



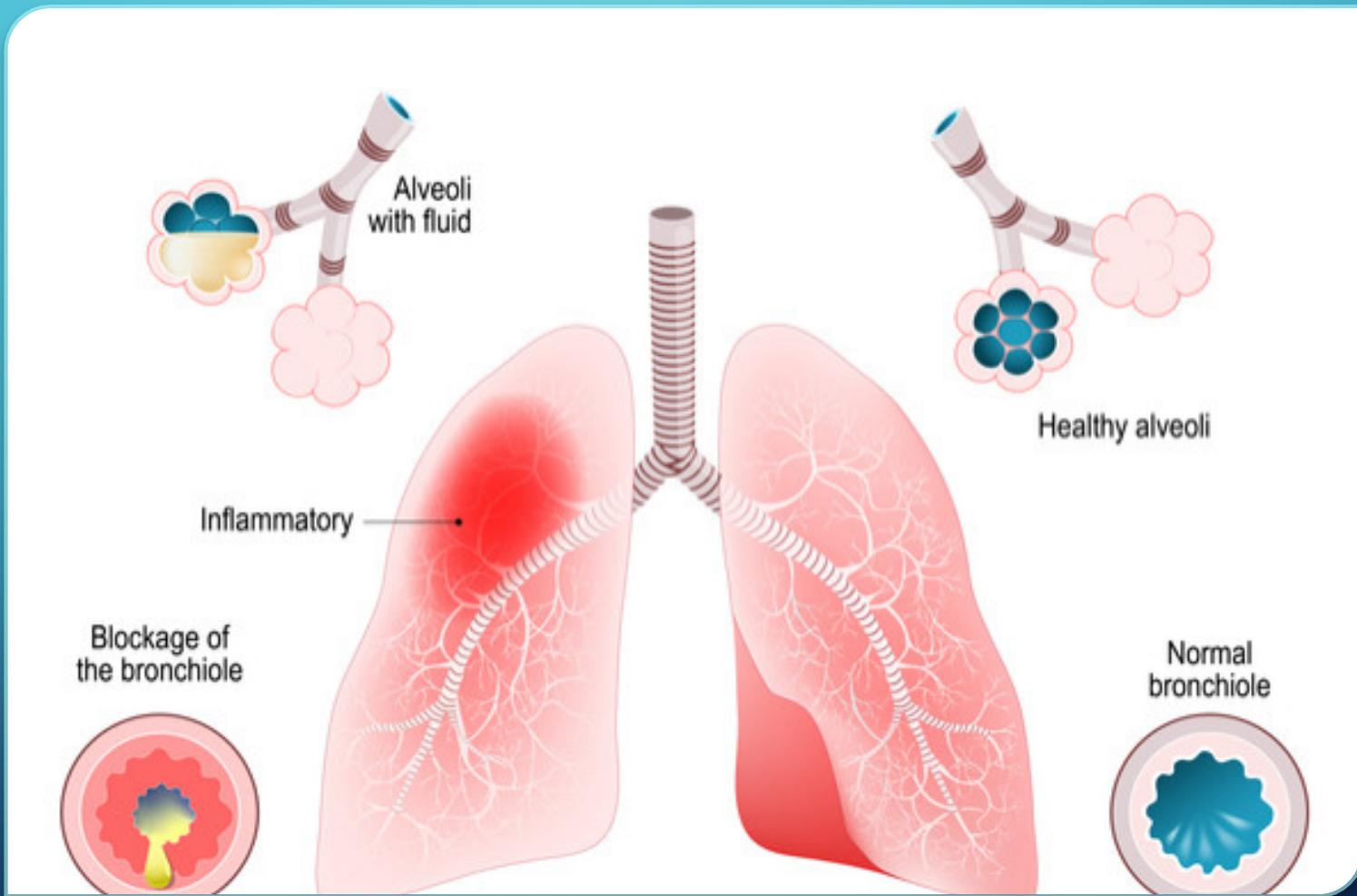
CHEST X-RAYS AND CONVOLUTIONAL NEURAL NETWORKS



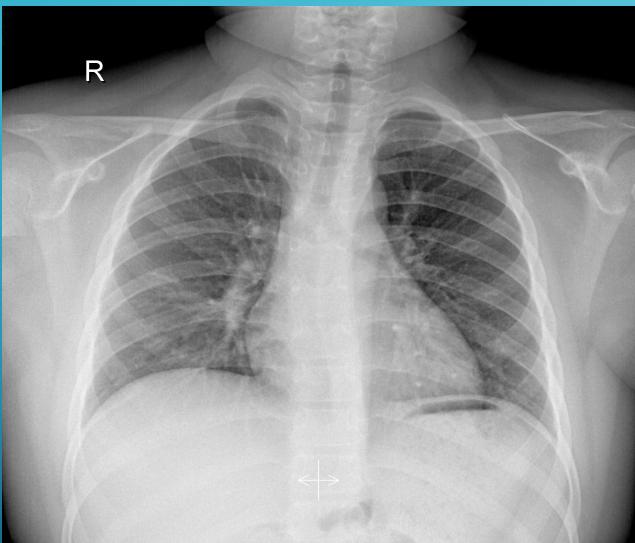
DATA DESCRIPTION

- Downloaded from Kaggle
- 5856 X-ray images
- black & white jpeg 150x150 pixels
- Images shape (50 150 150 3)

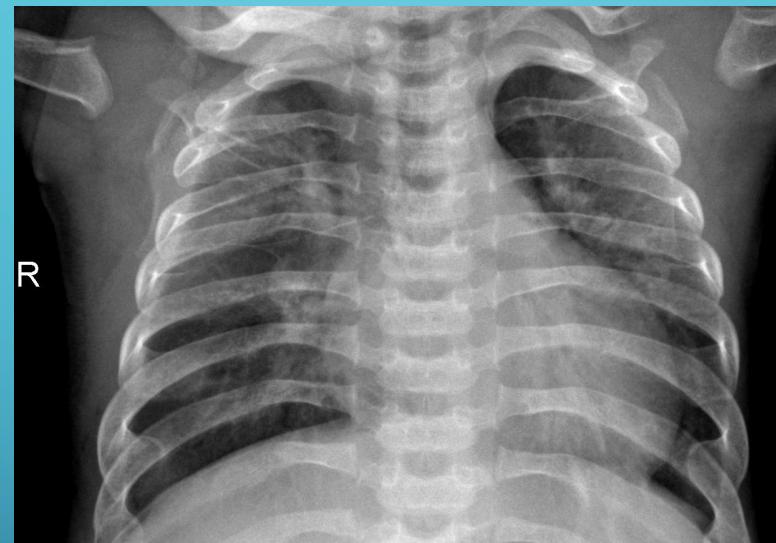
WHAT IS PNEUMONIA?



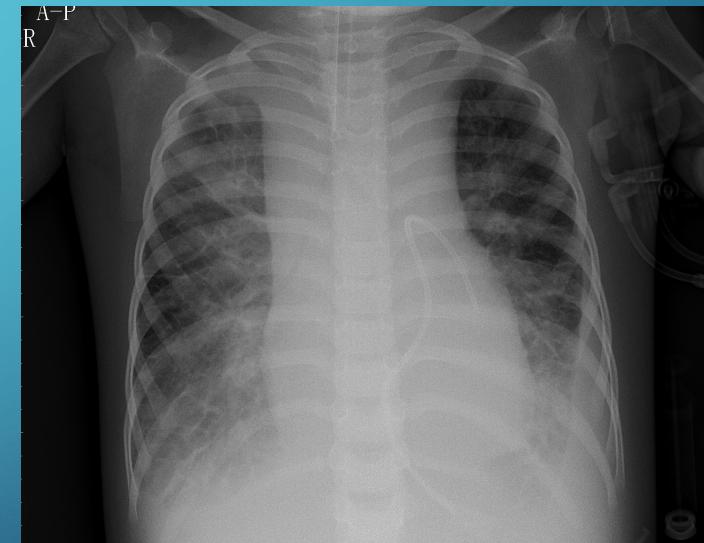
3 DIFFERENT LABELS IN DATASET



Normal X-ray



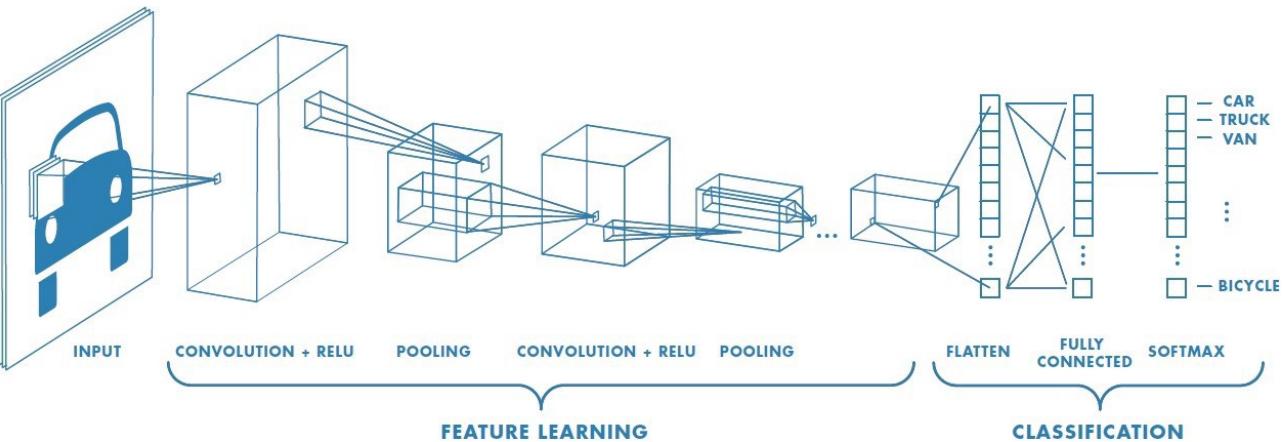
Pneumonia from bacteria

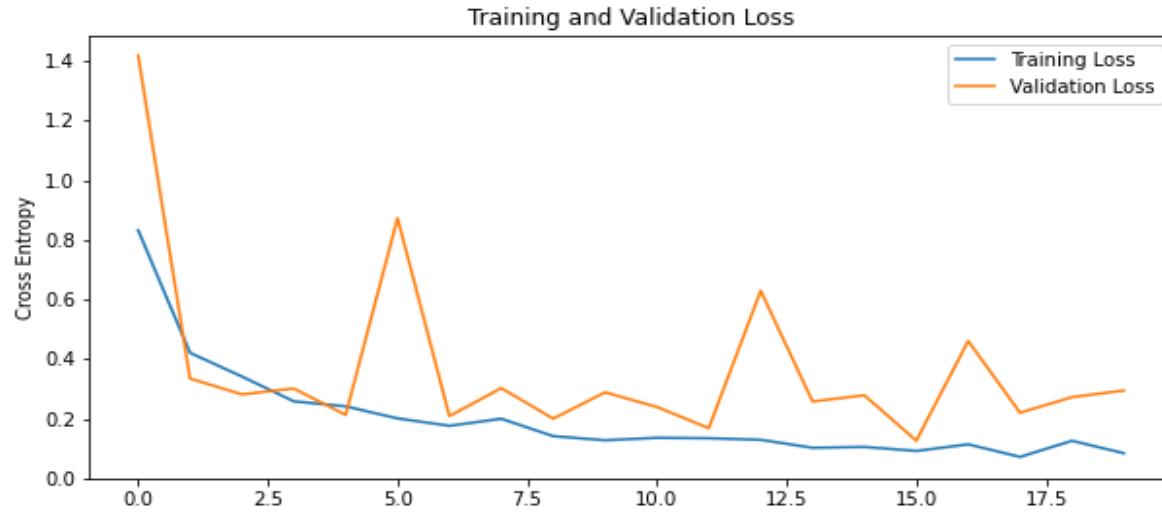


Pneumonia from virus

BUSINESS PROBLEM AND ACCURATE MODEL.

- Convolutional neural networks (CNN)
- Making model
- Recognizing patterns
- Getting the highest accuracy score



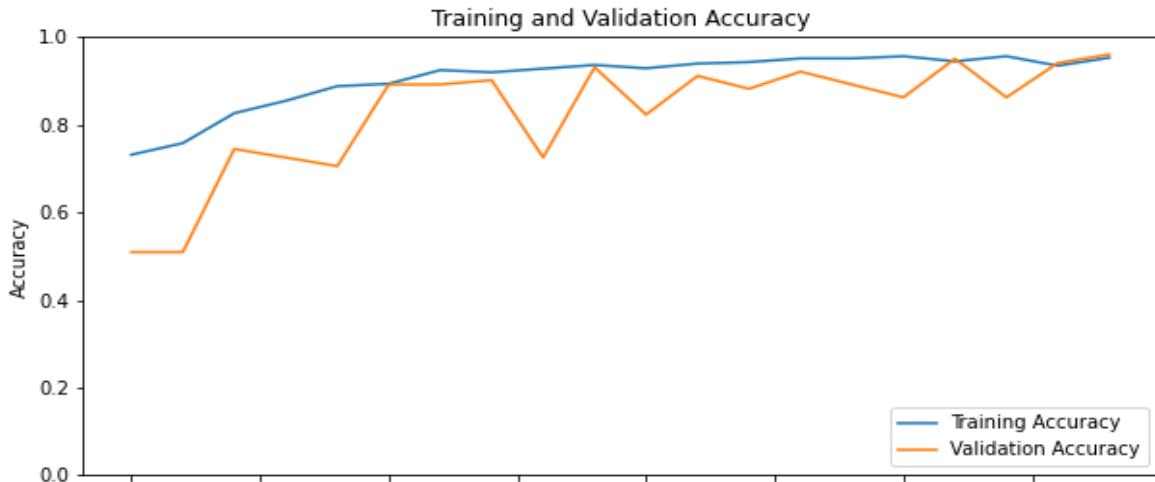


HOW MODEL PERFORMS? FIRST SIMPLE MODEL:

- Input layer
- Flatten layer
- Output layer

Found 624 images belonging to 2 classes.

13/13 [=====] - 5s 405ms/step - loss: 0.6646 - acc: 0.6554
test acc: 0.6554487347602844



FINAL MODEL:

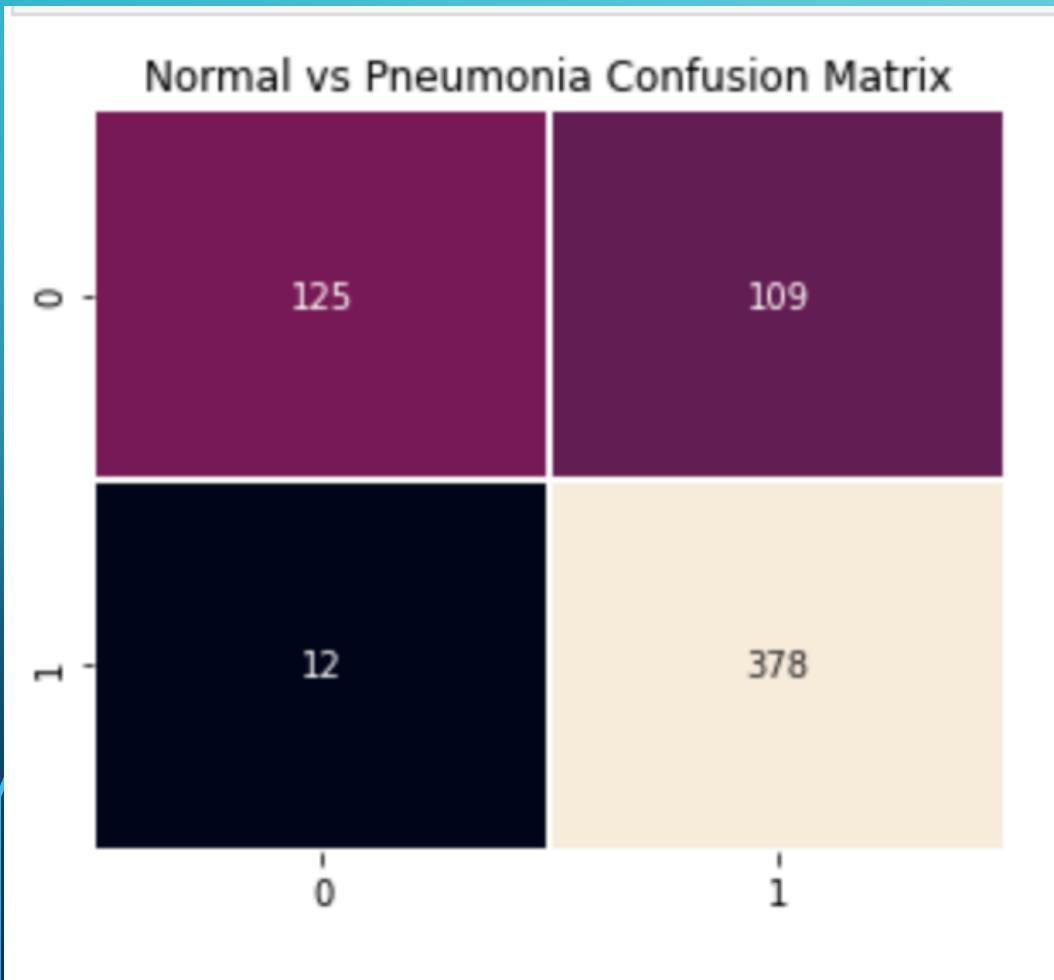
Improved by:

- Adding more layers
- Increasing batch size and epochs
- Adding early stop

Found 624 images belonging to 2 classes.

13/13 [=====] - 6s 493ms/step - loss: 0.5210 - acc: 0.8013
test acc: 0.8012820482254028

RESULTS AND RECOMMENDATIONS



- Back to business question
- Recommendation

	precision	recall	f1-score	support
Pneumonia (Class 0)	0.91	0.53	0.67	234
Normal (Class 1)	0.78	0.97	0.86	390
accuracy			0.81	624
macro avg	0.84	0.75	0.77	624
weighted avg	0.83	0.81	0.79	624

THANKS FOR YOUR TIME

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