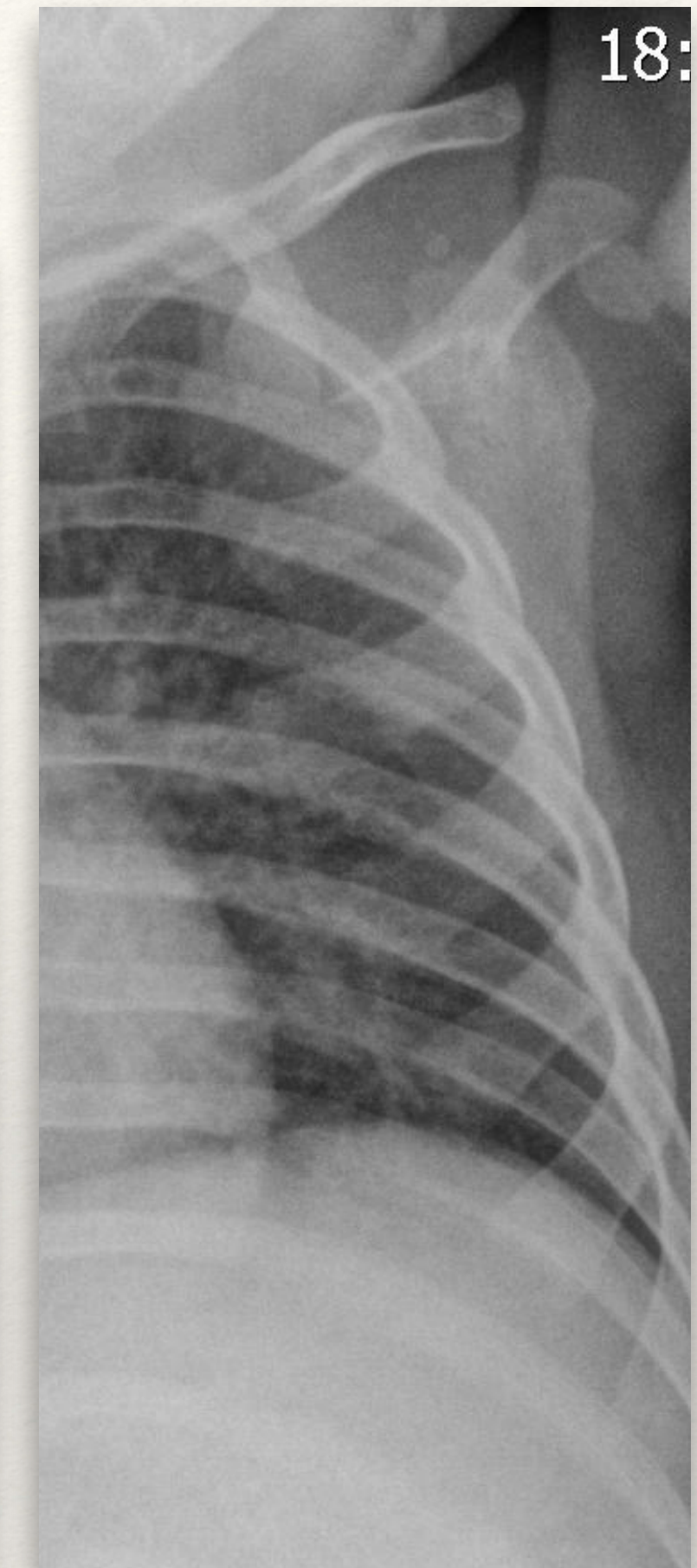
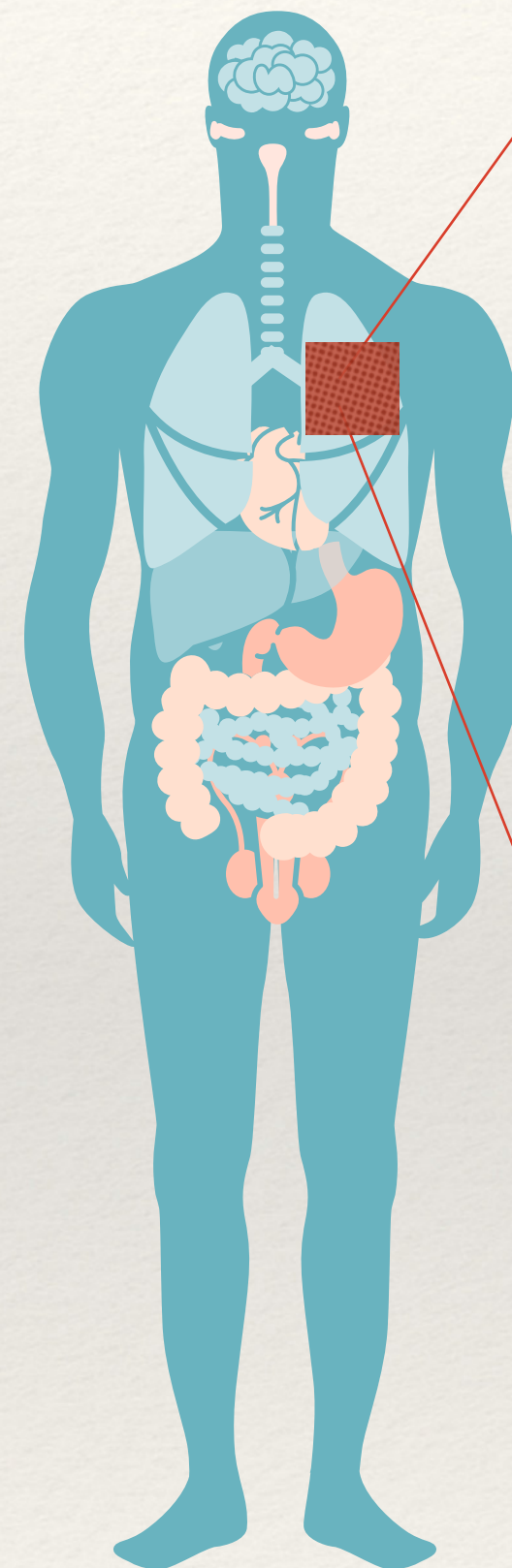


Asia University
Summer Programme 2018

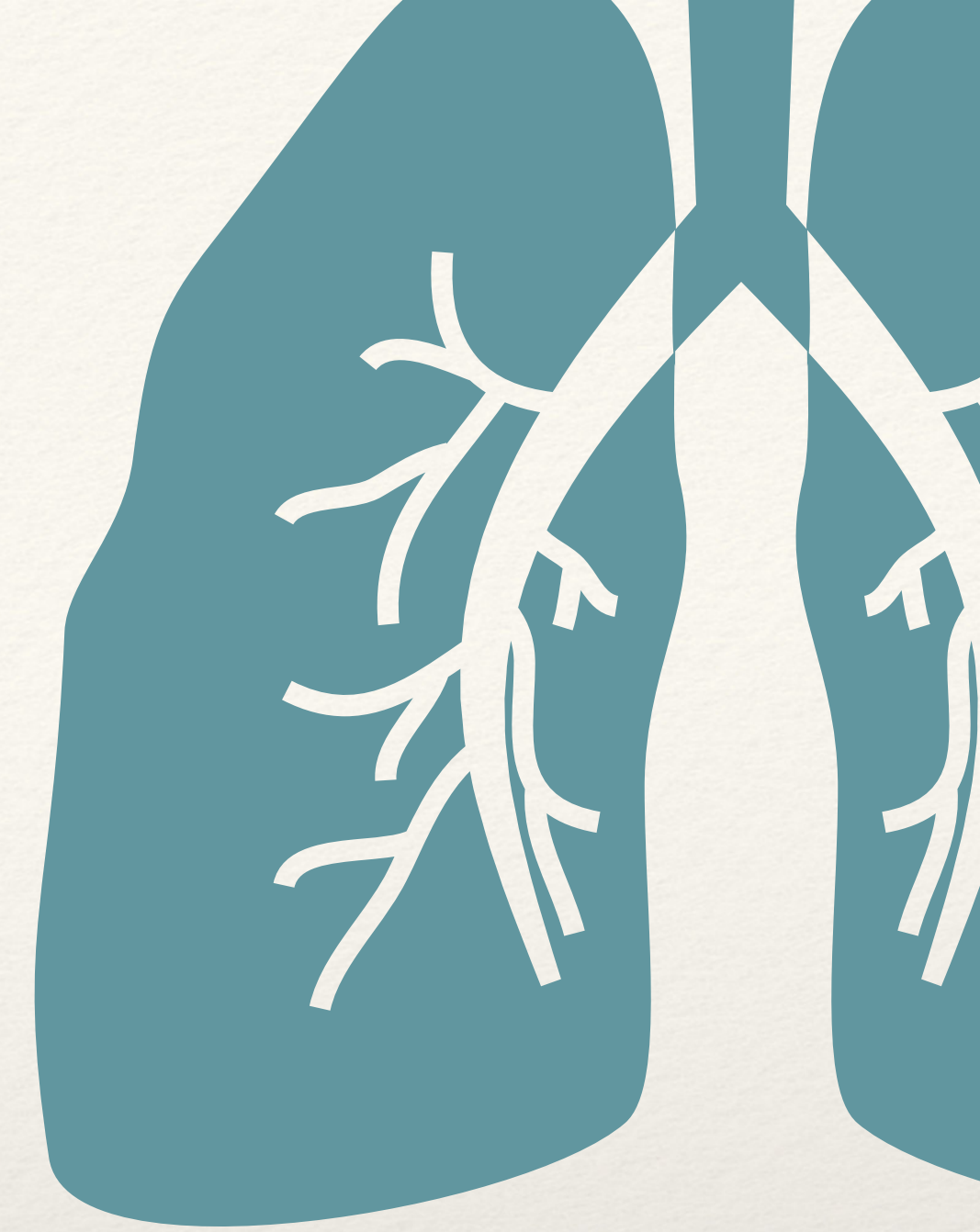
Chest X-Ray Images (Pneumonia)

Artificial Intelligence
(Group 2)

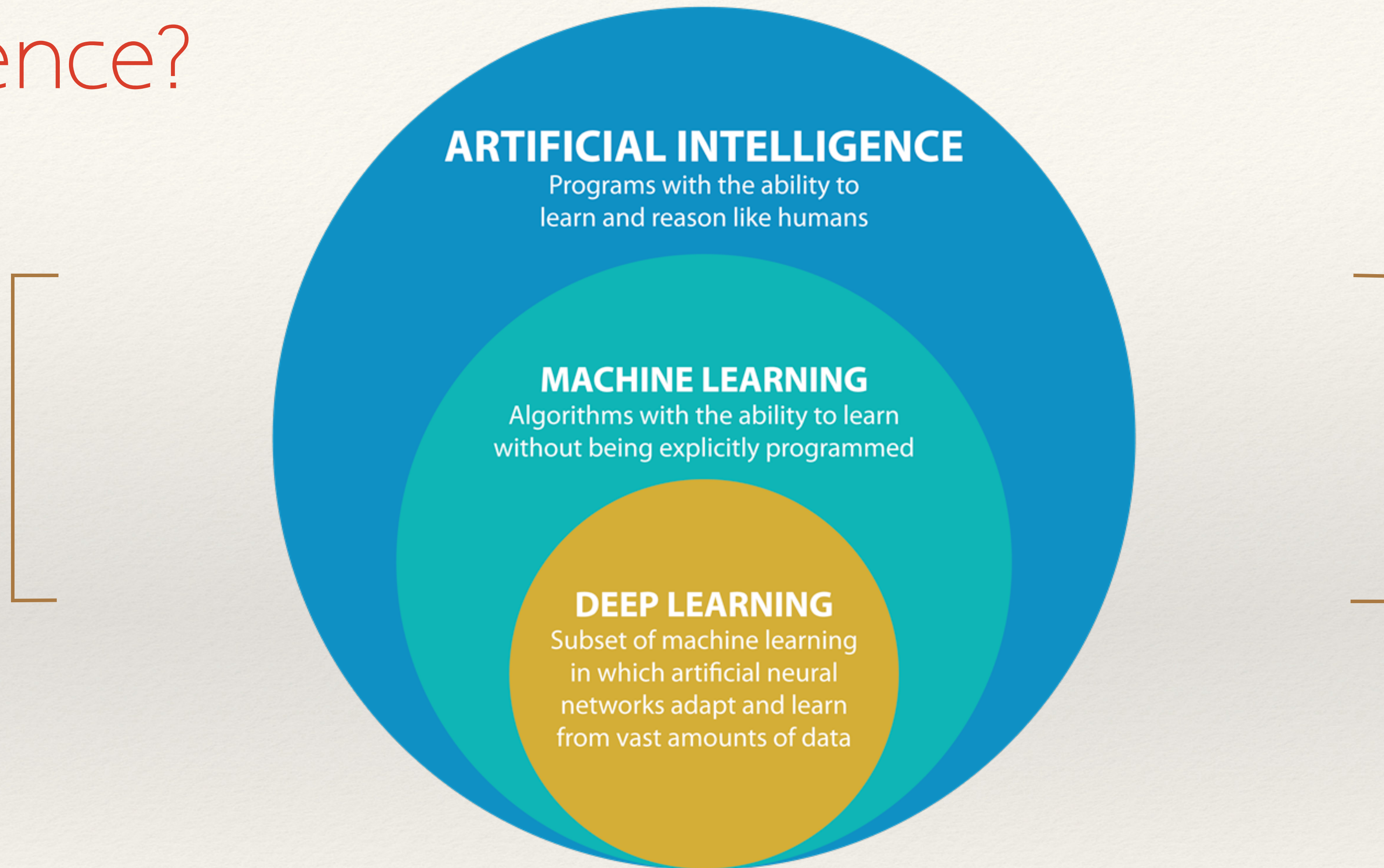




Introduction



What is Artificial Intelligence?



Source: Argility

What is TensorFlow?



TensorFlow™ is an open source software library for numerical computation using data flow graphs.

Source: TensorFlow

What is Keras?



Keras is a high-level neural networks API, written in Python and capable of running on top of TensorFlow, CNTK, or Theano. It was developed with a focus on enabling fast experimentation.

Source: keras.io

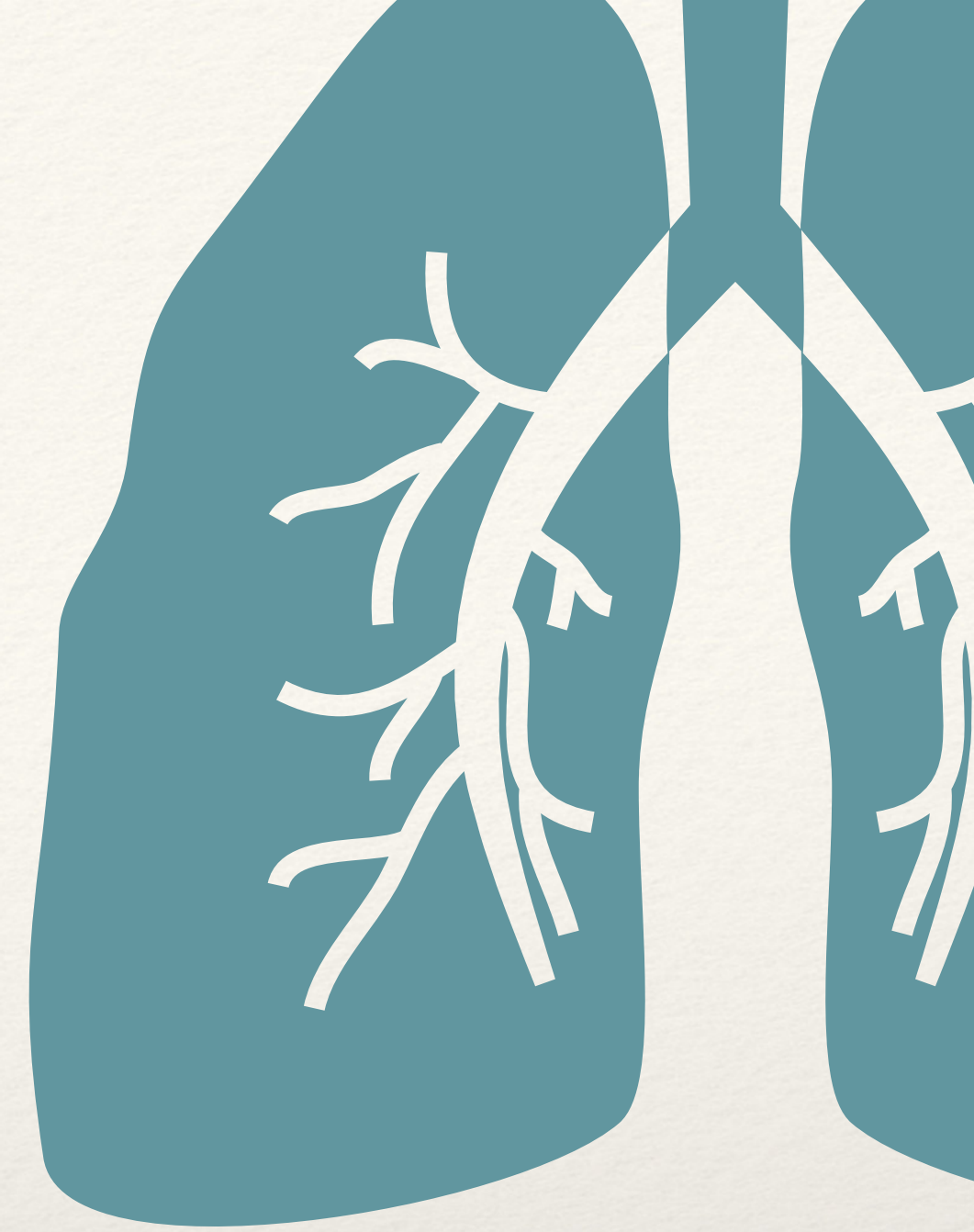
Allows for easy and fast
prototyping

Supports both
convolutional networks
and recurrent networks

Runs seamlessly on CPU
and GPU



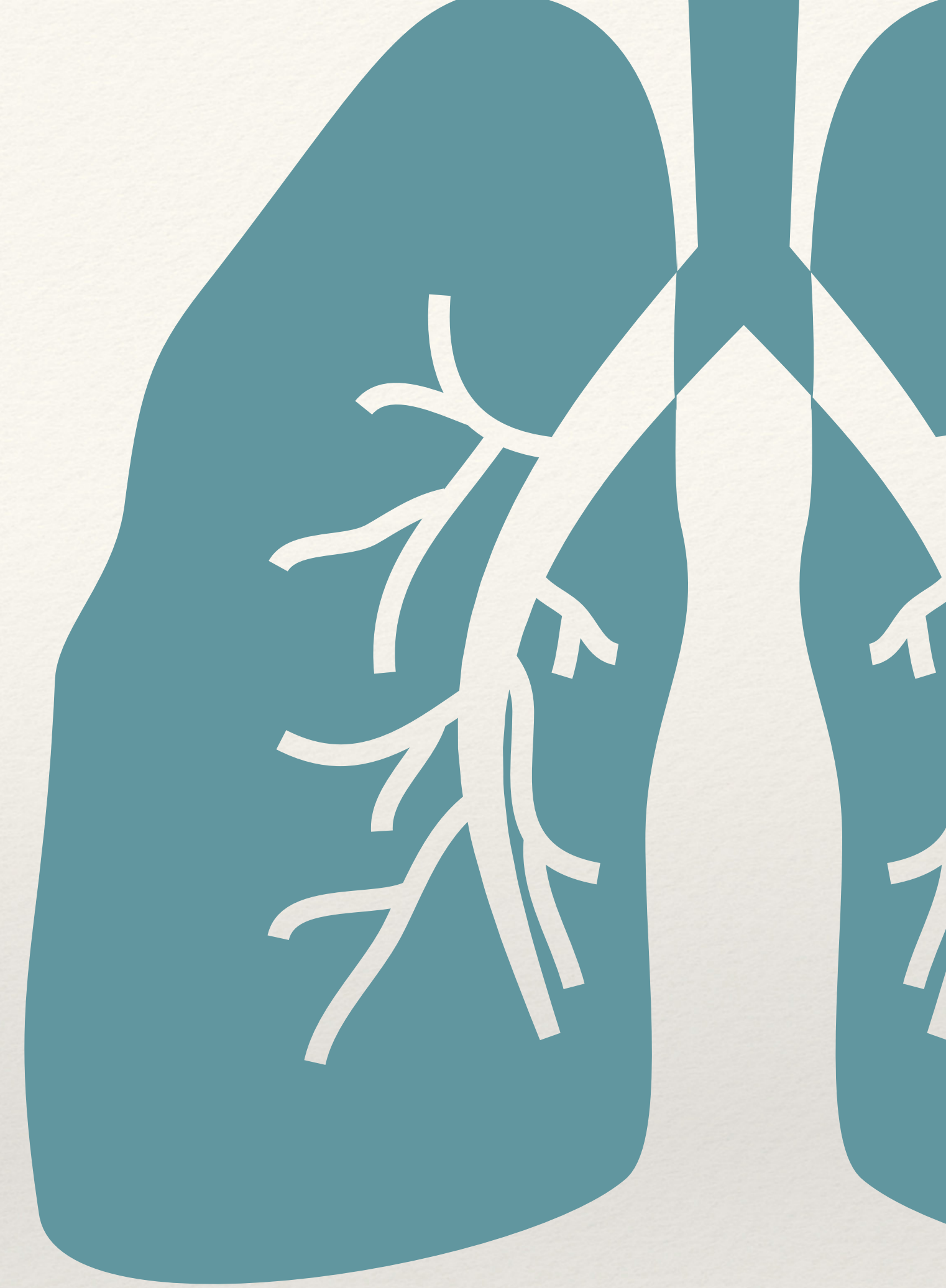
Case Study



What is Pneumonia?

"Pneumonia is an infection in one or both lungs. It can be caused by bacteria, viruses, or fungi. Bacterial pneumonia is the most common type in adults."

Source: [Healthline](#)



What is Pneumonia?

Pneumonia is the **single largest infectious** cause of death in children **worldwide**.

Source: World Health Organisation / UNICEF

16% of deaths in children under 5 years old

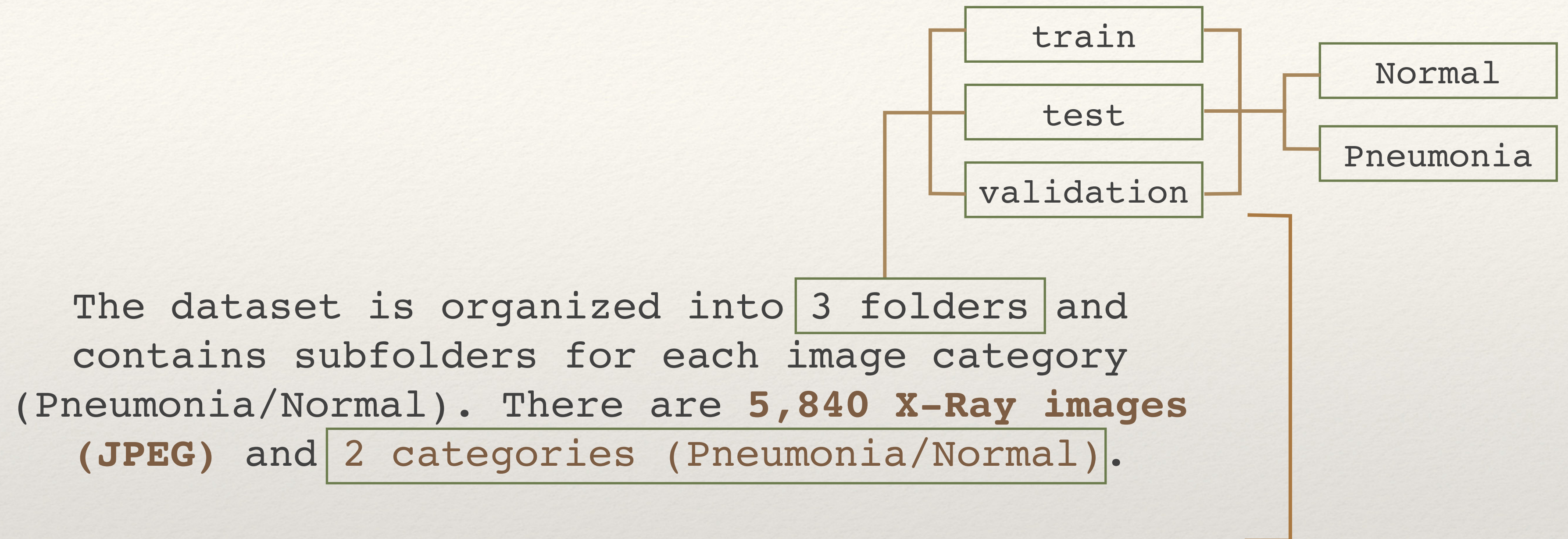
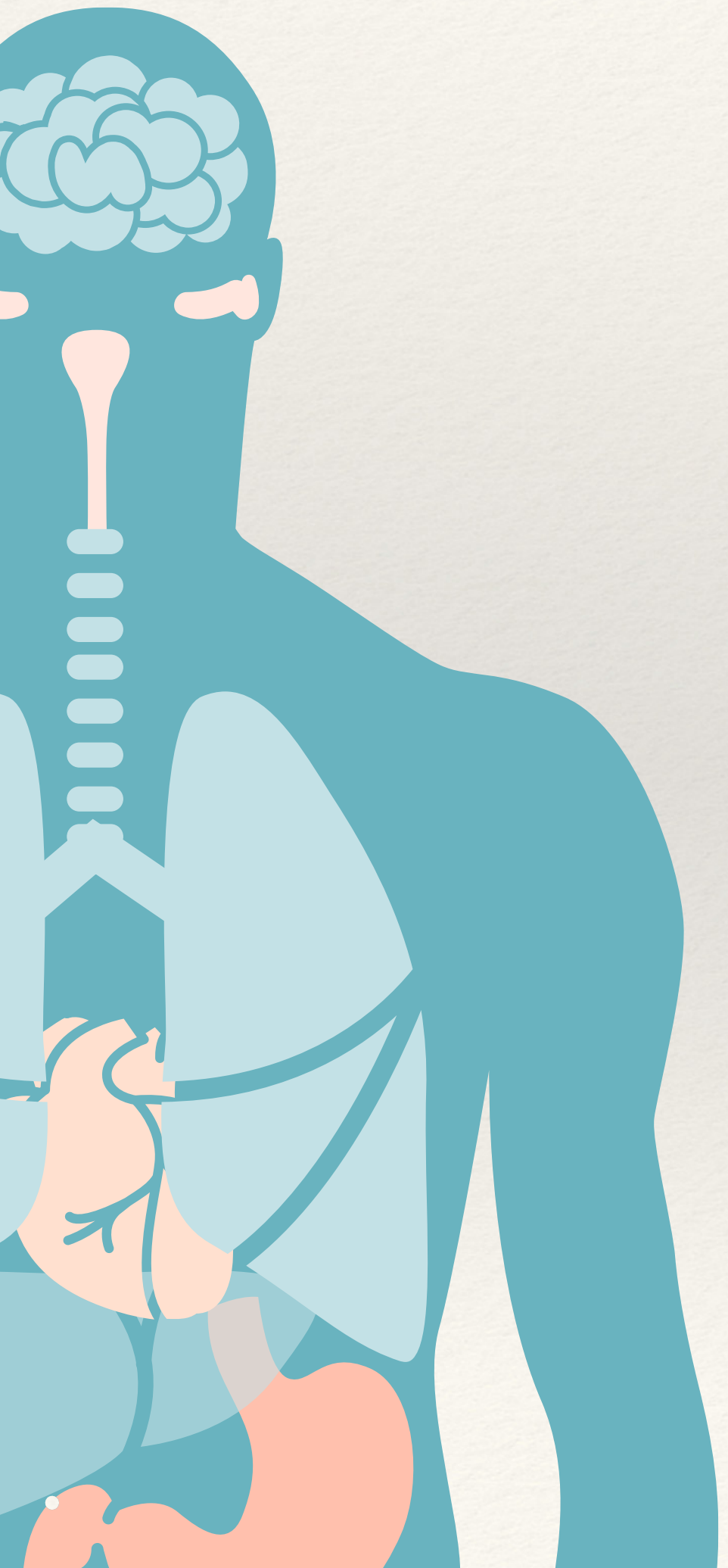
~2,400

people killed everyday

880,000

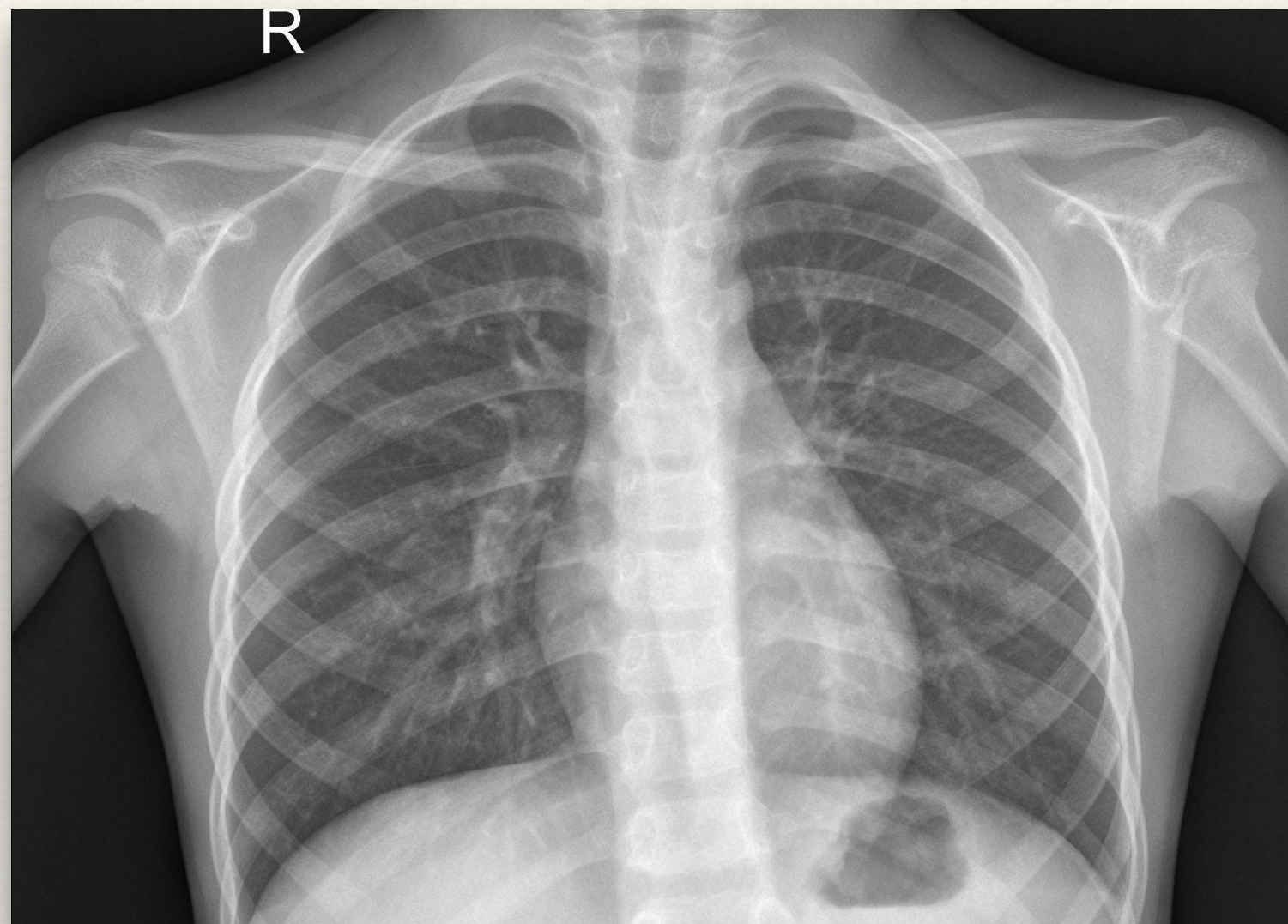
children killed in 2016

Brief Overview

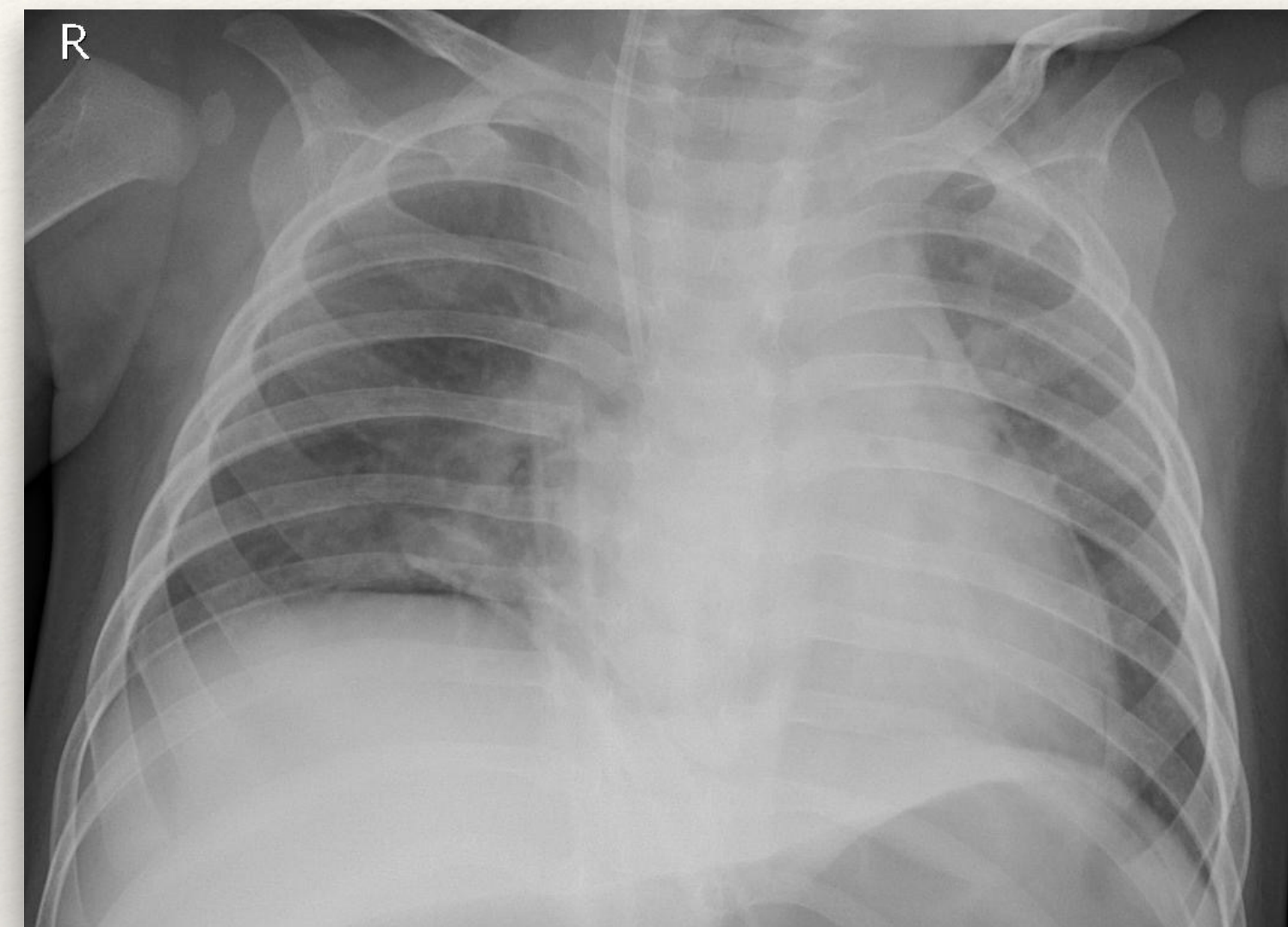


Source: Chest X-ray Images (Pneumonia)

Types: Binary Classification



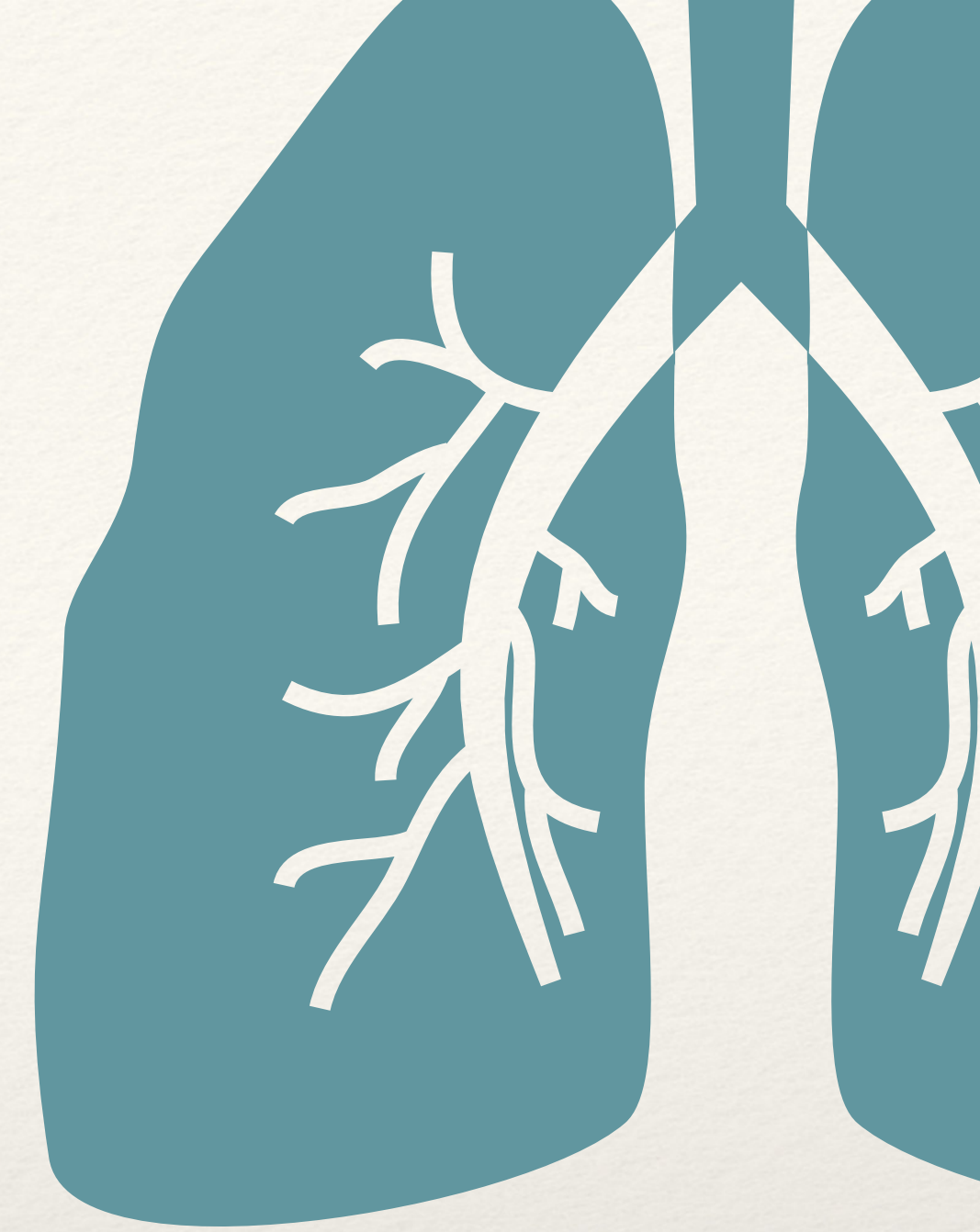
Normal



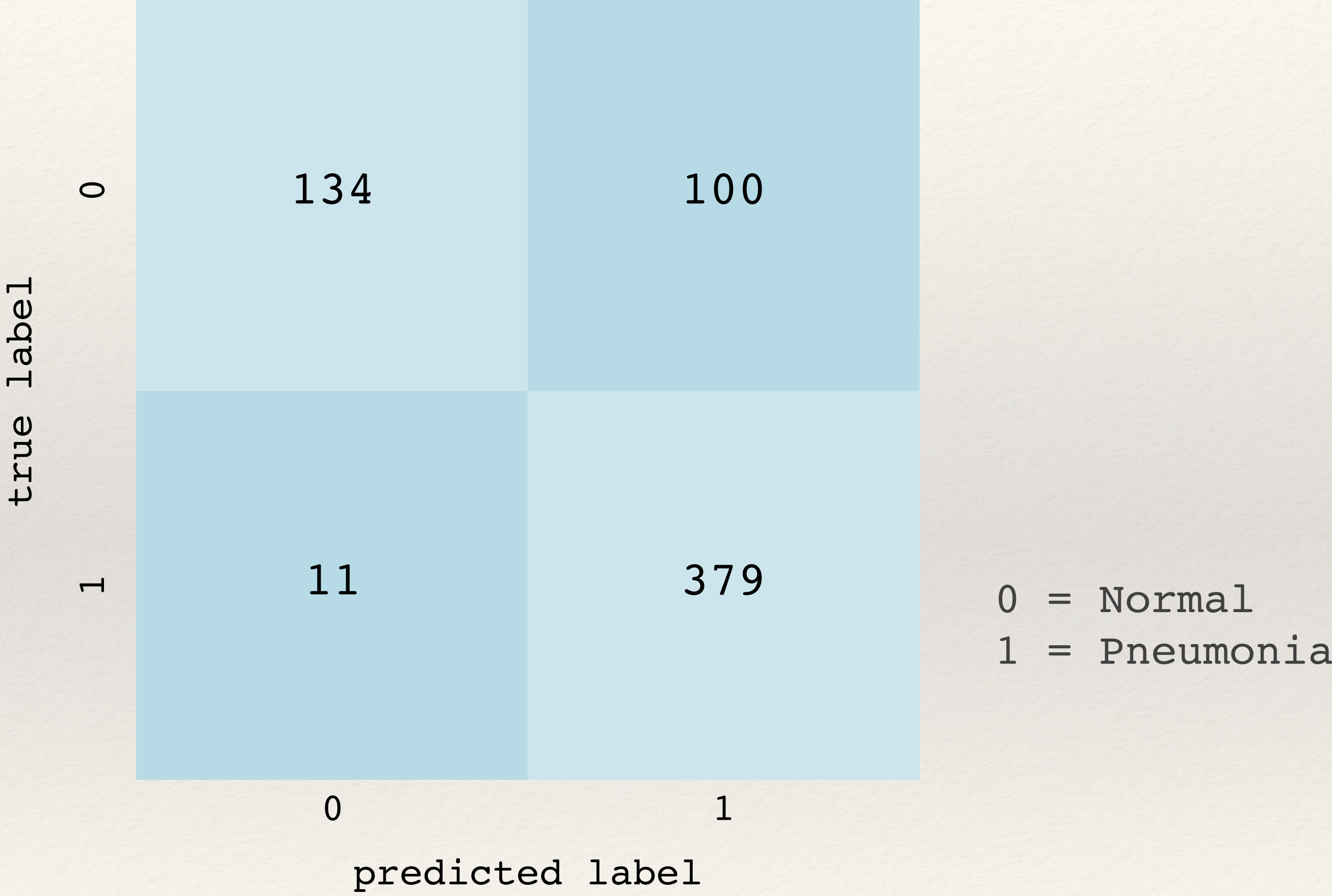
Pneumonia



The Code

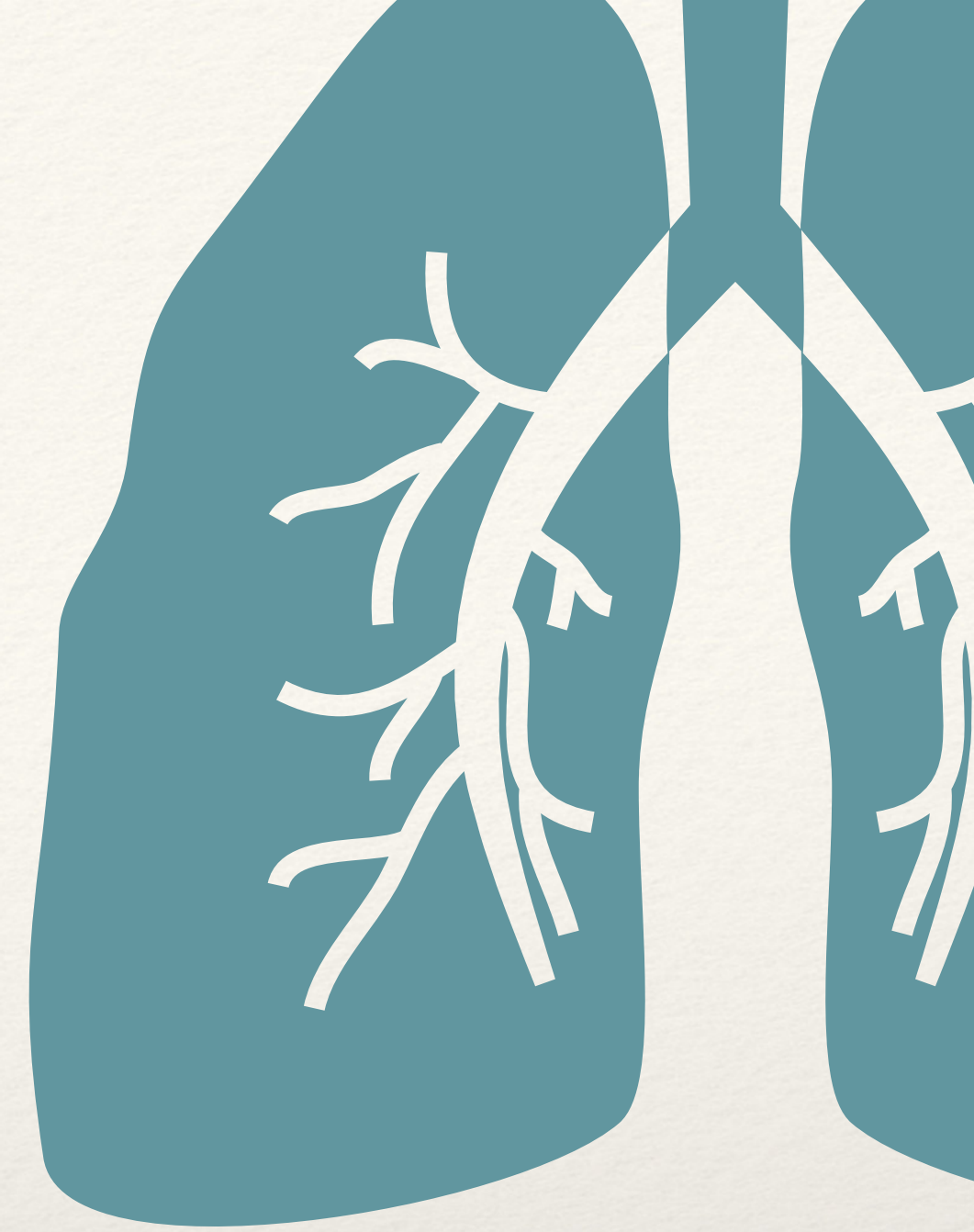


Confusion Matrix



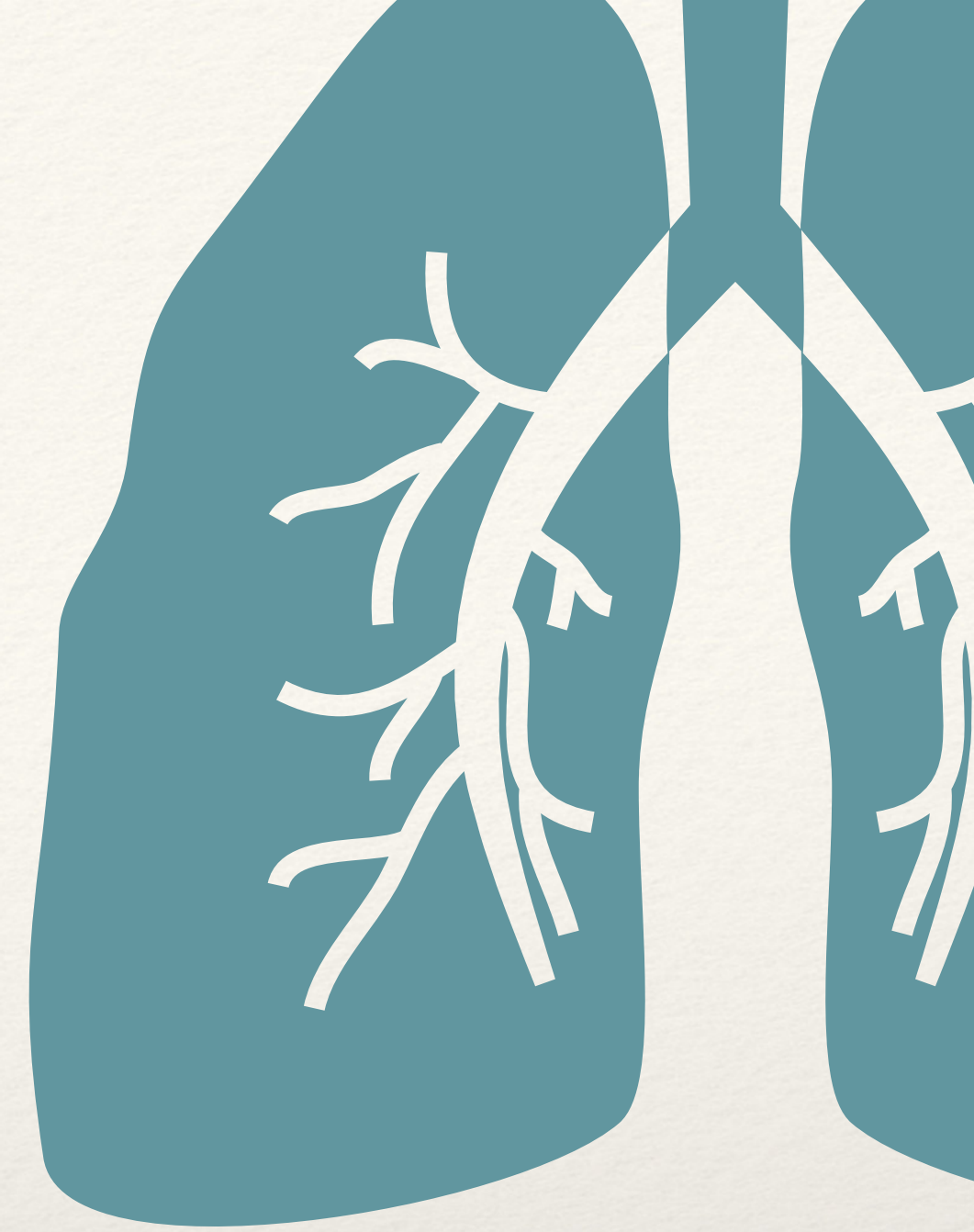


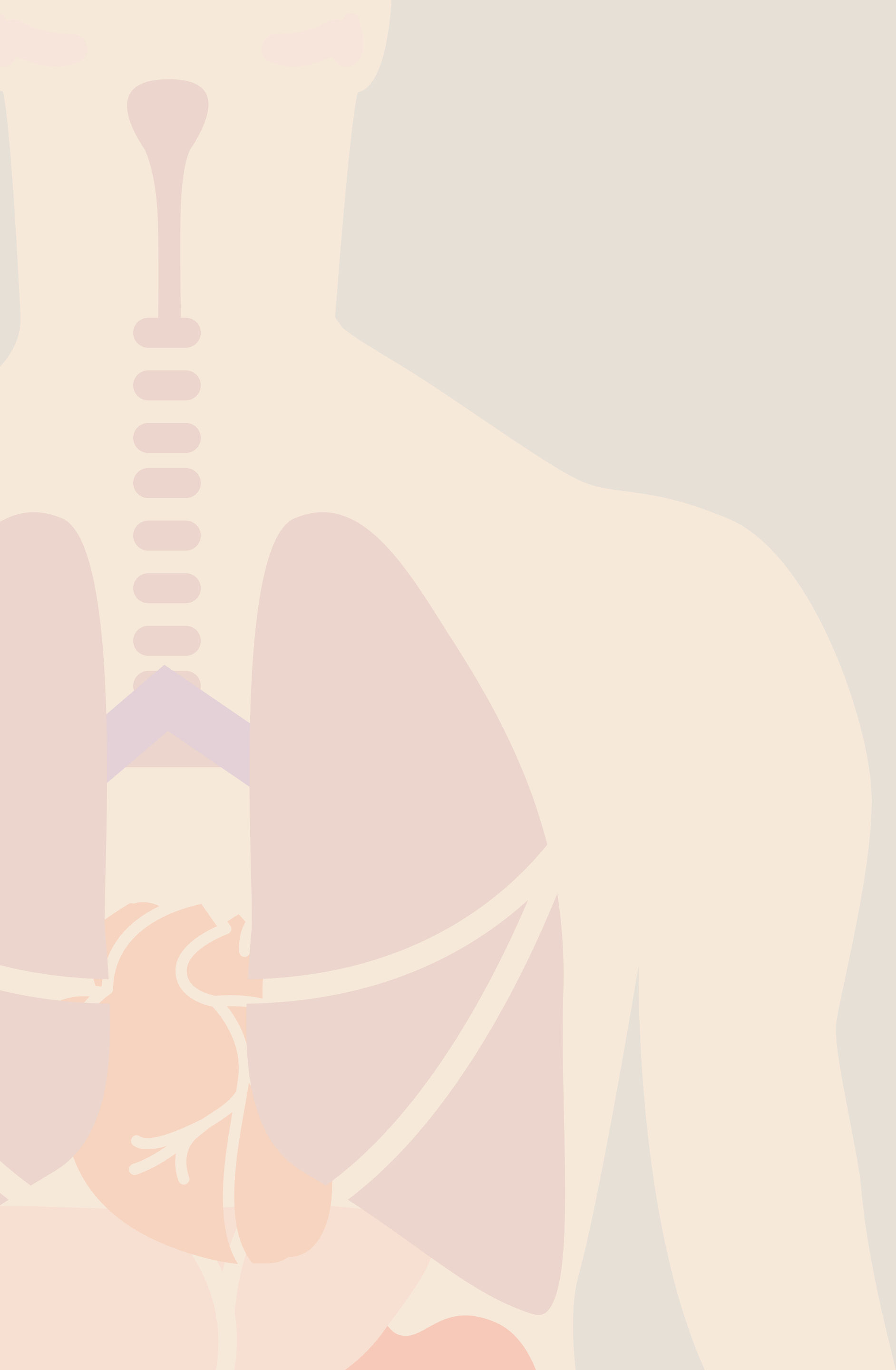
The Code





Problems Faced





```
# Python
import tensorflow as tf
thankyou = tf.constant('thank you')
less= tf.Session()
print(sess.run(thankyou))
```

“THANK YOU”

謝謝 | terima kasih | ขอขอบคุณ | شكرا | धन्यवाद
