X-ray classification project

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Agenda

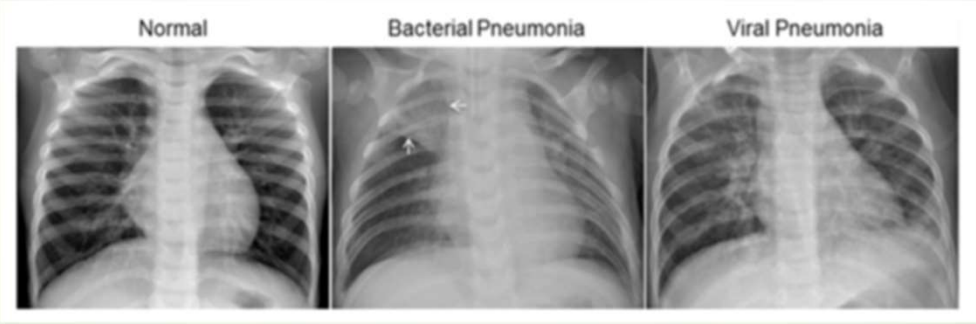
- Business Problem
- Data Understanding
- Models
- Results
- Recommendations and Future work

Business Problem

- A radiologist classifies x-rays as Pneumonia or normal.
- Supplied pre-classified x-rays
- Build a model for challenging x-rays

Data Understanding

- 5,856 chest x-ray images.
- Each image is labelled as either normal or pneumonia.
- 25% of the images are labelled normal and 75% pneumonia.
- Below: condition appears cloudy color.



Models

- Baseline random guess yields: 73% Accuracy
- Use Neural network with hidden layers
- Tune model/algorithm to achieve greatest accuracy

Validation and training accuracies

Model 3 performs better

	Baseline guessing	**Model 3**
Validation	73%	90%
Training	73%	90%

Results/conclusions

- 88% accuracy compared to 73%
- 19 false negatives, 148 false positives out of 1460 predictions

	Predicted Pneumonia	Predicted Normal
Actual Pneumonia	1061	19
Actual Normal	148	232

- This model can be used as a check by the radiologist.

Thank you

- Questions?

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