X-RAY IMAGE CLASSIFICATION

with deep learning

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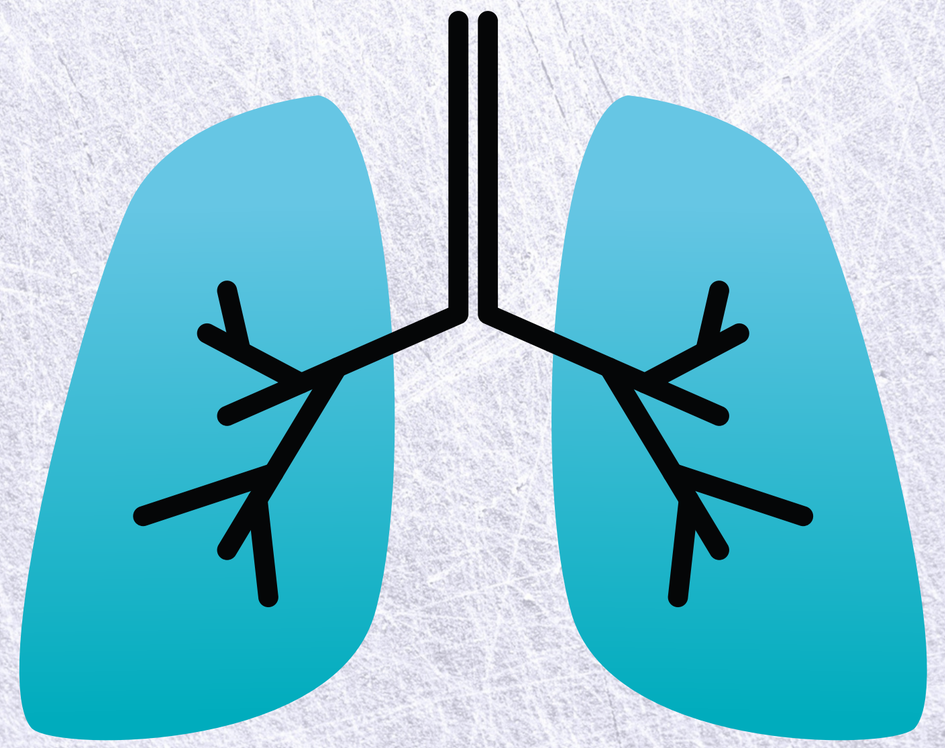


SUMMARY

- ***Developed neural network diagnostic tool***
- ***89.1% accurate detecting pneumonia from x-rays***
- ***Reduce mortality rates***

PRESENTATION OUTLINE

Business Problem & Data

Modeling & Evaluation

Conclusions & Next Steps

Business Problem

- *Over 800k annual deaths in children under 5*
- *Lack of radiologists*
- *Fast deep learning classifier*
- *Quicker diagnosis = reduced mortality rate*

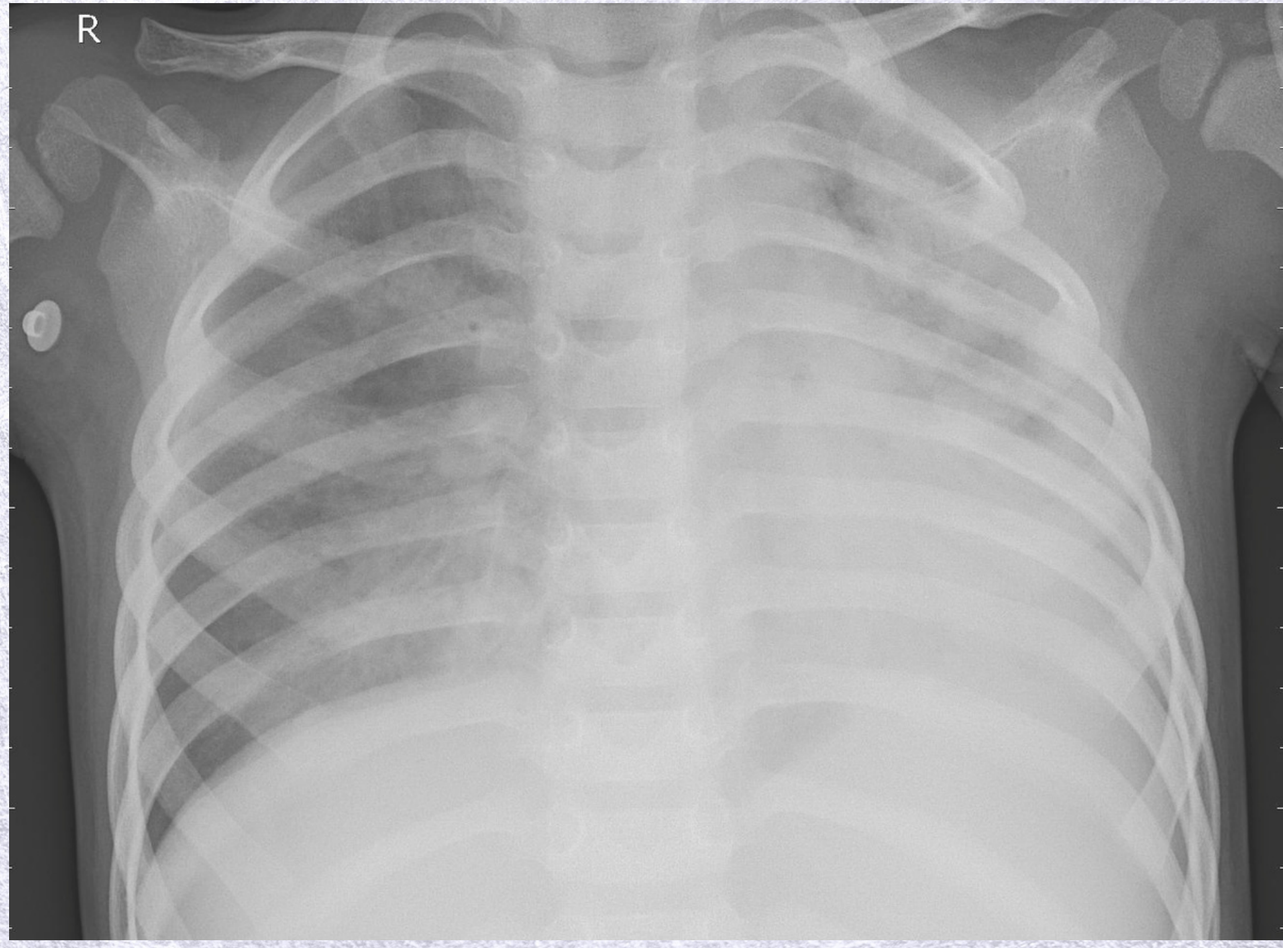
Data Understanding

- ***Guangzhou Women and Children's Medical Center***
- ***Patients between 1-5 years old***
- ***4265 pneumonia images, 1575 negative images***

Data Understanding

- Negative

- Pneumonia

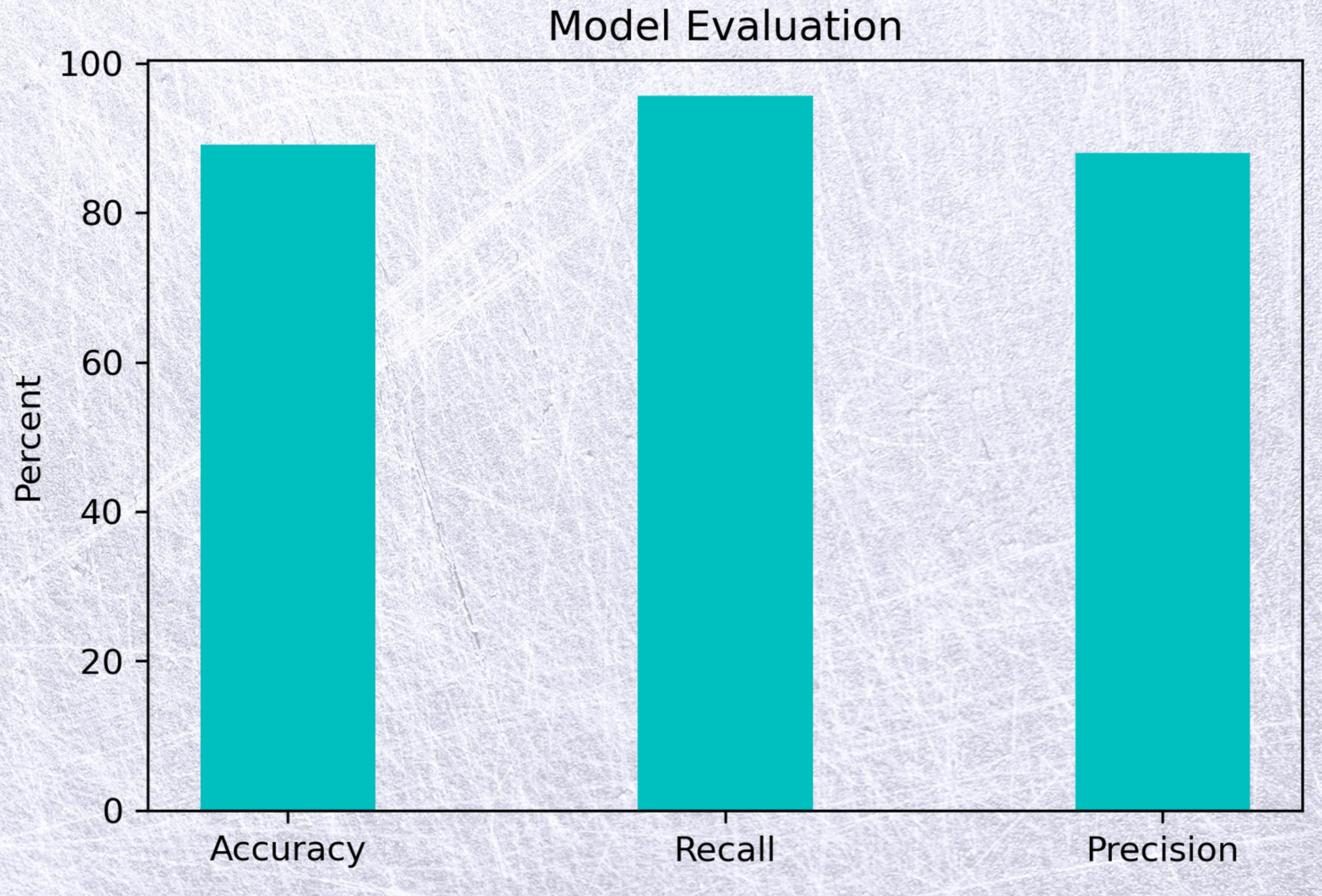


Methods & Modeling

- ***Downsampled images***
- ***Image augmentation***
- ***Neural networks***

Results & Conclusions

- ***CNN with multiple hidden layers***
- ***89% accuracy***
- ***95% recall***
- ***88% precision***



Next Steps

- ***Distinguish viral vs. bacteria pneumonia***
- ***Additional medical imaging data***
- ***Supplemental NLP on patient records***

Thank You

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