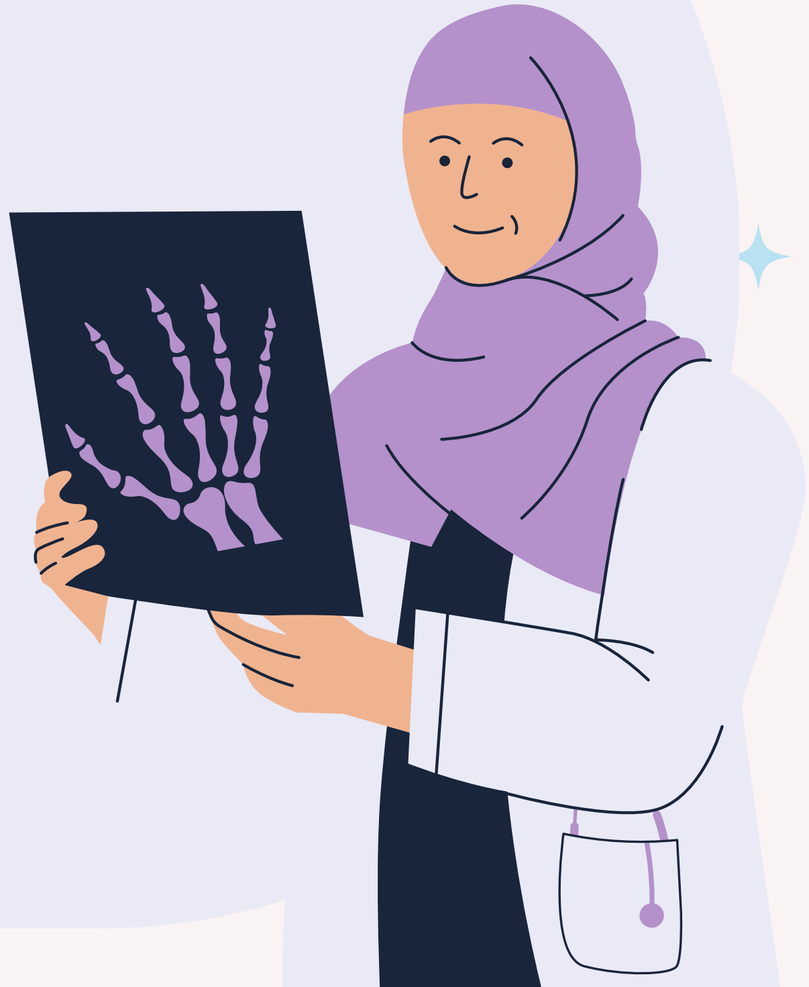
By Maha Qaiser

Pneumonia Detection

Main Idea

Problem Statement

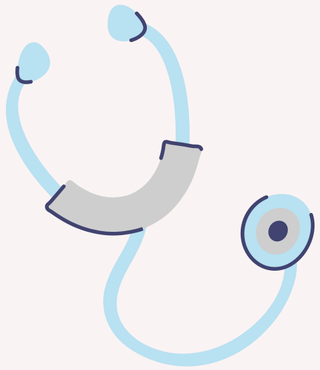
Pneumonia is a serious lung infection that can be diagnosed through chest X-ray imaging. In this project, you will build an AI model capable of detecting pneumonia from X-ray images using deep learning. The aim is to explore how computer vision techniques can assist radiologists in diagnosing pneumonia accurately and efficiently.



Model Development

Custom CNN: A scratch-built convolutional network
Transfer Learning: Using ResNet50 as a base model

Results and Evaluation



Challenges & Lessons:
Remember to always check the shape of the data and work accordingly

Custom CNN Evaluation

	precision	recall	f1-score	support
NORMAL	0.95	0.71	0.81	234
PNEUMONIA	0.85	0.98	0.91	390
accuracy			0.88	624
macro avg	0.90	0.85	0.86	624
weighted avg	0.89	0.88	0.87	624

Confusion Matrix:
[[167 67]
[9 381]]
20/20 ━━━━━━━━━━━━━━━━━━━━ 14s 518ms/step

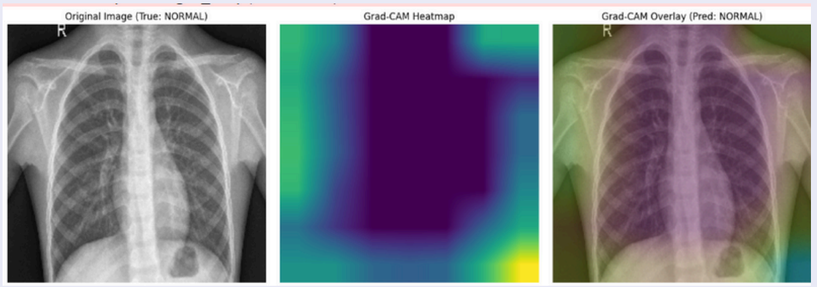
ResNet50 Evaluation

	precision	recall	f1-score	support
NORMAL	0.81	0.79	0.80	234
PNEUMONIA	0.88	0.89	0.88	390
accuracy			0.85	624
macro avg	0.85	0.84	0.84	624
weighted avg	0.85	0.85	0.85	624

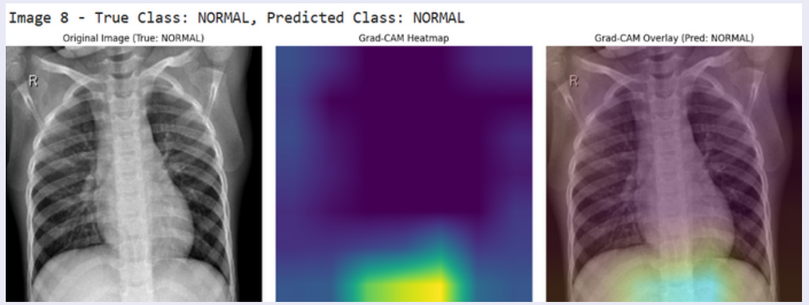
Confusion Matrix:
[[185 49]
[42 348]]

Visual Examples

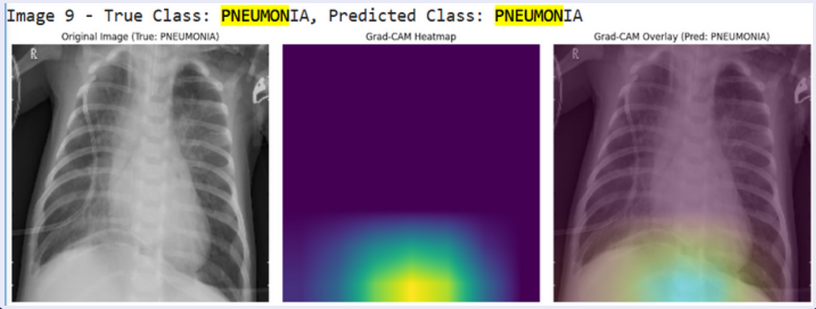
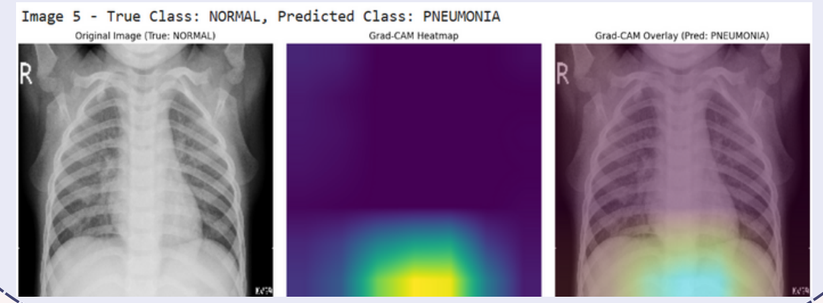
Example 1



Example 2



Example 3



Example 4