

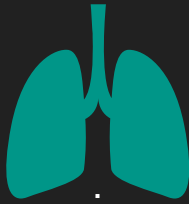


Is It Pneumonia?

Image Recognition as a Diagnostic Tool

AGENDA

Background



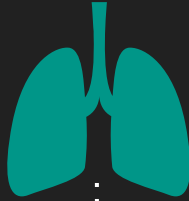
1

Results



4

Business problem



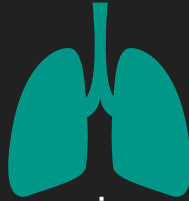
2

Conclusions



5

Data
Understaing

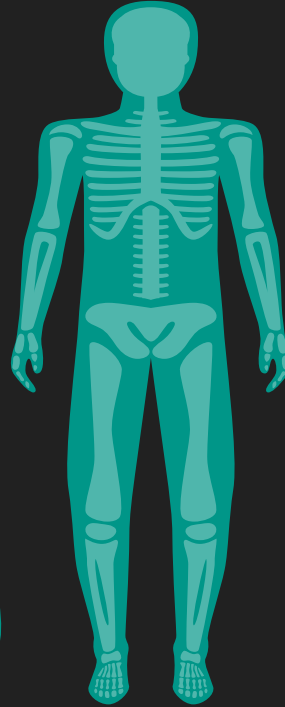


3

Future Research



6



Background



Pediatric pneumonia

affects **1 in 71 children** annually

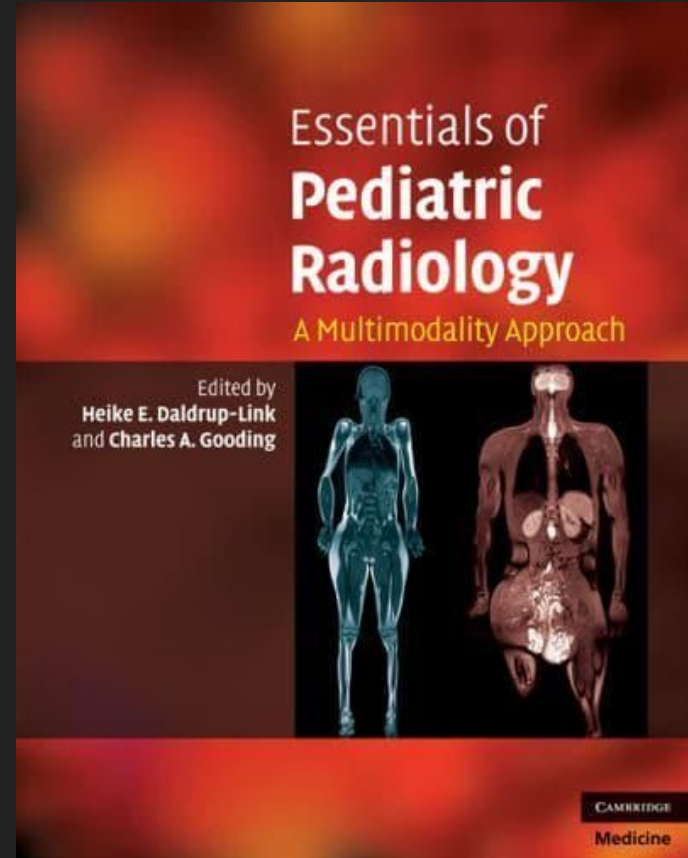
responsible for **2,200 deaths** daily

Background

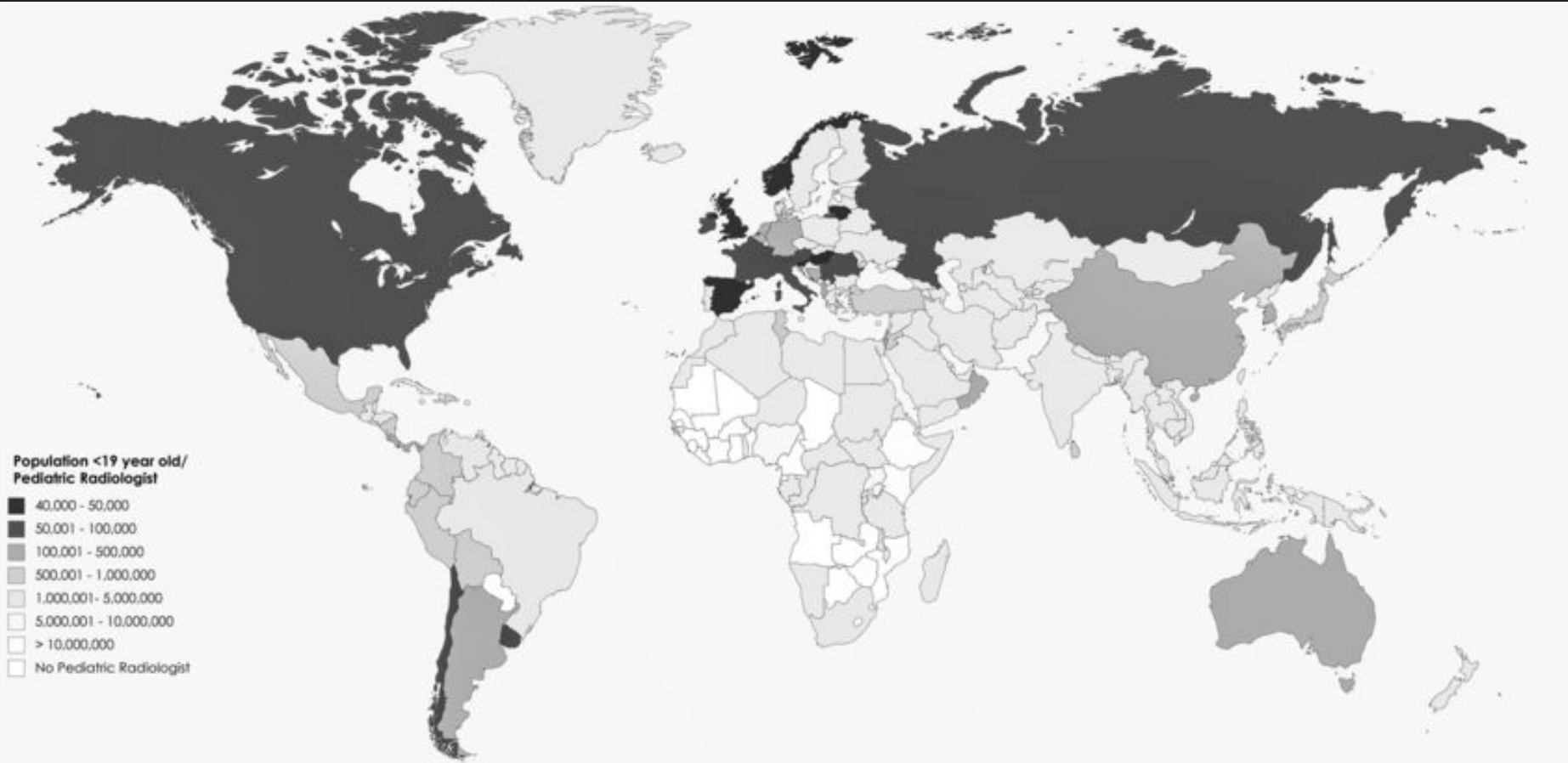
Pediatric radiologists

Highly valued

Disparate distribution



Background



Business Problem

Less pediatric radiologists,
more images to read

Delays in diagnosis

Treatment failures



Diagnostic Support Tool



Data Understanding

Number of pediatric chest xrays:	5,224
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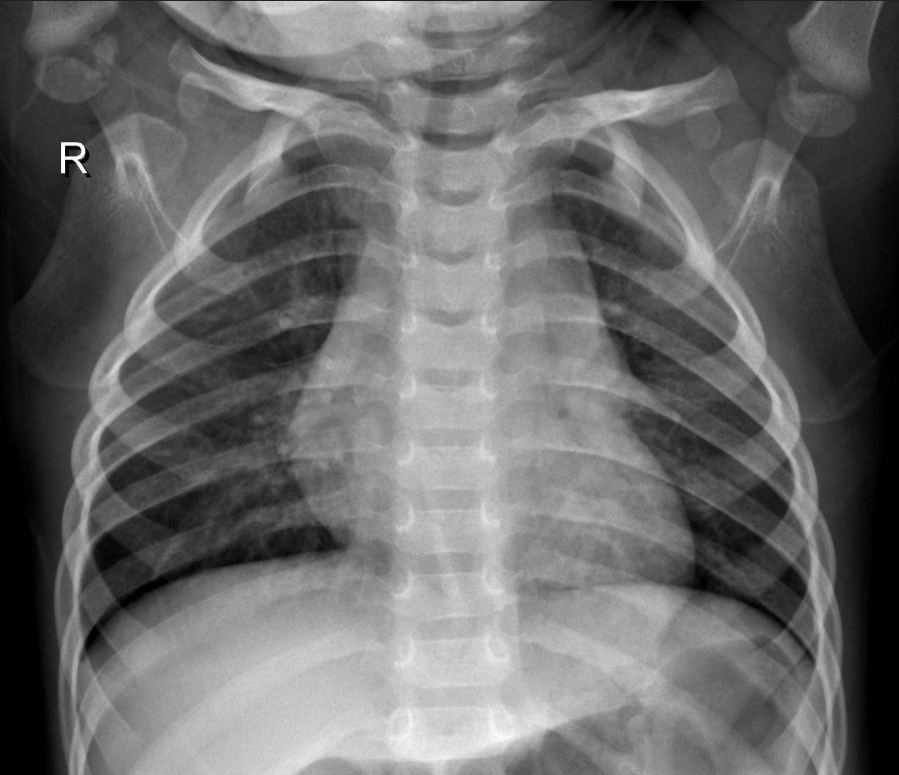
Normal chest xrays:	1,341
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Pneumonia chest xrays:	3,883
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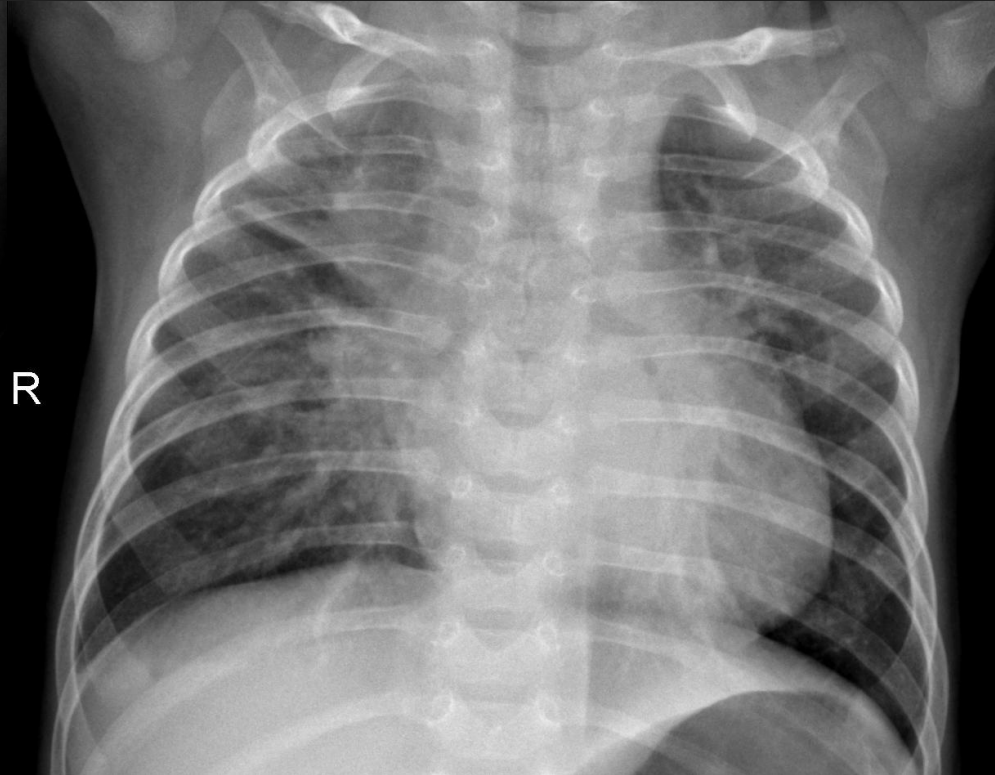
Metric of choice:	Recall
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Data Understanding

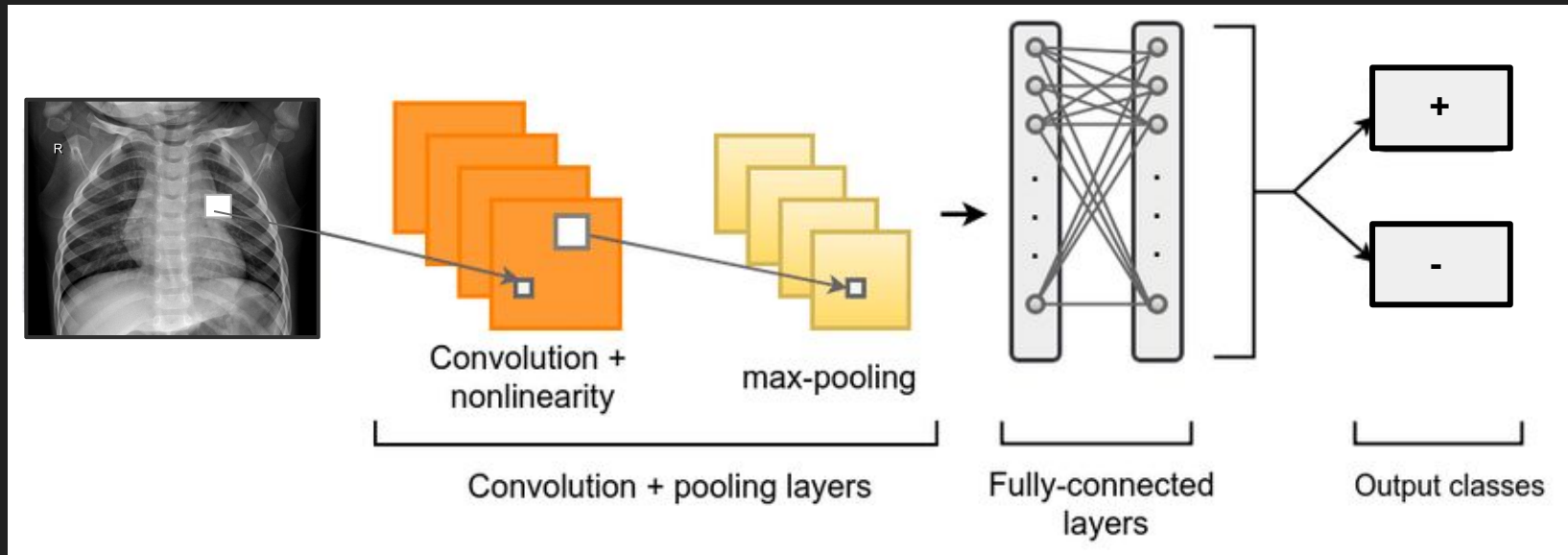
Normal



Pneumonia



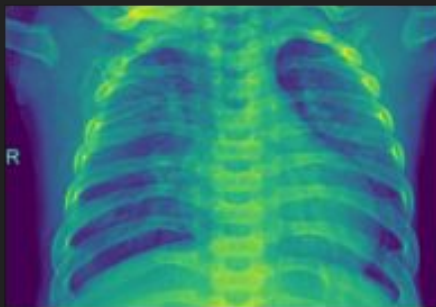
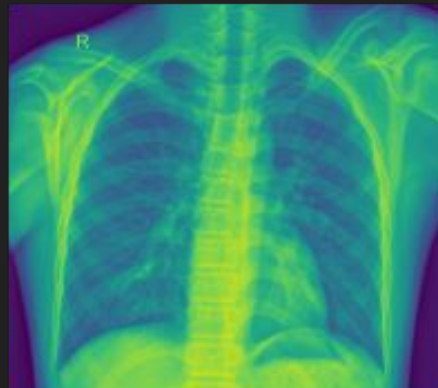
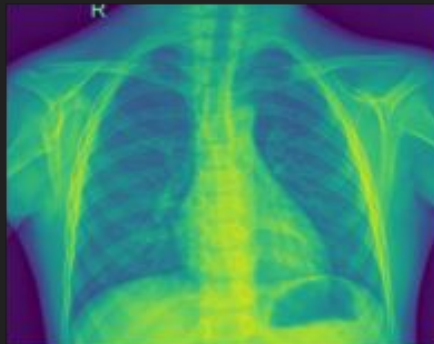
Neural Net Model



Results

95% Recall

Only 1 of 20 cases not identified

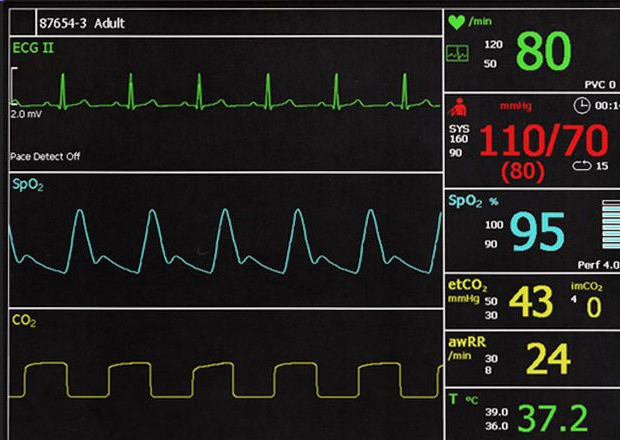
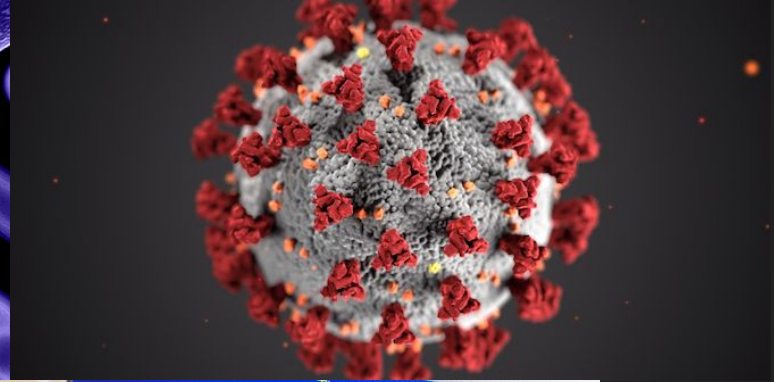
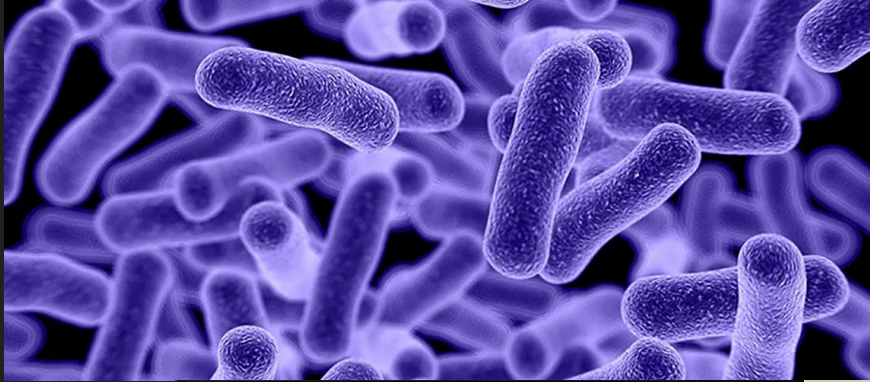


Conclusions

Our model accurately identifies pneumonia in children **95%** of the time



Future Research



APPENDIX