

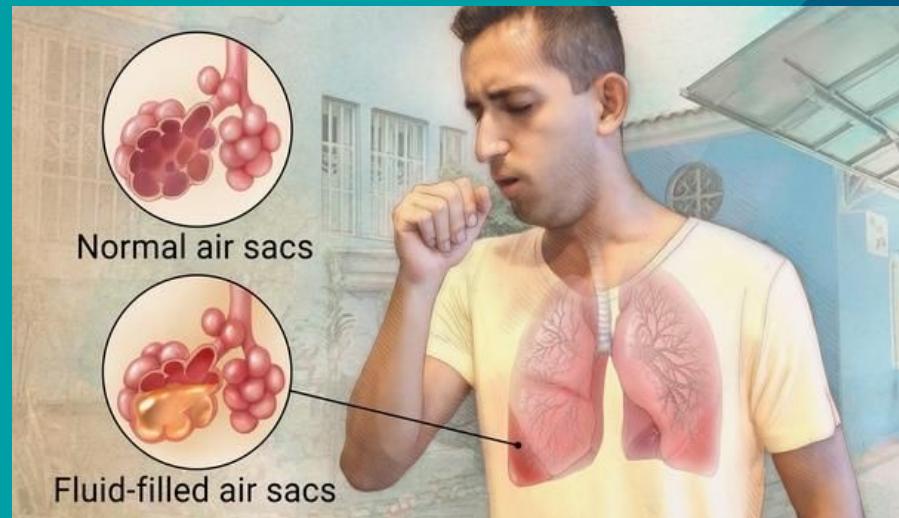
Pneumonia Detection using Convolutional Neural Network

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WHAT IS PNEUMONIA?

“Pneumonia is a severe lung infection, where it causes the air sacs in the lungs to be filled with fluid.”

- *American Lung Association*



FACTS ABOUT PNEUMONIA

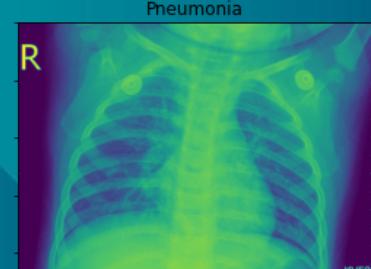
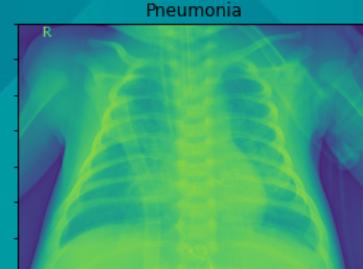
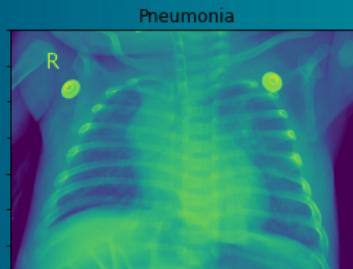
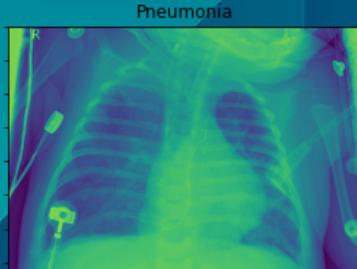
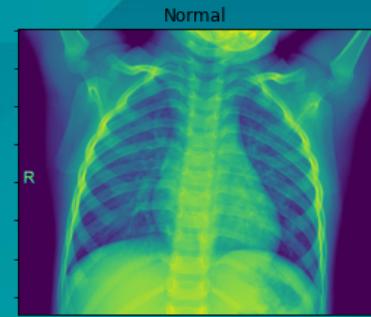
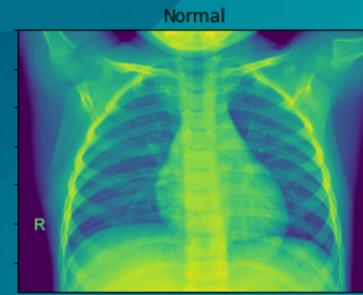
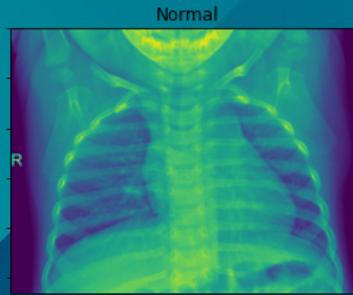
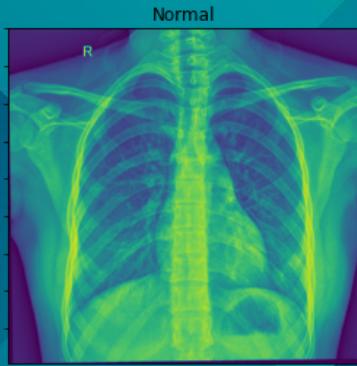
Over 150 million people get infected on an annual basis.

The most cause of hospital admission for US adults.

World's leading cause of death for children under age of 5.

The most common reason for US children to be hospitalized.

Chest X-rays





A substance denser than air, such as pus or fluid.

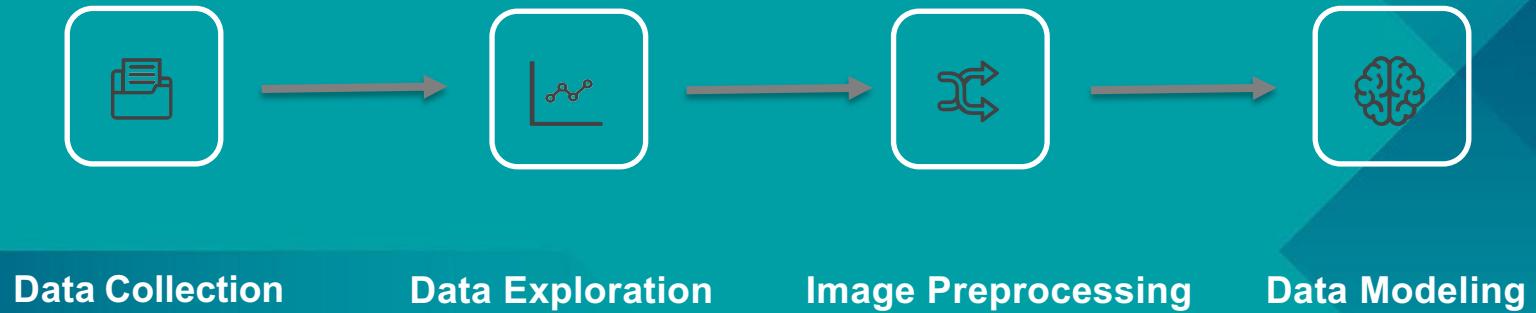


In Africa's 57 countries, a gap of **2.3 million** doctors and nurses exists.

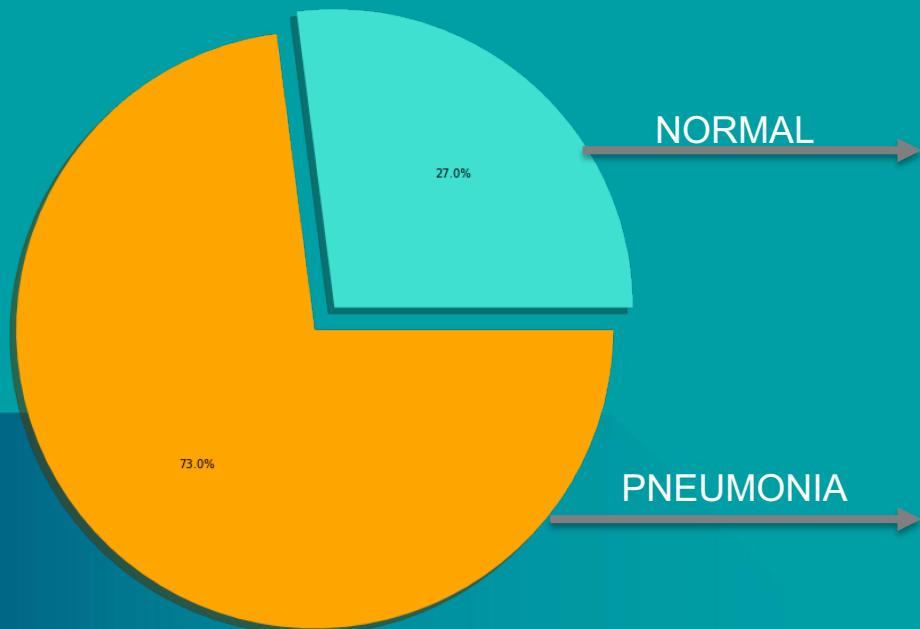
GOAL



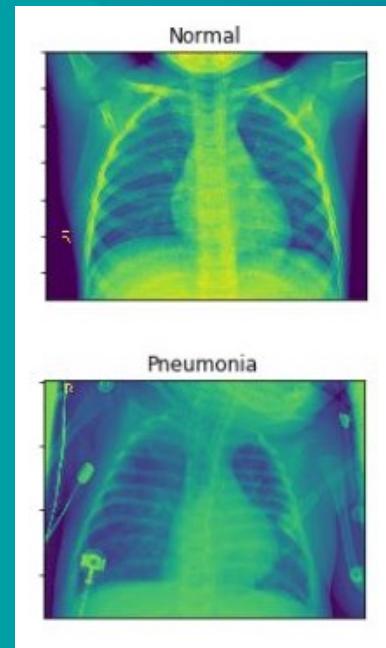
Methodology



TRAINING DATA

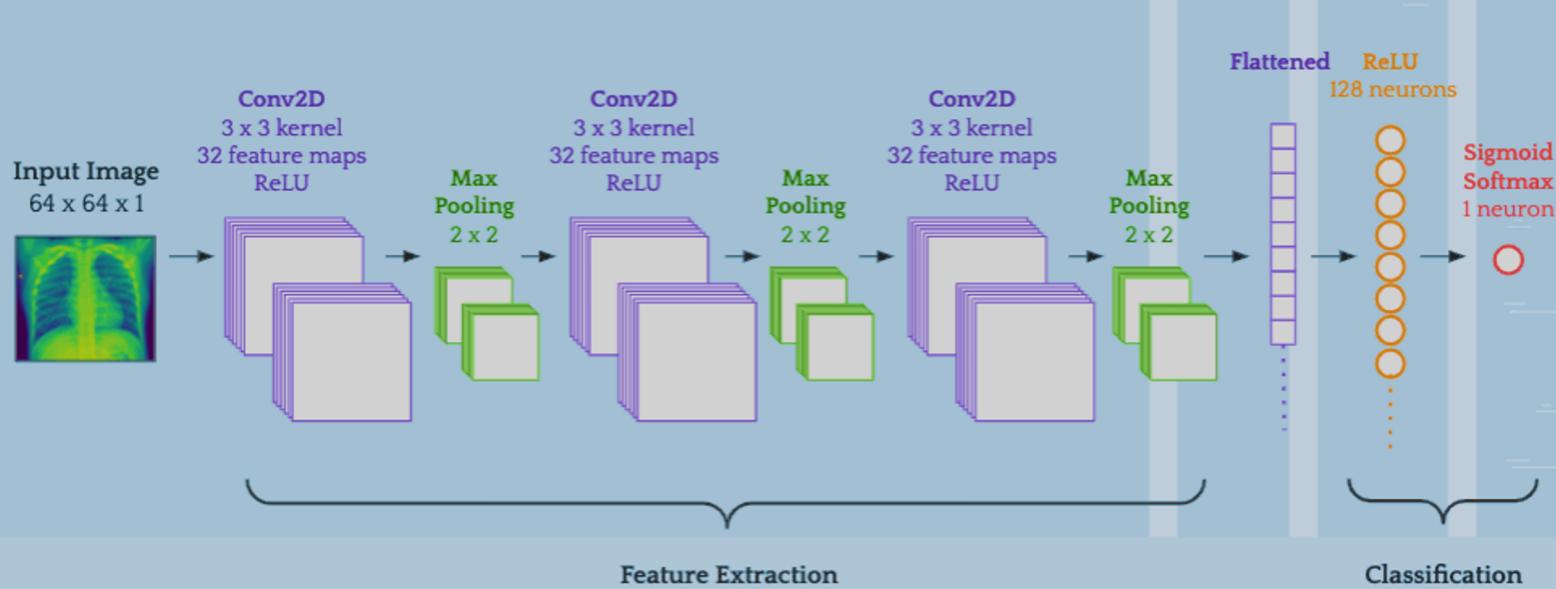


Training Dataset Class Pie Chart



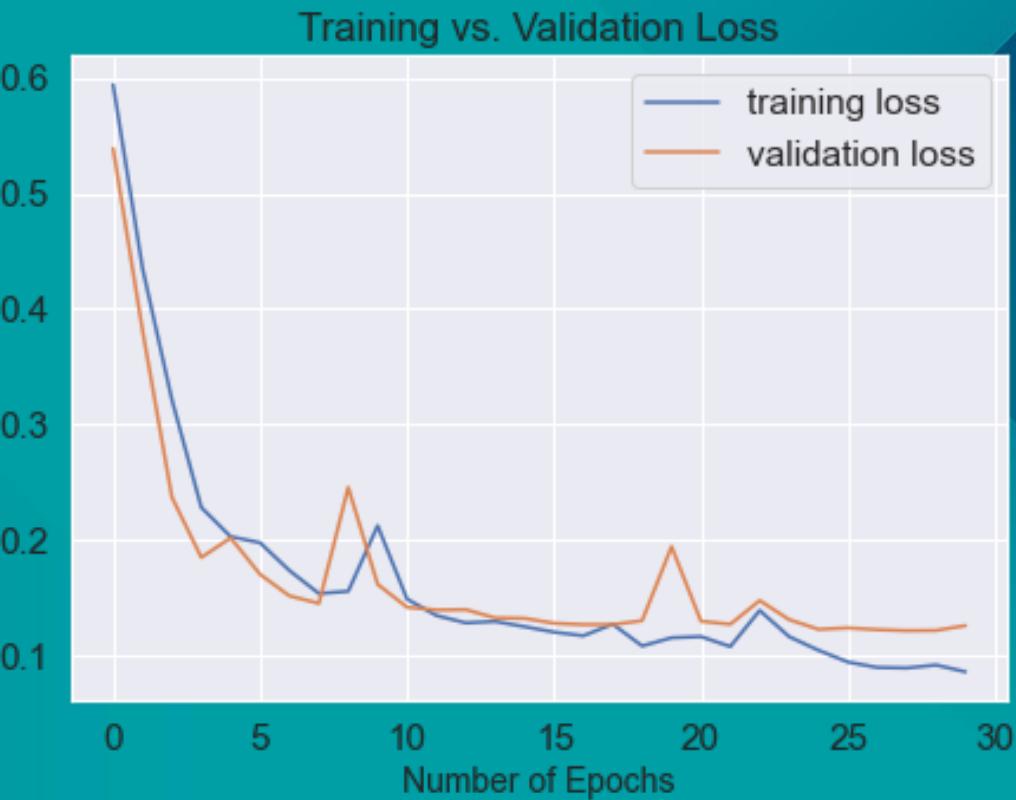
4,099 Chest X-ray Scans

CNN MODEL



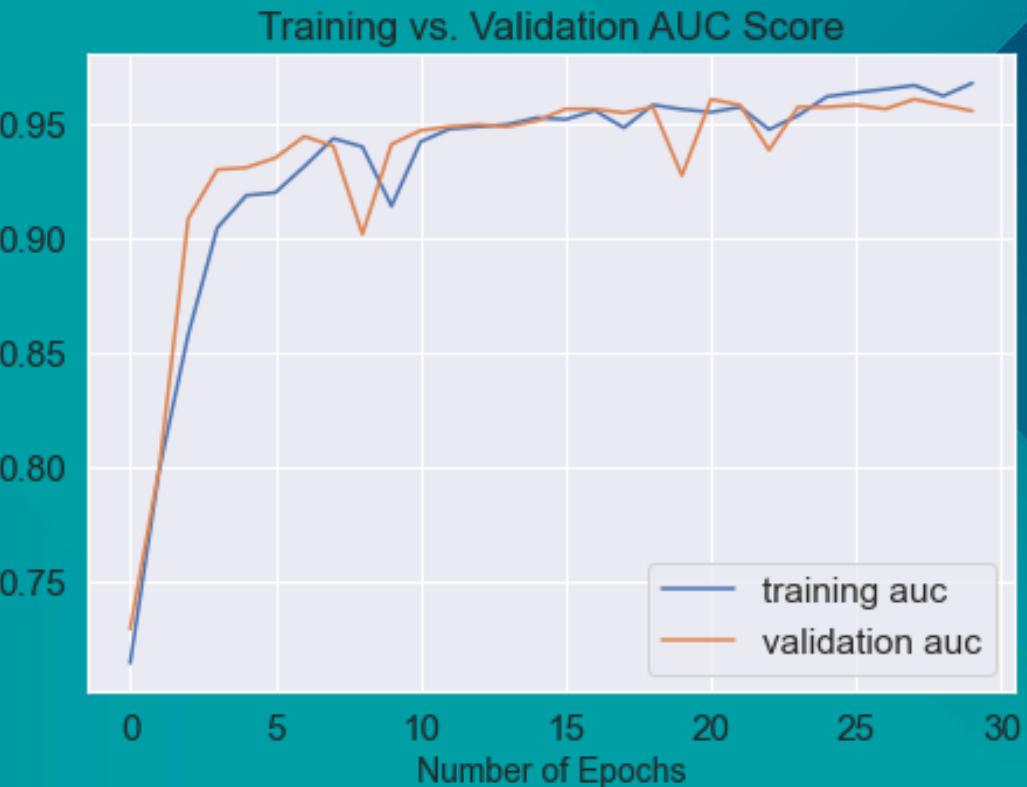
0.12
VALIDATION LOSS

RESULTS



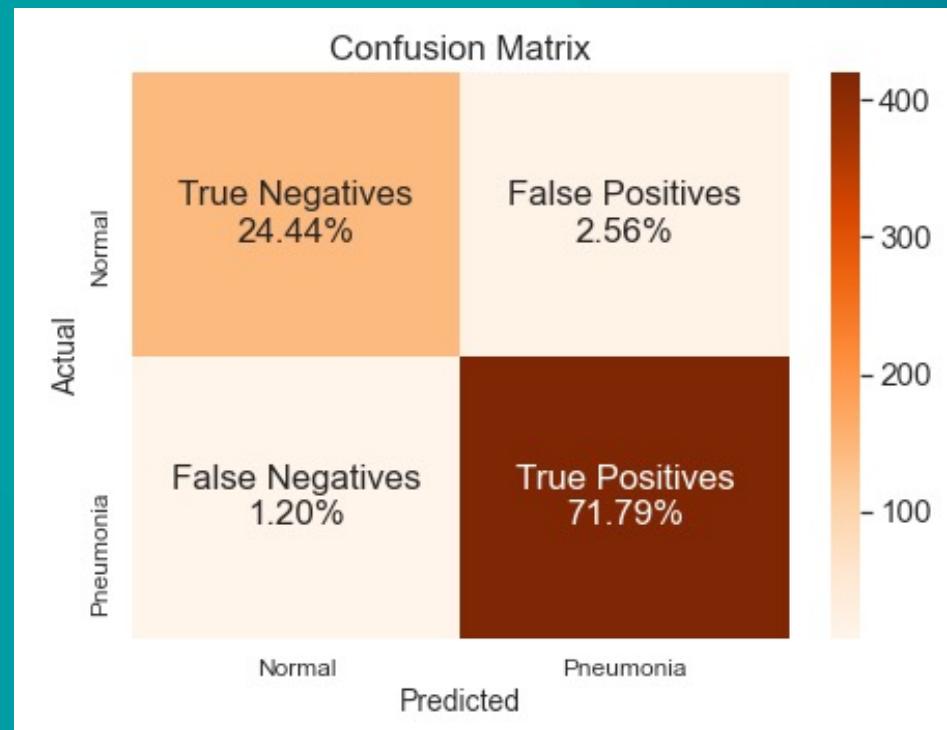
96.24%
VALIDATION ACCURACY

RESULTS



98.36%
RECALL

RESULTS



CONCLUSION

1. Our CNN model can *effectively* detect Pneumonia with extremely *high accuracy*.
2. Radiologists could combine this model and their expertise to make highly accurate diagnosis of Pneumonia.

FUTURE WORK



Residence: China
Ages: < 5 years old
Classification: Binary

Residence: World
Ages: Children + Adult
Classification: Multiclass

THANKS

Do you have any questions?

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