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**Detecting the Type of Pneumonia disease in Chest  
X-ray by using Image Processing**

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## **Abstract**

In the modern world, humans have to face unexpected, uncontrollable diseases. Among those diseases Pneumonia is a common lung infection in the world that cause by the different organisms including viruses, bacteria, and fungi. In each year this curable disease causes the death of more than 800,000 children under the age of five. Therefore, to avoid these serious situations such as death, early diagnosis and treatments are highly important. The radiologists analyze the chest X-ray images and examine the range of the disease that has infected. In this case, only the experienced doctors can identify pneumonia disease in chest x-rays. Therefore, the accuracy and the correctness of the diagnosis is the severe problem for doctors. In remote areas, the lack of health facilities and the not enough experienced radiologists to analyze chest x-rays also affect this widespread pneumonia disease throughout the world. Because of this challenge, the need for a highly accurate automated system for pneumonia detection is increased. Because of that, this research project aims to develop a novel recommendation architecture that will achieve the most accurate, effective, and worth automated system to detect the pneumonia disease and the variety of organisms including viruses, bacteria and fungi that caused the infection.

**Keywords:** Pneumonia Detection System, Pneumonia Disease, Image Processing, Data Science