Pneumonia Detection Project Submission

# 1. Data Source & Data Link

Dataset Name: Chest X-ray Images (Pneumonia)

Source: Kaggle

Link: https://www.kaggle.com/datasets/paultimothymooney/chest-xray-pneumonia

Description:

This dataset contains 5,863 chest X-ray images (JPEG) categorized as:  
- Normal (no pneumonia)  
- Pneumonia (bacterial or viral)  
  
The dataset is divided into three folders:  
- train (5216 images)  
- val (16 images)  
- test (624 images)  
  
These images are X-rays of pediatric patients and are used to classify whether pneumonia is present or not.

# 2. Libraries Required for the Project

Below are the Python libraries used for building and evaluating the pneumonia detection model:

* Core Libraries:
* - os – File path handling
* - numpy – Numerical operations
* - PIL (Pillow) – Image loading and processing
* - matplotlib – Visualization
* - seaborn – Plotting the confusion matrix
* - tkinter – GUI-based image file browsing
* Machine Learning & Deep Learning:
* - torch – PyTorch deep learning framework
* - torchvision – Pre-trained models (EfficientNet / DenseNet), image transforms, datasets
* Evaluation:
* - sklearn.metrics – Accuracy, classification report, and confusion matrix