BVRIT HYDERABAD
College of Engineering for Women
Department of Information Technology
Mini Project - Academic Year 2023-24

TEAM 1

# Lung Nodule Detection Using Deep Learning Techniques

Abstract

Lung nodules are small, rounded or oval growths within the lungs which are typically detectable through chest X-rays or CT scans.The primary objective of this project is to develop a machine learning model tailored to automate the identification and categorization of lung nodules within medical images. The primary objective of this project is to develop a machine learning model tailored to automate the identification and categorization of lung nodules within medical images. The workflow encompasses data collection, model development, and training.This initiative seeks to enhance early lung cancer detection and reduce the workload of radiologists. This endeavor represents a significant stride toward bolstering diagnostic capabilities in the medical field.

Modules

- Data Preprocessing
- Feature Extraction
- Model Building using CNN
- Validating
- Predicting

Architecture
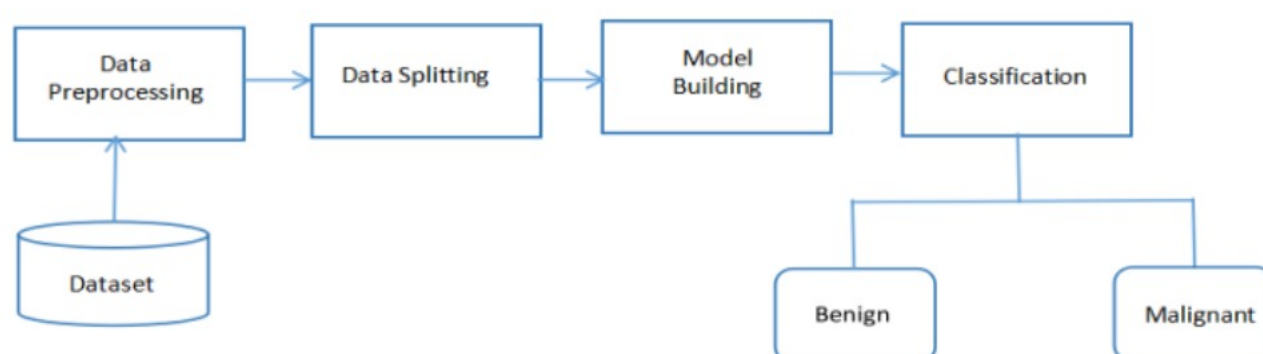
Tools and Libraries

- **Google Colab**
- **Pandas**
- **NumPy**
- **Matplotlib and Seaborn**
- **SimpleITK**
- **OpenCV**
- **PIL (Python Imaging Library) / Pillow**
- **Scikit-learn**
- **TensorFlow and Keras**

Conclusion and Future Scope

The project involved the analysis of lung cancer using CT scans and machine learning techniques. The dataset comprised annotations and candidates' informa tion, focusing on positive and negative instances related to lung nodule. Future works involve Interactive Visual Analytics ,Temporal Analysis and Predictive Modeling, 3D Visualization and Patient Education.

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Github links

1. https://github.com/GRaviSriChandana-1215/LUNG-NODULE-DETECTION-USING-DEEP-LEARNING-TECHNIQUES
2. https://github.com/JaswithaVintha/LUNG-NODULE-DETECTION-USING-DEEP-LEARNING-TECHNIQUES
3. https://github.com/VARSHITHAPURAM/LUNG-NODULE-DETECTION-USING-DEEP-LEARNING-TECHNIQUES