



WBS CODING
SCHOOL

Pneumpredict

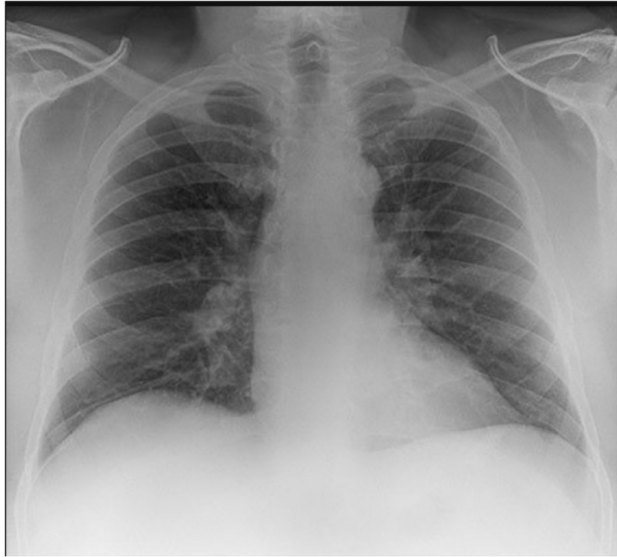
A Deep Learning Assisted
Classification Web App to Predict Pulmonary
Infection from Conventional X-rays

~ Dr. Sabahuddin Ahmad

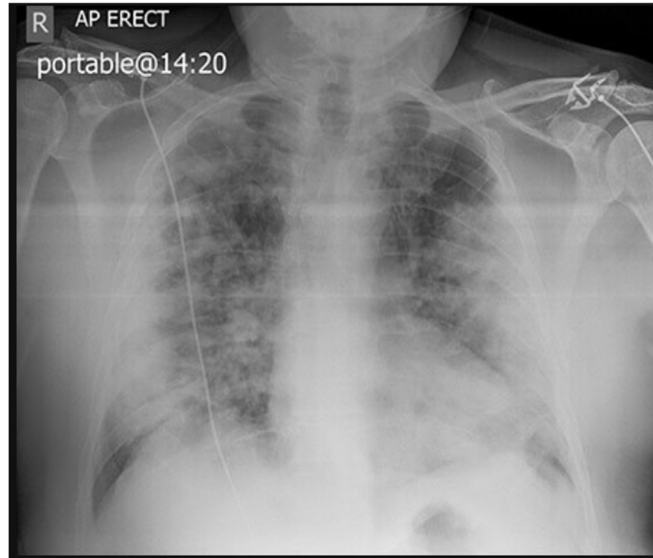
X-rays detect pulmonary infections quickly

- Pulmonary (lung) infections are **life threatening**
- **Pneumonia is a classical example**, mostly caused by virus & bacteria
- **COVID-19 virus infects lungs**, causing pneumonia
- The **air sacs within lungs fill up with fluid** or pus in pneumonia
- X-ray provides a diagnostic image **within 15 minutes**
- An expert to **interpret the result** may not be immediately available

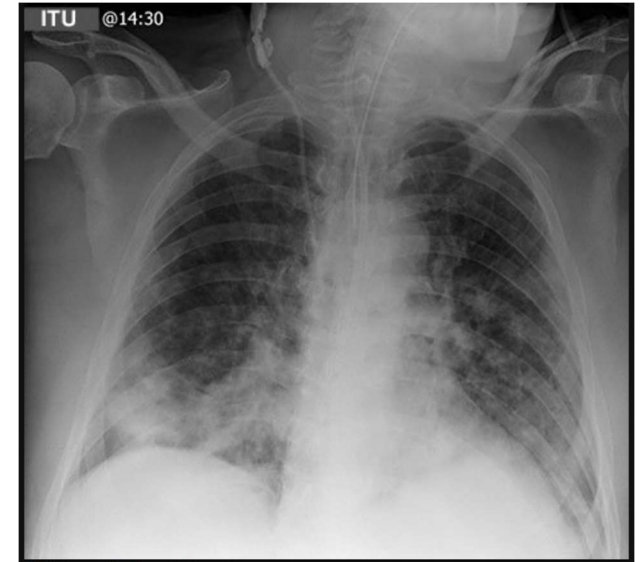
Journey of a Covid19 patient in X-rays



lungs clear & healthy
(2 years before)



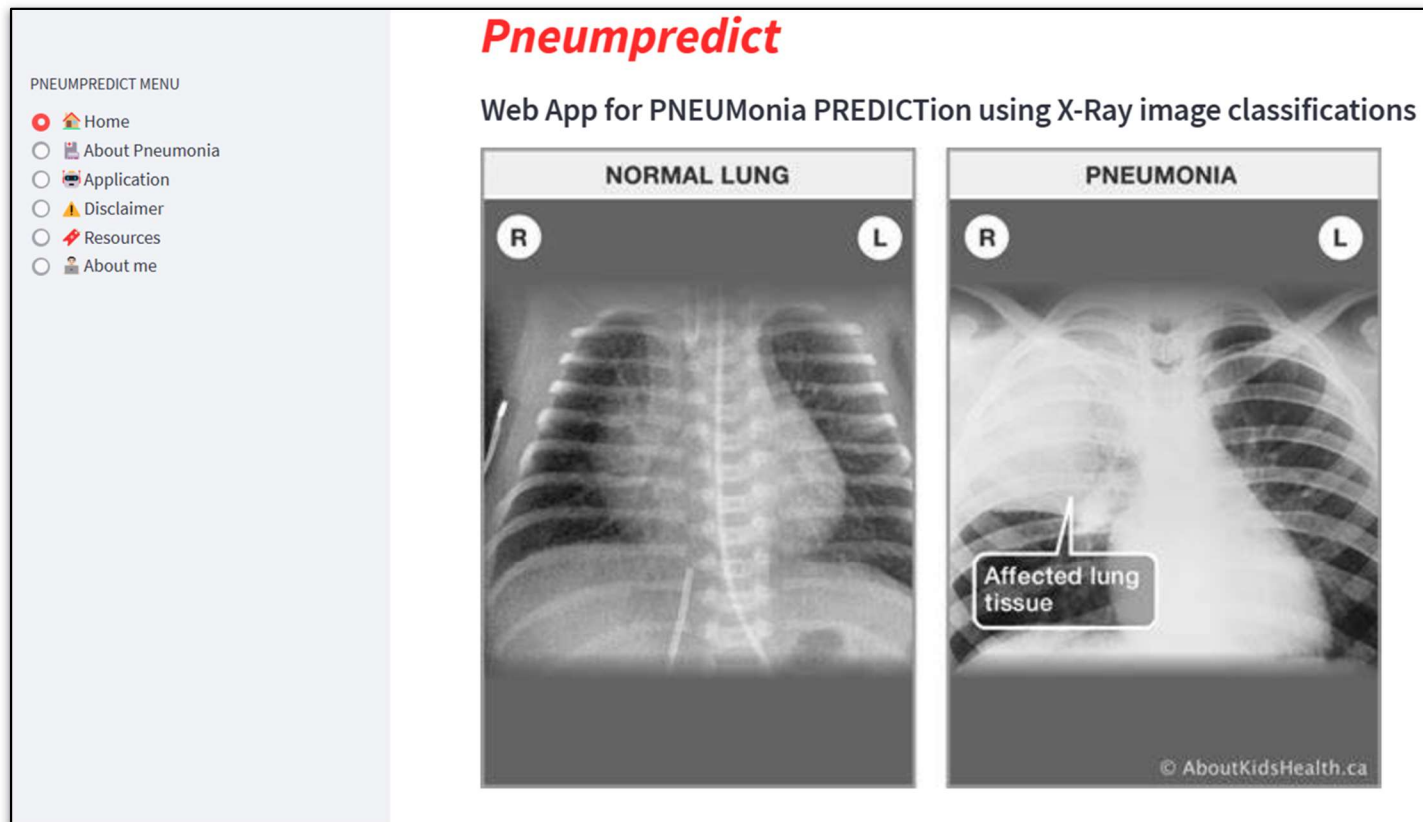
lungs severely infected
(Day 1 of hospitalization)



lungs recovering
(Day 5 of hospitalization)

Application interface:

URL: <https://sabahuddinahmad-pneumpredict-app-v1-ofjwfn.streamlit.app>



Scan Me



Limitations of computer vision on (lung) X-rays

- Data augmentation (by rotation, zooming, tilting) does not work
- Cannot be classified for the cause (viral, bacterial or other reasons)
- Accuracy of model depends on the quality of the images
- X-ray may have noise in patients (due to medical devices, support)

*You can have data without information,
but you cannot have information
without data*

– Daniel Keys Moran