**BE Project Synopsis& Approval AY-2020-21**

1. **Group No:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_13\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **Title of the project:\_\_\_COVID-19 detection using chest x-ray images \_\_**
3. **Domain: Deep Learning, Android Application, Web Application, Cloud**
4. **Literature Survey(Brief about papers referred(min.5) and explain key points and challenges /weakness observed by you in given papers):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SR. NO** | **Title Of Paper** | **Journal/Conference Name And Year** | **Author** | **Key points** | **Challenges/Remarks** |
| **1** | **Augmented COVID-19 x-ray images dataset analysis using convolutional neural network and transfer learning.** | **IJETER July 2020** | **AKM bahalul haque, mahbubur Rahman.** | **Covid-19, deep learning.** | **The dataset contain 69 images of lung X-ray of and 79 lung X-ray images of a healthy person.** |
| **2** | **CovidAID: COVID-19 Detection Using Chest X-Ray** | **IIT June 2020** | **Arpan Mangal, Surya Kalia** | **Deep learning, covid-19 detection, chest x-ray.** | **We have presented some initial result on detecting covid-19 positive cases from chest x-ray using a deep learning model.** |
| **3** | **Using artificial intelligence for covid-19 chest x-ray diagnosis.** | **May 26 , 2020** | **Andrew A . Borkowski, Narayan A. Vishwanathan.** | **Covid-19, coronavirus , AI , diagnosis, radiology, pathology, deep learning.** | **We have utilized a readily available, commercial platform to demonstrate the potential of AI to assist in the successful diagnosis of covid-19 pneumonia on CXR images.** |
| **4** | **Detection using CNN transfer learning from x-ray images.** | **ICCSPA 2019** | **Taban majeed, Aras Asaad, Rasber Rashid.** | **Coronavirus, convolutional neural network, deep learning class activation maps , covid-19.** | **This paper presents a critical analysis for CNN architecture proposed originally for the purpose of aiding radiology to discriminate covid-19 disease based on chest x-ray images.** |
| **5** | **Within the Lack of Chest COVID-19 X-ray Dataset: A Novel Detection Model Based on GAN and Deep Transfer Learning** | **IEEE 20** | **Mohamed Loey, Florentin Smarandache and Nour Eldeen M. Khalifa** | **Deep learning, convolutional neural networks, generative adversarial network, synthetic data augmentation, covid-19 detection.** | **We proposed an ACGAN based model called covid GAN that generates synthesis CXR images to enlarge the dataset and to improve the performance of CNN in covid-19 detection.** |

1. **Motivation:**
2. **Objective(s):**

**Our aim is to make an interface (Mobile application and Web**

**application) which will give a user a friendly environment to**

**interact with the system, this system will be used by**

**pathologists for the diagnosis.**

1. **Proposed work with Methodology:** 
   1. **Data Collection: As always it is the toughest part. We will gather both covid-19 as well as non-COVID 19 patient’s image x-ray data.**
   2. **We need frontal view of X-RAY images dataset.**
   3. **Data Augmentation: As there is very less amount of data available, we have to augment the data.**
   4. **Data pre-processing: Pre-processing the images of x-ray to be converted it to format that our model will perform on.**
   5. **Model Architecture: We are using combination of different layers to select the best performing model from all. We will be using Google Colab for training the model and it will be deployed on any cloud service.**
2. **Software &Hardware Platform :- Hardware: PC/Mac, Android Device,**

**Software Platform: Pytorch/Tensorflow, Python, Anaconda distribution, Android Studio, JavaScript, Git**

1. **Project Group Information:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group No.** | **Roll No** | **Name Of Student** | **Contact No.** | **Email-id** | **Sign** |
| **13** | **BCC12**  **BCC03**  **BCC02**  **BCC16** | **Ashish Karhade**  **Amit Gupta**  **Abhishek Yogi**  **Pallavi Landge** | **7066462818**  **8087604645**  **7083309546**  **9156566741** | [**akarhade5@gmail.com**](mailto:akarhade5@gmail.com)  **amitgupta98c@gmail.com**  [**Abhishekyogi07@gmail.com**](mailto:Abhishekyogi07@gmail.com)  **Pallavilandge3@gmail.com** |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**To be filled by Approval committee members:**

1. **Observations/Remarks by faculty:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **Recommended : Yes/No**
2. **Names of Approval committee members(name & sign):-**

**a.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**c.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**d.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**