itsyourgirlnicky /
Chest-Xray

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📖 **README**   ✎   ☰

IMAGE CLASSIFICATION OF CHEST X-RAY IMAGES FOR PNEUMONIA DETECTION

INTRODUCTION

The "Large Dataset of Labeled Optical Coherence Tomography (OCT) and Chest X-Ray Images" is a comprehensive collection of medical images, published on June 2, 2018, by contributors Daniel Kermany, Kang Zhang, and Michael Goldbaum. This dataset, now in its third version, aims to support advancements in medical diagnosis through deep learning. 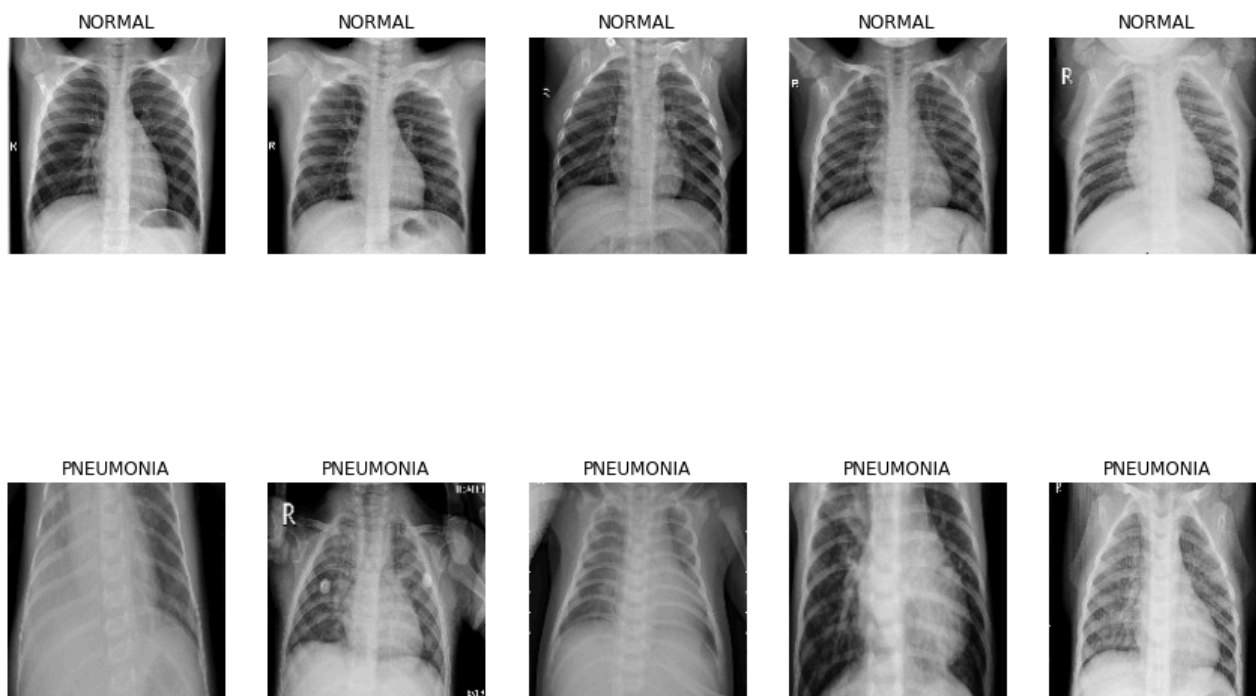It includes thousands of validated images, crucial for developing and testing algorithms that can identify and diagnose medical conditions from OCT and Chest X-Ray images, thus enhancing the accuracy and efficiency of medical diagnostics.The readme file in the dataset zip gives a detailed information on how to set up the data provided

BUSINESS UNDERSTANDING

In healthcare, accurate and efficient disease diagnosis is vital. The project supports the development of deep learning algorithms to improve diagnostic accuracy and efficiency. This leads to better patient outcomes, reduced costs, and scalable, high-quality care. Integrating these advanced models into diagnostics marks a strategic shift towards data-driven, affordable healthcare solutions.

PROBLEM STATEMENT

Early detection and treatment of pneumonia are crucial for preventing complications and improving clinical outcomes, given its significant impact, particularly on children under five. Pneumonia is a leading cause of mortality in this age group, responsible for 14% of all deaths, according to the World Health Organization. Although chest X-rays are a common diagnostic tool, interpreting these images can be challenging due to the subtle and overlapping symptoms of pneumonia with other respiratory conditions. This project aims to develop a deep learning model to accurately detect pneumonia from chest X-ray images, providing healthcare professionals with a faster and more precise diagnostic tool. This technology will help radiologists improve diagnostic accuracy and enhance patient care and treatment outcomes.

OBJECTIVES

MAIN OBJECTIVE

To develop a deep learning model to classify chest x-ray images.

SPECIFIC OBJECTIVES

i. Explore and Implement Deep Learning Architectures.Investigate and apply various deep learning models to determine the most effective architecture for pneumonia detection.

ii. Train the Selected Model.Use the prepared dataset to train the deep learning model, employing techniques

Releases

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Contributors 2

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Languages

● **Jupyter Notebook** 100.0%