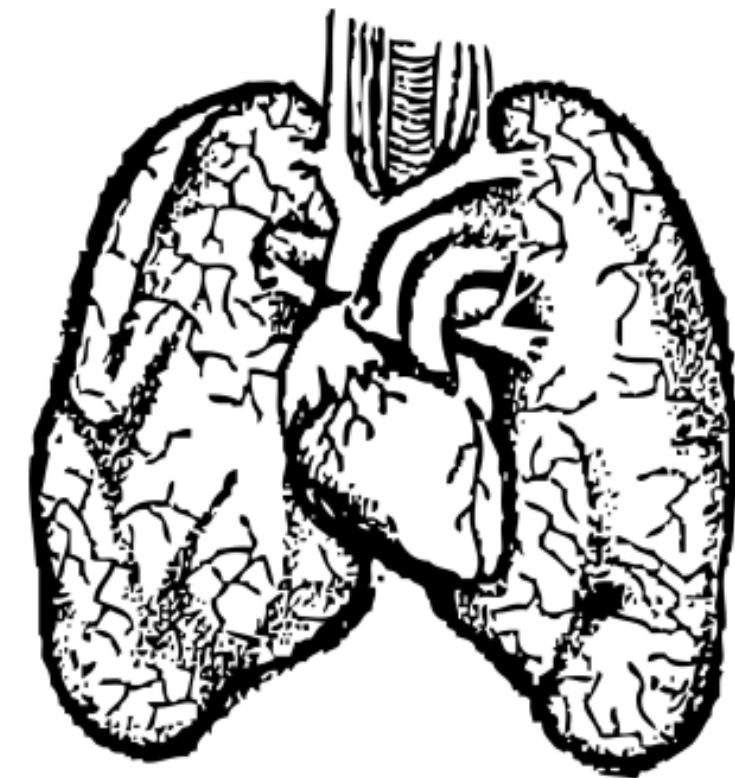


2022 MICROSOFT IMAGINE CUP

PnCheck

Improving AI-health service by detecting Pneumonia
in X-ray images using Azure and TensorFlow



PNCHECK

A young child with dark hair is lying in a hospital bed, looking towards the camera. They are wearing a clear nasal cannula and holding a clear plastic water bottle. Medical equipment, including a blue and white ventilator and green tubing, is visible in the foreground and background. The background is a plain, light-colored wall.

Pneumonia

Pneumonia is the world's leading cause of death among children **under the age of 5**, accounting for **16% of all children deaths**, killing approximately **2,400 children a day**.

Diagnosing Pneumonia

1

Based on symptoms

- Chest pain when you breathe
- Cough which may produce phlegm


2

Based on chest X-rays

- Only very few medical professionals are qualified




Chest X-ray Dataset



Dataset

Chest X-Ray Images (Pneumonia)
5,863 images, 2 categories

 Paul Mooney • updated 4 years ago (Version 2)

Data

Code (1,341)

Discussion (49)

Activity

Metadata

Download (1 GB)

New Notebook

Usability 7.5

License Other (specified in description)

Tags online communities, health, biology, image data, medicine

Description

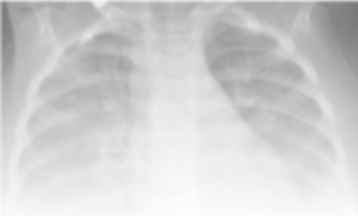

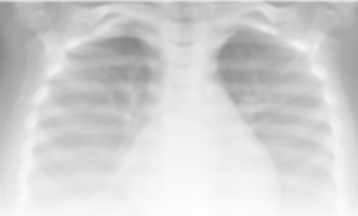
Context

[http://www.cell.com/cell/fulltext/S0092-8674\(18\)30154-5](http://www.cell.com/cell/fulltext/S0092-8674(18)30154-5)

Normal

Bacterial Pneumonia

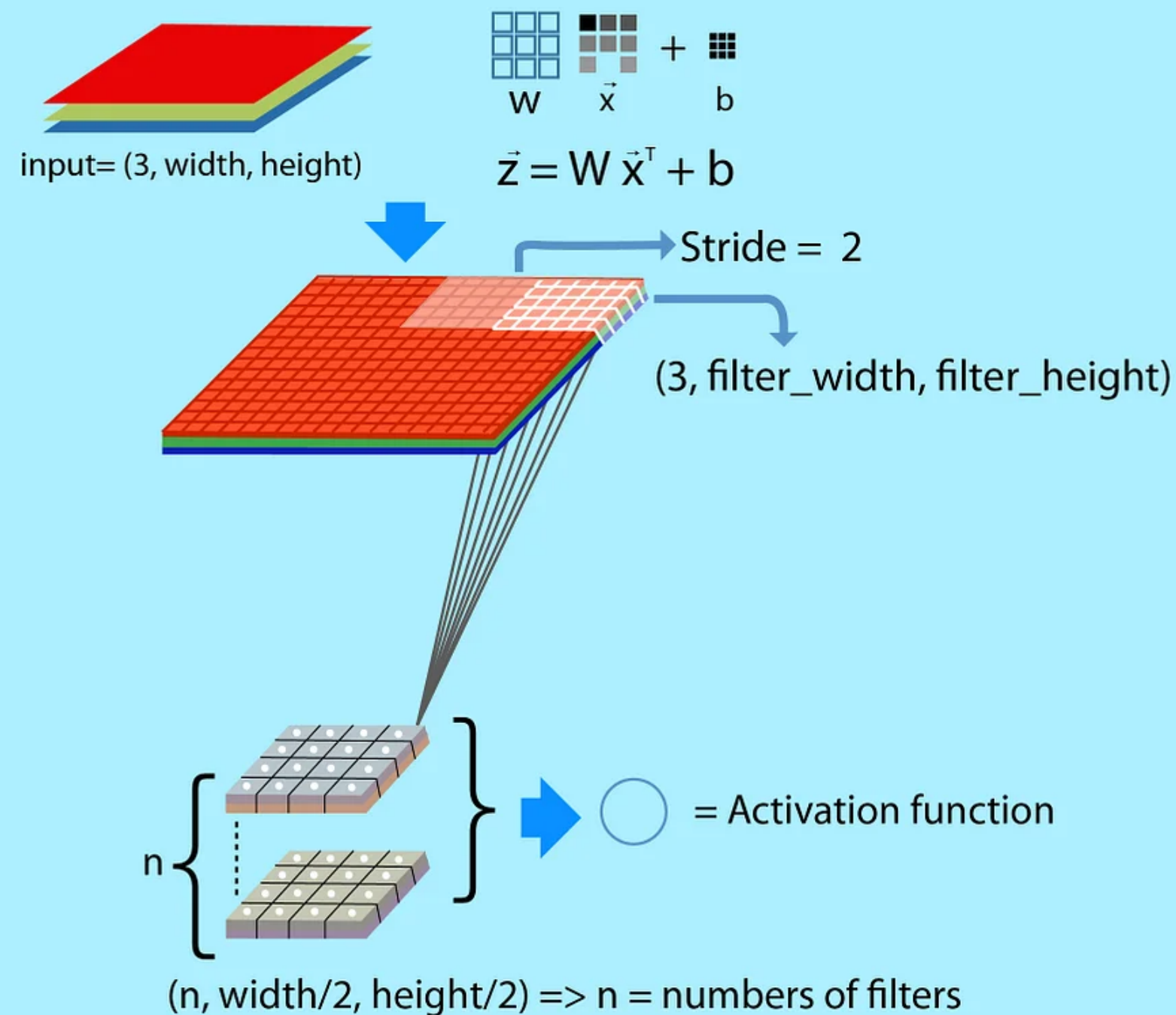
Viral Pneumonia

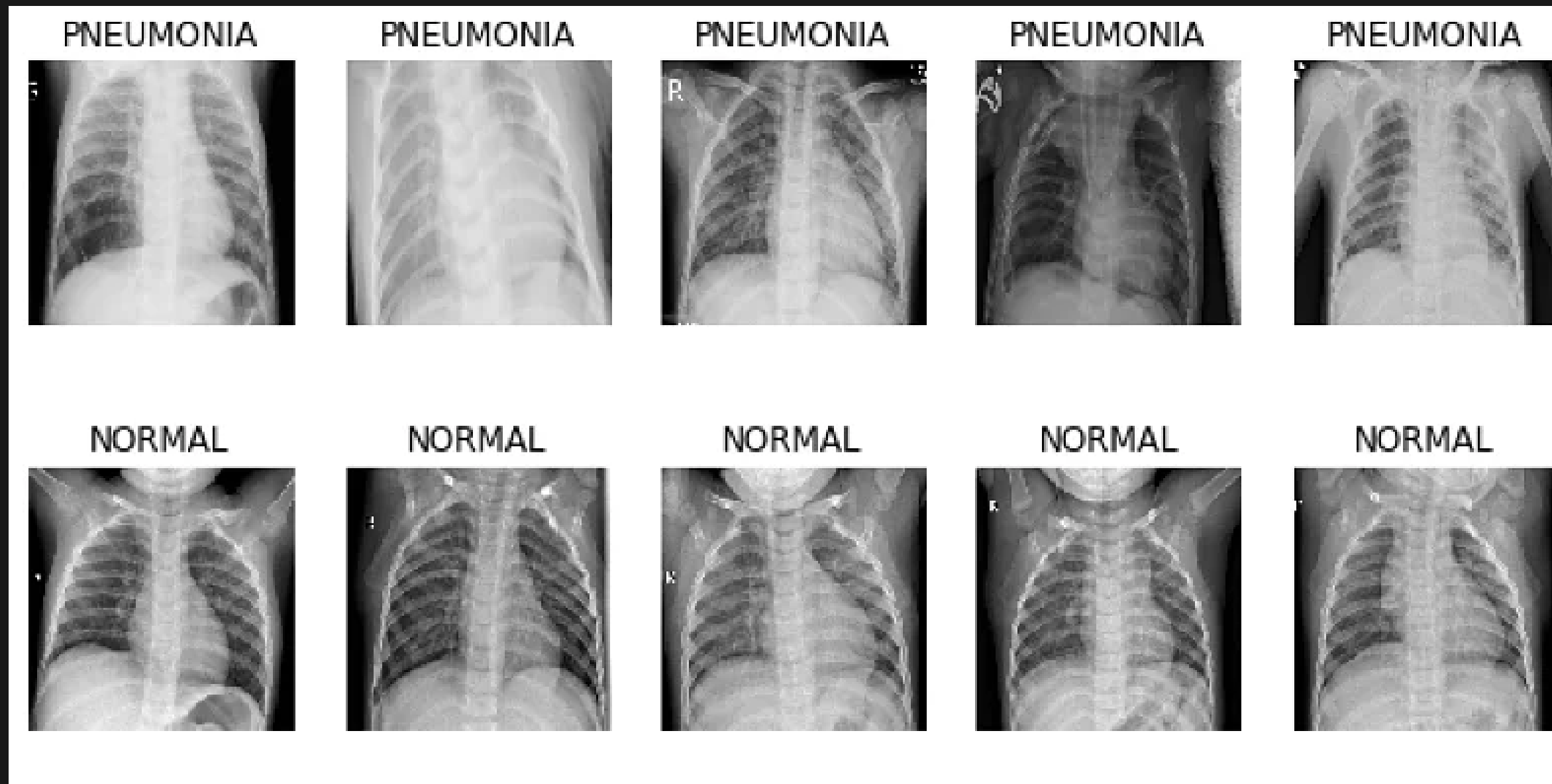


Normal: 1,583
Pneumonia: 4,273

Convolution Neural Network

Convolution with Images

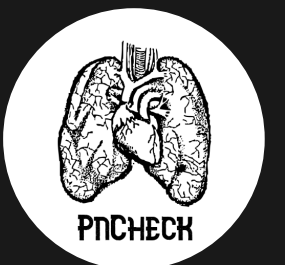
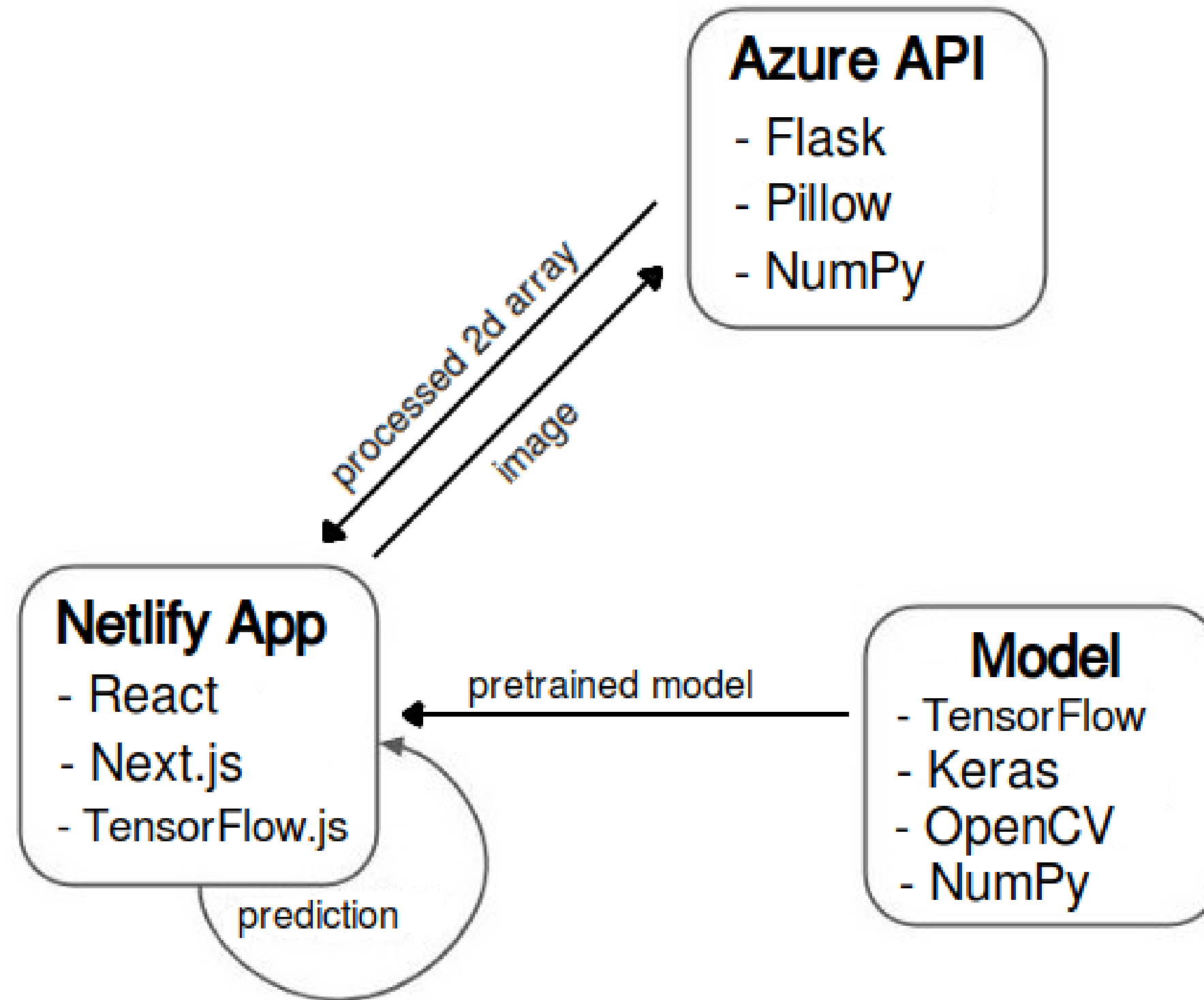




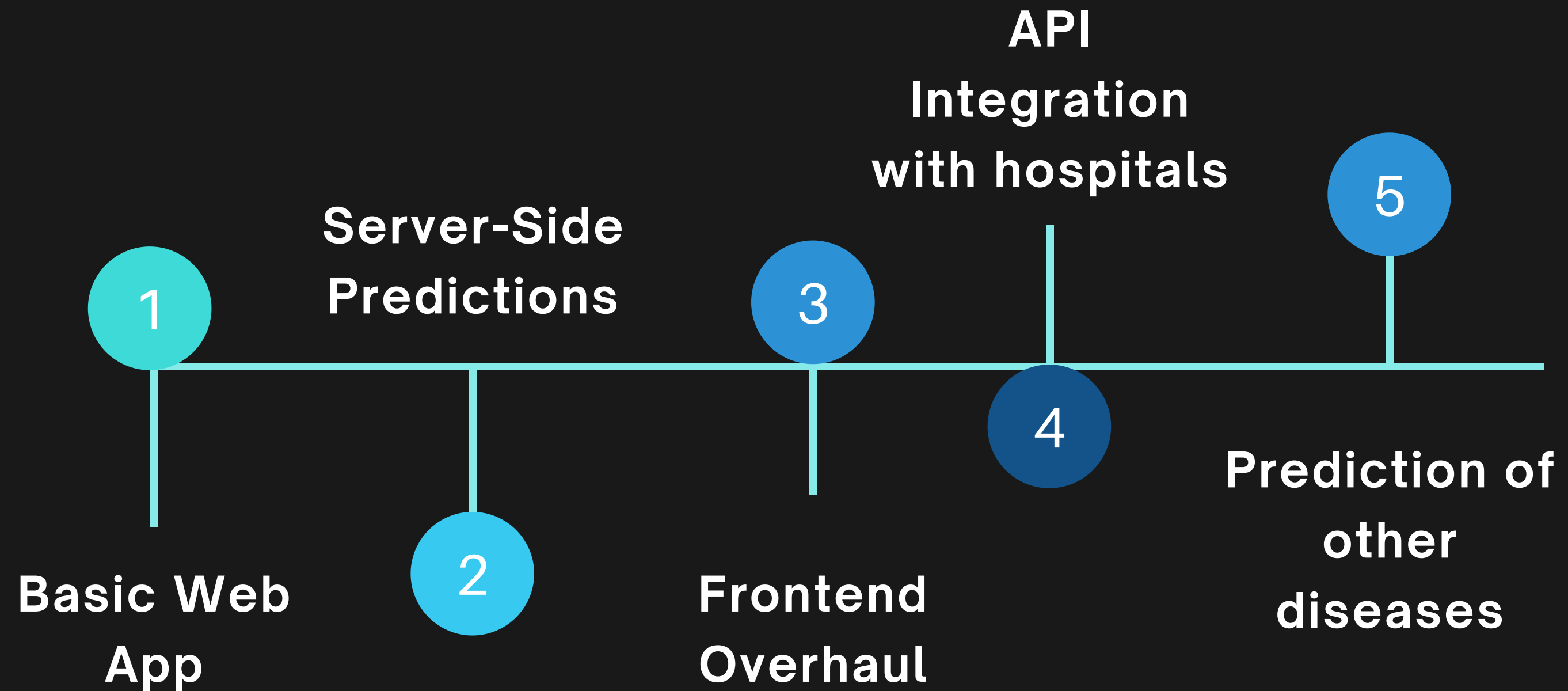
Accuracy : 95.14%

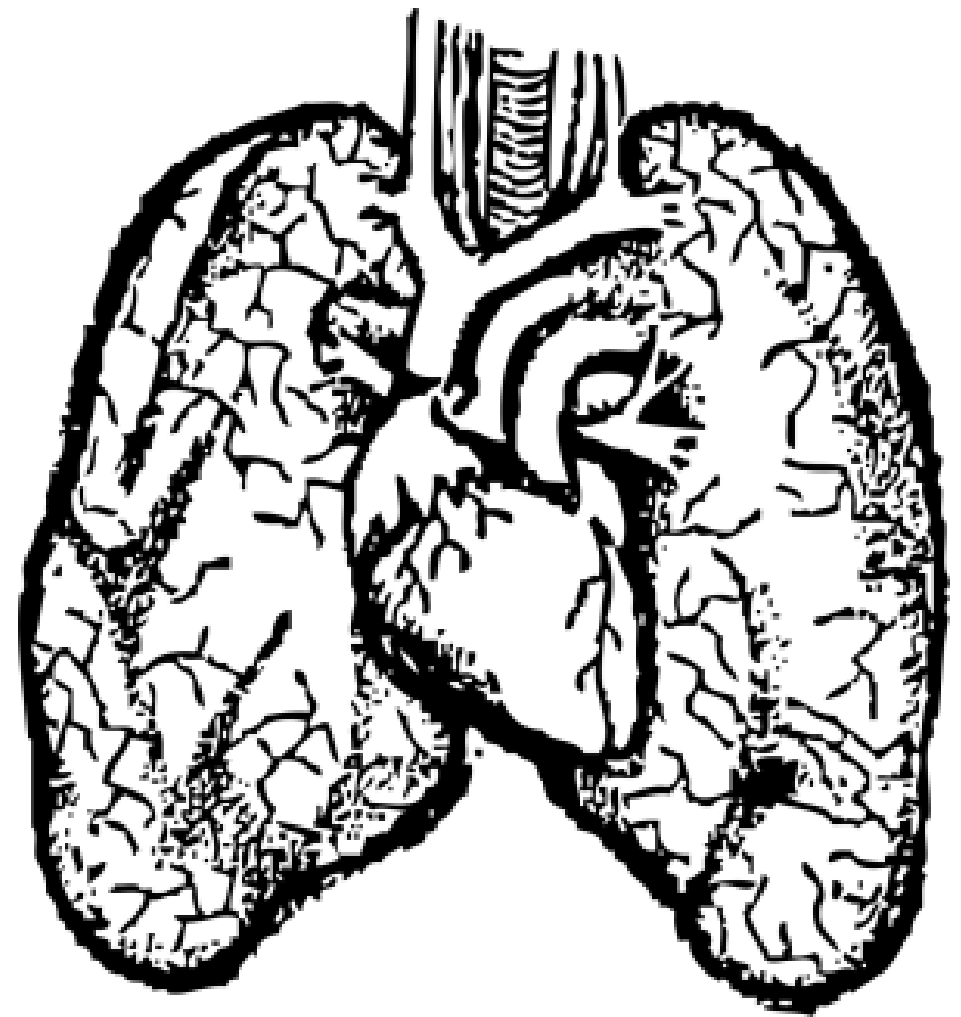


Architecture



Milestones





PNCHECK