

Chest X-Ray Classification

You're the Data Scientist Behind the Diagnosis

You just started your internship at a healthcare startup working with local hospitals. On your first day, you're handed a folder labeled: "Urgent – Chest X-ray Analysis." Inside are thousands of anonymized chest X-ray images and a note: "We're working on building an AI system to help detect pneumonia. Can you help us figure out how well our model is working—and how to make it better?"

Your job is to dive into the data and understand how a convolutional neural network (CNN) model is classifying these chest X-rays. You'll analyze the model's architecture, investigate its predictions, and evaluate performance using techniques like confusion matrices and accuracy metrics. The hospital needs something interpretable and trustworthy—something they can eventually use to help save lives.

Your Mission

You'll explore a real-world deep learning pipeline using **EfficientNetV2S**, a state-of-the-art image classification model. This case study will guide you through analyzing preprocessed medical images, understanding CNN predictions, and suggesting improvements.

Your final deliverable will be a **short case study** reflecting your findings and insights. Think of it as building a diagnostic aid that future patients—and doctors—will benefit from.