EFFICIENT PNEUMONIA DETECTION IN DIGITAL CHEST XRAY IMAGES USING DEEP TRANSFER LEARNING

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Outline

INTRODUCTION

- Pneumonia is one of the largest infectious diseases that cause death in children and elderly people across the globe.
- Pneumonia is ranked eight in the list of the top 10 causes of death in the United States.
- Due to pneumonia, every year, 3.7 lakh children die in India, which constitutes a total of fifty percent of the pneumonia deaths that occur in India.

- Chest X-rays are primarily used for the diagnosis of this disease.
- However, even for a trained radiologist, it is a challenging task to examine chest X-rays.
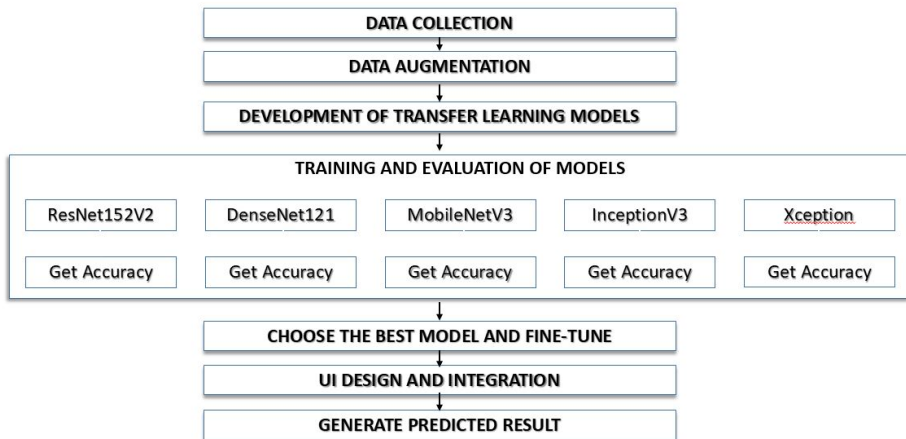- There is a need to improve the diagnosis accuracy.

PROPOSED SYSTEM

- To develop an efficient application / web application to detect Pneumonia by uploading digital Chest X-ray .
- Efficient model for the detection of pneumonia
- Trained on digital chest X-ray images
- Supervised learning approach.
- Transfer learning is used to fine-tune the deep learning models
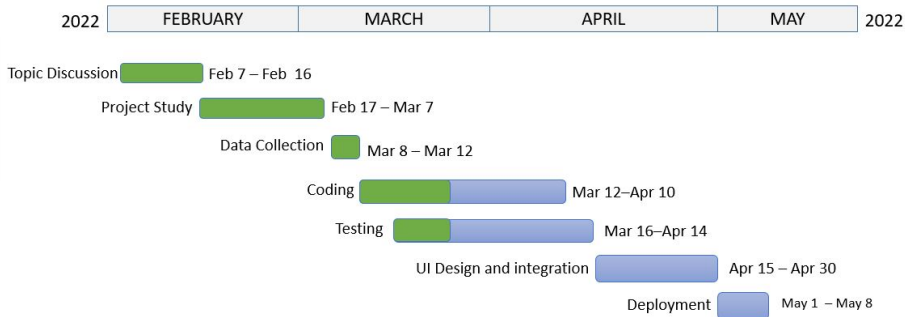
PROPOSED SYSTEM

- A novel approach based on a weighted classifier which will combine the weighted predictions from the state-of-the-art deep learning models such as
    - DenseNet121
    - MobileNetV3
    - ResNet152V2
    - InceptionV3
    - Xception

MODULES

- DATA COLLECTION AND AUGMENTATION
- DEVELOPEMENT OF TRANSFER LEARNING MODELS
- TRAINING AND EVALUTION OF MODELS
- UI DESIGN AND MODEL INTEGRATIION

| 2022 | FEBRUARY | MARCH | APRIL | MAY | 2022 |

- Topic Discussion — Feb 7 – Feb 16
- Project Study — Feb 17 – Mar 7
- Data Collection — Mar 8 – Mar 12
- Coding — Mar 12 – Apr 10
- Testing — Mar 16 – Apr 14
- UI Design and integration — Apr 15 – Apr 30
- Deployment — May 1 – May 8

WORK PROGRESS

- Modified and trained DenseNet121 model with chest xray images.
- Modified and trained MobileNetV3 model with chest xray images.

THANK YOU