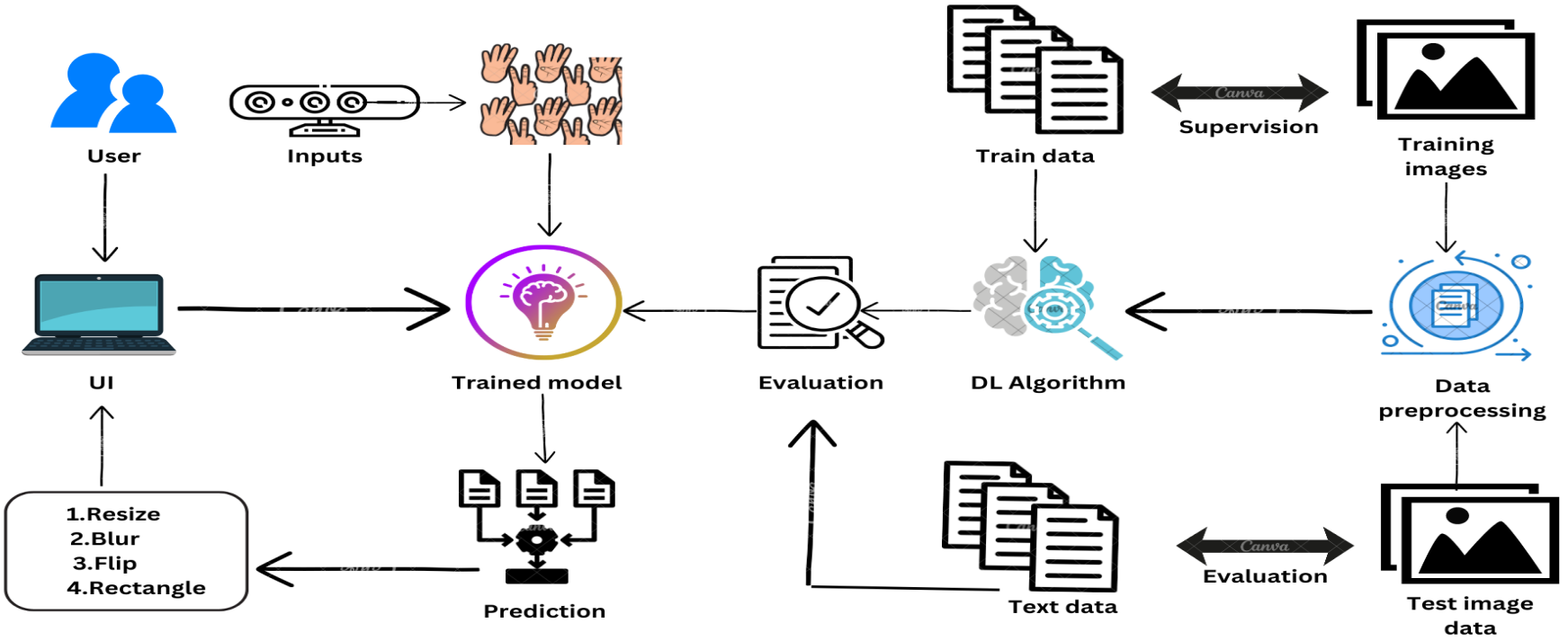

**Table-1 : Components & Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | Web UI | HTML, CSS, JavaScript. |
| 2. | Application Logic-1<br>Data pre-processing | Input image is pre-processed by importing the library files | Python,TensorFlow |
| 3. | Application Logic-2<br>Model building | Building CNN Model | Python |
| 4. | Application Logic-3<br>Application building | Creation of web application by obtaining gesture as input and provide accurate output | HTML,CSS,Javascript |
| 5. | Cloud Database | Hand images are to be stored on a cloud database for training the model | IBM Cloud |
| 6. | Dataset | Collect or create the hand gesture dataset and Radiology images | From online |
| 7. | File Storage | File storage contains dataset and source code | Servers and local system storage |
| 8. | Deep Learning | Used to analyse visual imagery, image processing, video capture and analysis including features like face detection and object detection. | CNN, OpenCV |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Application development, data pre-processing. | Visual studio code, Anaconda navigator, TensorFlow |
| 2. | Security Implementations | It identify the gestures only when the hand is in front of the camera and the data is protected as per the policy. | OpenCV |
| 3. | Scalable Architecture | It can be used in any environment and is able to identify the gesture actions in both bright and dim backgrounds. It can recognize the gesture action upto 5 meters distance between the camera and person. | OpenCV |
| 4. | Availability | Deploy on highly available server | IBM Cloud |
| 5. | Performance | Rapid response to the gesture actions. | CNN Model |