

Raw Literature Survey

Lung Cancer Prediction

CAD system for lung nodule detection using deep learning with CNN[1]

In this work, a novel deep learning method, CNN-5CL, is introduced for enhancing the accuracy of classifying pulmonary nodules in CT images. Using an **11-layer CNN with 5 convolutional layers**, automatic feature extraction and classification are performed. The approach is validated on LIDC/IDRI images using Python, demonstrating impressive accuracy, sensitivity, specificity, and AUC of 98.88%, 99.62%, 93.73%, and 0.928, respectively, surpassing alternative techniques.

Early-Stage Lung Cancer Prediction Using Various Machine Learning Techniques[2]

The study revealed that SVM struggles with noisy and large datasets, while random forest becomes slow with many trees. K-NN works well with balanced data but is sensitive to outliers. Neural networks face challenges with numerical data and duration. The experiment explored various algorithms, preprocessing, and activation functions, favoring the voting classifier for early lung cancer prediction. Further enhancements and models like Logistic Regression and Extra Trees could be explored for better accuracy.

A Study on Early Prediction of Lung Cancer Using Machine Learning Techniques[3]

The study highlights the vital role of ML algorithms in early lung cancer prediction, enhancing understanding of ML techniques. It presents a proposed system, covers diverse datasets, preprocessing methods, and key features, evaluating various ML approaches. Valuable insights into constructing accurate prediction models for lung cancer are provided, aiding researchers in identifying effective ML techniques for increased accuracy and efficiency.

Lung Cancer Prediction Using Stochastic Diffusion Search (SDS) Based Feature Selection and Machine Learning Methods[4]

The study introduces SDS for relevant feature subsets in classification, with Naive Bayes and neural networks handling data well. Effective results indicate SDS-NN's 2.51% accuracy improvement. Feature selection enhances image classification; more research on preprocessing and optimal classifiers is suggested.

Cancer Classification Using Gaussian Naive Bayes Algorithm[5]

In the work, Gaussian Naive Bayes algorithm is used for classification cancer. The algorithm is tested by applying it on two datasets in which the first is Wisconsin Breast Cancer dataset (WBCD) and the second is lung cancer dataset. The evaluation results of the proposed algorithm have achieved 98% accuracy of predicting breast cancer and 90% of predicting lung cancer.

A Comparative Study of Lung Cancer Detection using Machine Learning Algorithms[6]

Machine learning algorithms like Logistic Regression, SVM, decision tree, and Naïve Bayes play a crucial role in medical data prediction and classification. Comparative study shows SVM yields best results in lung cancer detection due to its high-dimensional classification. Extra preprocessing could enhance accuracy further, minimizing mistakes in diagnosis.

Heart Disease Prediction

A Method for Improving Prediction of Human Heart Disease Using Machine Learning Algorithms[7]

Machine learning algorithms effectively identify heart disease and health status. A study used nine classifiers including AB, LR, ET, MNB, CART, SVM, LDA, RF, XGB, before and after hyperparameter tuning. Standard heart disease dataset, preprocessing, and K-fold cross-validation were used. Results showed improved accuracy with hyperparameter tuning and data standardization.

Performance Evaluation of Supervised Machine Learning Algorithms in Prediction of Heart Disease[8]

The study predicts heart disease presence using Decision Tree, Naïve Bayes, Random Forest, SVM, K-Nearest Neighbor, and Logistic Regression. Performance assessed through Accuracy, Precision, AUC, F1-score; Random Forest outperforms with 83.52% accuracy, 84.21% F1-score, 88.24% AUC, and 88.89% precision, surpassing other methods.

Heart Disease Prediction Using Machine Learning Algorithms[9]

The paper evaluates heart disease prediction accuracy using k-nearest neighbor, decision tree, linear regression, and support vector machine (SVM) algorithms. Python Anaconda (Jupyter) notebook aids implementation, offering various libraries and headers for precise work. UCI dataset used for training/testing enhances algorithm assessment.

Estimation of Prediction for Getting Heart Disease Using Logistic Regression Model of Machine Learning[10]

The study's focus lies in applying classification techniques and algorithms, employing data cleaning and mining for a suitable dataset. Logistic regression predicts heart disease, aiding non-medical personnel, reducing doctor workload. The domain offers untapped potential for enhanced prediction and accuracy.

Effective Heart Disease Prediction Using Hybrid Machine Learning Techniques[11]

This paper introduces a novel method using machine learning to enhance cardiovascular disease prediction accuracy. By testing various feature combinations and classification techniques, the proposed hybrid random forest with a linear model (HRFLM) achieves an improved accuracy of 88.7% in heart disease prediction, showcasing significant feature selection's effectiveness.

A Hybrid Intelligent System Framework for the Prediction of Heart Disease Using Machine Learning Algorithms[12]

This research proposes a hybrid intelligent machine-learning system for heart disease diagnosis using seven classifiers and three feature selection algorithms. Cleveland heart disease dataset is used, achieving an 89% accuracy with logistic regression and Relief feature selection. The study highlights improved classifier performance, including accuracy and computation time reduction, enhancing predictive accuracy.

Brain Tumor Detection

Human-expert-level brain tumor detection using deep learning with data distillation and augmentation[13]

The paper introduces a DNN-based approach that matches human experts in classifying tumor and non-tumor tissues using MRS data. The framework includes two steps: a neural network reduces label noise, and data augmentation enhances training. Despite its potential for broader applications, the method currently only handles individual patient spectra as input.

Brain Tumor Detection Analysis Using CNN: A Review[14]

This paper introduces an advanced brain tumor identification method addressing challenges in accuracy, tumor quality, and detection time. It utilizes preprocessing with median filtering on MRI images, achieving 92% validation accuracy. CNN methods yield superior accuracy and segmentation, aiding doctors in treatment planning and surveillance. The approach offers faster computation, efficient training, and potential for improved accuracy in future work.

Convolutional Neural Network based Brain Tumor Detection[15]

The system comprises three key components: Augmentation, Image Pre-processing, and Convolutional Neural Network (CNN). The approach leverages a substantial dataset and deep learning techniques. CNN achieves remarkable 87.42% training accuracy, distinguishing itself from other methods, highlighting its superiority in the field.

Detection and Classification of Brain Tumor in MRI Images using Deep Convolutional Network[16]

The paper presents an automated brain tumor detection and classification system using a deep learning approach. The Faster R-CNN algorithm with VGG-16 architecture is employed for tumor detection and categorization into glioma, meningioma, and pituitary tumor types. The method yields improved results in identifying tumor regions through optimal bounding boxes and achieves mean average precision of 77.60% across all classes. The approach shows promise for broader medical applications like skin lesion segmentation and classification.

Brain Tumor Classification Using Deep Learning[17]

This research enhances MRI-based brain tumor classification and type identification through AI algorithms, CNNs, and Deep Learning. Pre-trained models (Xception, ResNet50, InceptionV3, VGG16, MobileNet) were employed, yielding F1-scores of 98.75%, 98.50%, 98.00%, 97.50%, and 97.25% respectively. These accurate predictions enable early tumor detection, averting physical complications like paralysis and disabilities.

Brain Tumor Detection and Classification Using Convolutional Neural Network and Deep Neural Network[18]

This study introduces a CNN-based system for distinguishing tumorous Brain MRI images with high accuracy (96.08%) and an f-score of 97.3. The model features a 3-layer CNN and minimal preprocessing, yielding results in 35 epochs. The research underscores the significance of diagnostic machine learning and predictive treatment in medical applications.

Design and implementing brain tumor detection using machine learning approach[19]

The research explores brain tumor surveillance by identifying risk factors and proposes an efficient method utilizing Convolutional Neural Networks (CNNs) for accurate tumor detection, classification, and segmentation. The approach involves data collection, pre-processing, filtering, segmentation, feature extraction, and CNN-based classification. This integrated method employs data mining and machine learning techniques to extract meaningful patterns, aiding early-stage brain tumor detection and prevention.

Brain Tumor Detection Using Convolutional Neural Network[20]

The study compared traditional classifiers (SVM, KNN, MLP, Logistic Regression, Naïve Bayes, Random Forest) and Convolutional Neural Network (CNN) using scikit-learn, Keras, and Tensorflow. CNN outperformed traditional methods with 97.87% accuracy. The paper focused on distinguishing normal and abnormal pixels through texture and statistical features.

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