

CS5720 Neural Networks & Deep Learning

Project(CRN: 23259)

PROJECT PROPOSAL

**TITLE : PNEUMONIA LUNGS DISEASE PREDICTION WITH DEEP
LEARNING**

Team

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PNEUMONIA LUNGS DISEASE PREDICTION WITH DEEP LEARNING

ALGORITHM: ALGORITHM DEEP LEARNING

ALGORITHM: CONVOLUTIONAL NEURAL NETWORKS (CNNs)

Problem Description

Pneumonia is a respiratory disease found in the human body and it was named Pneumonia lung disease. In this work, we take the Pneumonia affected patient records and pass them into the deep learning algorithm. The different types of attributes based on Pneumonia are taken and passed to the algorithm.

The data is being analyzed based on the lung breathing capacity, body temperature, oxygen level, blood pressure and other symptoms, the predicted result of the status is displayed as positive or negative. The predicted result of status is displayed as recovered, or hospitalized. The predicted result of symptoms is displayed as very high, high, moderate, low, or very low and the accuracy is being calculated.

The data is being analyzed based on the age of a child, adolescence, adult and senior adult and the output is predicted as to which kind of age group Pneumonia affects the most.

The data is being analyzed based on the other diseases that are related to Pneumonia using the deep learning algorithm and predicts the output.

The problem is based on the sector, where the hospitals want to predict Pneumonia depending upon the medical reports of the patients using a deep learning algorithm, it classifies and divides the data into segments and each segment contains only one kind of data that is whether the person is suffering from Pneumonia or not.

Project Execution plan:

The objective of Pneumonia detection is to detect the Pneumonia news in the patient records. In this work, the dataset containing the Pneumonia will be taken into consideration. The pre-processing will be applied to the dataset and the noisy and null value data will be removed from the dataset. After that, the data will be analyzed and visualized for further processing. The machine learning algorithm will be chosen to make the prediction.

Contribution :

The Pneumonia respiratory disease prediction will be the python based application which contributes to finding out the Pneumonia in the patient records. It will help predict Pneumonia in the early stage and to take the medicine at the proper time.

Evaluation:

The project evaluation can be tested with the deep learning algorithm prediction results. Since the deep learning algorithm will be used to predict Pneumonia, the accuracy of the algorithm result will be helpful to evaluate the results. The accuracy score of the algorithm in Pneumonia detection helps to evaluate the dataset.

The application will be developed with Google Collab Python Tool as the project can be directly executed in any type of computer system with an internet connection. There is no need for any specific software to be installed in the user system. The Colab Tool helps to develop and run the application directly inside the cloud server where the Python library files are installed. The machine learning algorithm libraries are built inside the Colab. It helps the project to use the deep learning algorithm in predicting Pneumonia.

References:

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[3]. Zhang J, Xie Y, Pang G, Liao Z, Verjans J, Li W, Sun Z, He J, Li Y, Shen C, Xia Y. Viral Pneumonia Screening on Chest X-Rays Using Confidence-Aware Anomaly Detection. IEEE Trans Med Imaging. 2021 Mar;40(3):879-890. doi: 10.1109/TMI.2020.3040950. Epub 2021 Mar 2. PMID: 33245693.

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