**PROJECT DESIGN PHASE-I**

**PROPOSED SOLUTION**

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| Date | 24 September 2022 |
| Team ID | PNT2022TMID39878 |
| Project Name | A Gesture-based Tool for Sterile Browsing of Radiology Images |

**PROPOSED SOLUTION:**

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| **S.No** | **Parameter** | **Description** |
| 1. | Problem Statement (Problem to be solved) | The total world is working with the various problems of the deep learning. The goal of the deep learning is to factorize and to manipulate the real-life data and the real-life part of the human interaction or complex ideas or the problems in the real life. The use of doctor-computer interaction devices in the operation room (OR) requires new modalities that support medical imaging manipulation while allowing doctors' hands to remain sterile, supporting their focus of attention, and providing fast response times. So, the goal was to create an appropriate application that would capture the gestures of the users and perform the specific actions based on the trained dataset. The main thing is when human gestures are being performed, it is important to ensure that the gesture is being captured properly for further classification and recognition. A machine can do that efficiently but not the human. For this project one has to create a model by image processing and the deep learning. Both the techniques will be needed because these two techniques will enhance the technique of the deep learning and that can shape this project. |
| 2. | Idea / Solution description | A vision-based hand gesture capture and recognition system that interprets in real-time the user's gestures for navigation and manipulation of images. It basically detects the hand gestures of the users, recognizes and classifies them based on the dataset trained. Later the corresponding actions are performed. |
| 3. | Novelty / Uniqueness | The novelty of this project lies in the thorough investigation of all the parameters of CNN architecture to deliver the best recognition accuracy. In case of simple neural network, the accuracy will be less, while on the CNN the accuracy will be more. 4 |
| 4. | Social Impact / Customer Satisfaction | The ability of the hand gesture recognition for sterile browsing of images is that it reduces the work of the humans, and overcomes one of the practically important issues of the doctors or technicians making contact with computers or devices. The applications of gesture recognition helps to reduce the time consuming contact process and adapt to a faster and more sterile method of browsing images. |
| 5. | Business Model (Revenue Model) | In recent times, with the increase of Artificial Neural Network (ANN), deep learning has brought a dramatic twist in the field of machine learning by making it more artificially intelligent. Deep learning is remarkably used in vast ranges of fields. In deep learning, Convolutional Neural Network (CNN) is at the centre of spectacular advances that mixes Artificial Neural Network (ANN) and up to date deep learning strategies. It has been used broadly in pattern recognition |
| 6. | Scalability of the Solution | It is the ability of a computer to recognize the human gestures and classify them into different categories. This has been a topic of boundless research in the field of deep learning. In hand gesture recognition, we face many challenges because each hand has different features and different points and it’s difficult to train the device for all the datasets of each hand. This deep learning algorithm is for the accurate hand gesture recognition and sterile browsing of images. |