



**SET5001 - SCIENCE, ENGINEERING AND TECHNOLOGY PROJECT - II**

***TITLE***

# **CONVOLUTIONAL NEURAL NETWORK TO DETECT DISTINCT TYPE OF PNEUMONIA**

***Done by,***

**22MCA0137- KANISHK SHARMA**

**22MCA0174 - UDDASHAY KUMAR GUPTA**

**22MCA0343 - INDRANIL SARKAR**

***Under The Guidance Of***

**PROF. JAGDEESAN S.**

**Abstract:** Pneumonia is an infectious disease which affects one or both lungs. Pneumonia can be caused by bacteria as well as virus. The common practice to detect using CT scan or x-ray scans of chest. But it needs an expert eye to distinguish between different types of pneumonia. The disease spreads so rapidly, it needs to be detected earlier in remote areas. A recent boom in the development of Deep Convolutional Neural Network and its performance in classifying Medical Imaging suggests the task needs to be automated. In this research ResNet-50 has been employed as feature-extractor for the experiment and proposed a novel Deep Convolutional Neural Network as classifier to detect if the patient has pneumonia and further classify if it is caused by bacteria or virus. The dataset is divided into three directories, on the basis of the cause of the disease- Normal, Bacteria, Virus. The performance metrics for the evaluation of the proposed model consists of Specificity and Sensitivity.

**Keywords:** Pneumonia, Bacterial infection, virus infection, transfer learning

## Work Plan

TASK	DESC	START DATE	END DATE
Module 1	Abstract	12-03-2023	17-03-2023
Module 2	Study on ResNet-50 & literature survey	18-03-2023	28-03-2023
Module 3	Implementation of basic CNN architecture	29-03-2023	10-04-2023
Module 5	Optimization (fine-tuning) and performance analysis	10-05-2023	18-05-2023
Module 8	Conclusion and future enhancement	19-05-2023	25-05-2023
Module 9	Uploading Final Draft of the Research Paper	25-05-2023	26-05-2023