

# Group 6: Detecting Pneumonia with Deep Learning

Our project focuses on using deep learning to detect pneumonia in chest X-rays, aiding early and efficient diagnosis.

# Dataset Exploration

1

Explored X-ray images

Categorized as 'NORMAL' and 'PNEUMONIA.'



Made with Gamma

# Data Preparation

Balanced and split data

For training and testing.

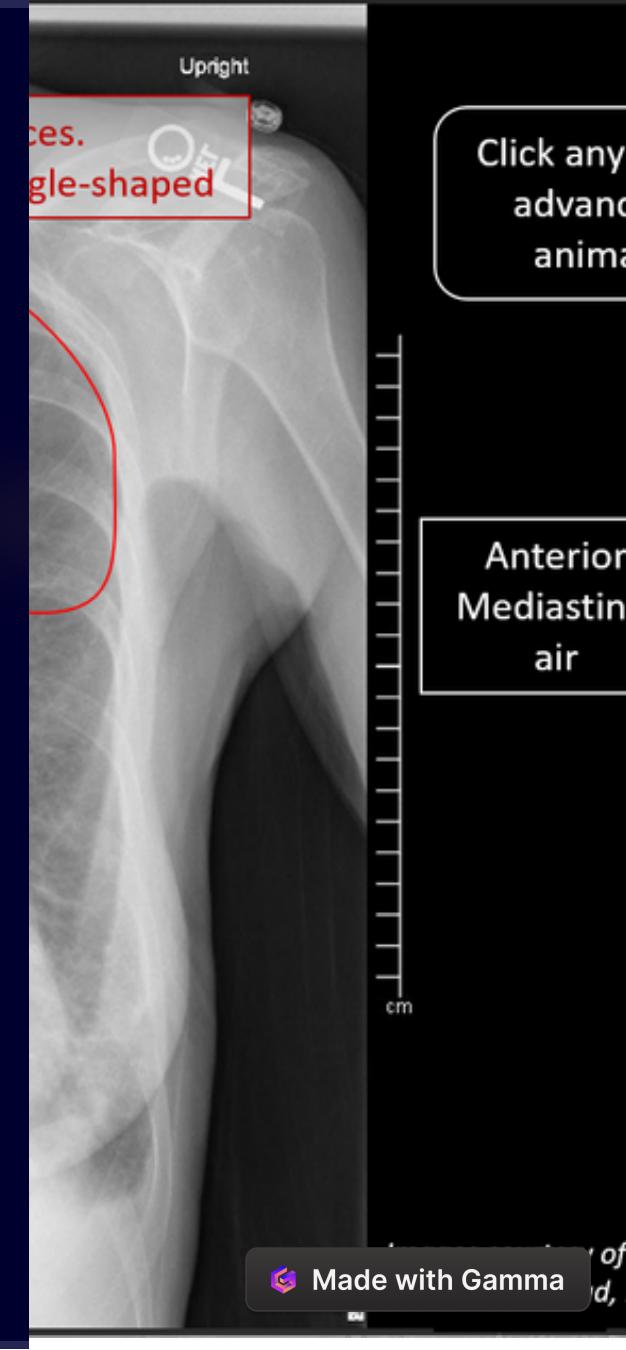
Created a validation set

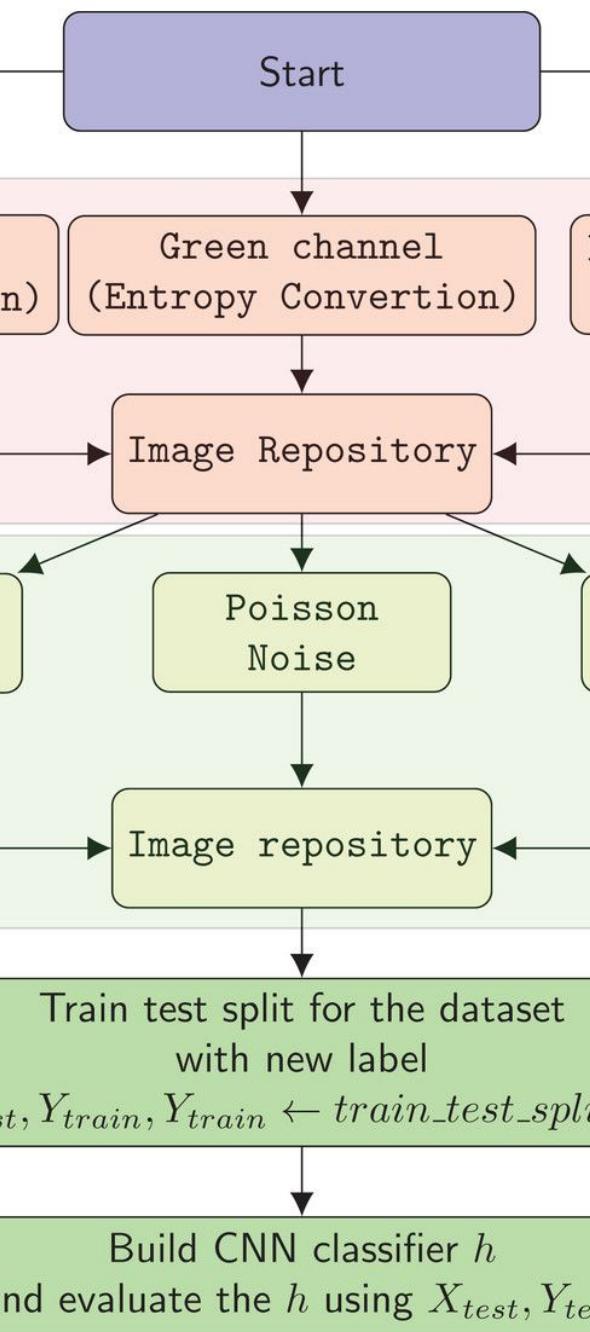
For model generalization.

# Image Characteristics

## ① Observed variations in image sizes

Prompting standardization through resizing.





# Data Augmentation



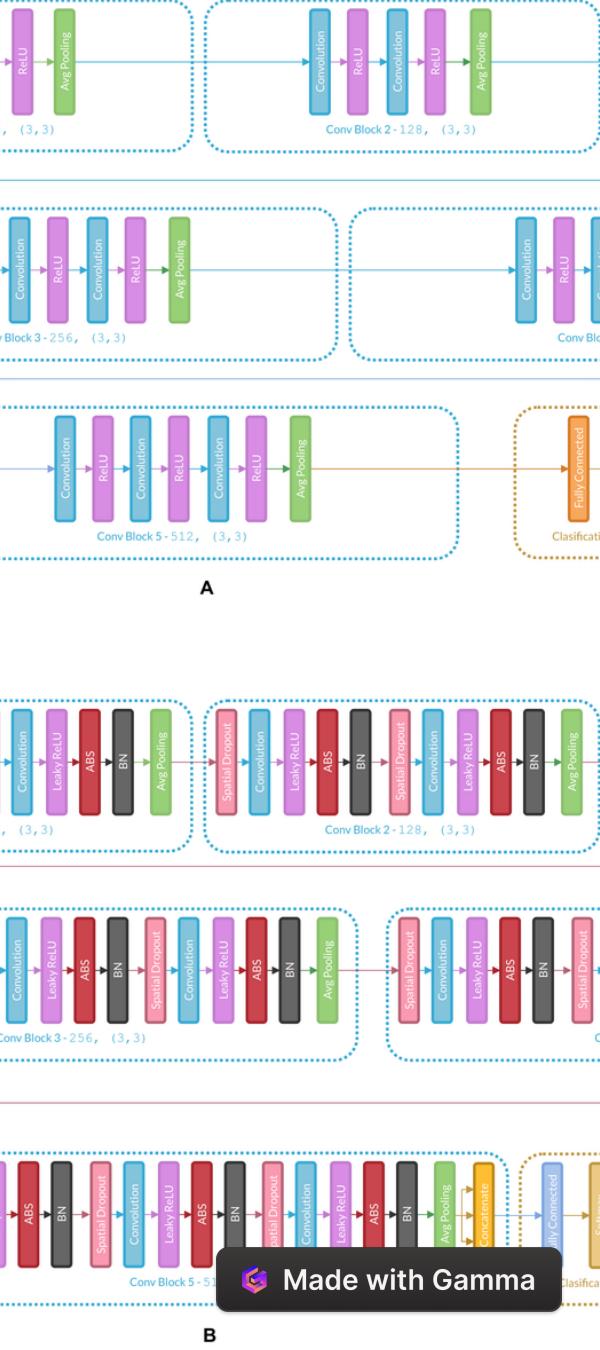
Applied augmentation techniques

For model robustness.

# Model Selection

Chose VGG16

For image classification, leveraging transfer learning.



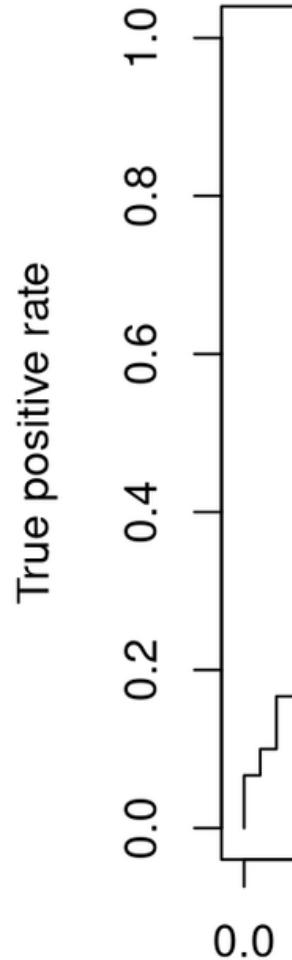
# Model Training and Evaluation

## Baseline Model (VGG16)

Achieved an impressive 88.16% accuracy on the test set.

## Second Model (VGG19)

Explored VGG19 for grayscale X-ray images, achieving 81.58% accuracy.



# Visualizations and Results

1

Included accuracy/loss plots

And a confusion matrix heatmap.