Department of Computer Science and Engineering Bangladesh University of Business and Technology (BUBT)	

CSE 498: Literature Review Records

Student's Id and Name	ID: 19202103482 Name:Meher Mahbub
Capstone Project Title	Using machine learning approaches to detect Brain Tumor
Supervisor Name & Designation	Md. Saddam Hossain,Assistant Professor
Course Teacher's Name & Designation	Jubayer Al Mahmud,Assistant Professor

1. Brain Tumor Detection and Classification Using Convolutional Neural Network and Deep Neural Network

The goal of this research paper is to propose a methodology for accurate detection and classification of brain tumors using CNN and DNN models, as well as to improve brain tumor detection performance, distinguish between different tumor types, and aid in early diagnosis and treatment planning.The study used CNN and DNN models to detect and classify brain tumors. The architecture and layers of the models, as well as the training process incorporating optimization methods like SGD or Adam, are detailed in this section. Evaluation of brain tumor detection and classification using metrics such as accuracy, precision, recall, F1 score. The work aims to provide information on the accomplished performance, such as accuracy and other related metrics. The results and discussion of the CNN and DNN models for brain tumor analysis.The part of convolutional neural

network (CNN) and deep neural network (DNN), provides valuable insights and techniques for developing accurate and efficient methodologies in this field.

2. Design and Implementing Brain Tumor Detection Using Machine Learning Approach

The purpose of this research study is to develop and test a machine learning-based strategy for detecting brain tumors. The goal is to use automated techniques to improve the efficiency and effectiveness of brain tumor diagnosis.The study used a machine learning approach to detect brain tumors. The specific methodology and algorithms used are not provided in the given information. Machine learning techniques likes support vector machines (SVM), random forests, or convolutional neural networks (CNN) are commonly employed for medical image analysis tasks. The paper provides specifics on the metrics achieved and compare the results to previous methodologies. The conclusion summarizes the data and highlights machine learning's potential for enhancing brain tumor detection accuracy. Machine learning can be used to improve brain tumor detection.

3. Brain Tumor Detection Using Deep Neural Network and Machine Learning Algorithm

The purpose of this study is to offer a strategy for detecting brain tumors accurately utilizing DNN models and machine learning methods. The goal is to increase the efficiency and effectiveness of brain tumor diagnostics by utilizing deep learning and machine learning approaches.The paper utilizes a methodology that combines DNN models and machine learning algorithms for brain tumor detection. The broader method of employing DNN models to extract features from medical imaging data and then applying machine learning techniques for classification or detection are also discussed.The proposed methodology was tested using a brain imaging dataset to analyze its effectiveness using parameters such as accuracy, sensitivity, specificity, and AUC. The research paper provides performance metrics such as accuracy and evaluation measures, and discusses the effectiveness of a combined DNN and machine learning approach for accurate brain tumor detection. The collected knowledge about brain tumor identification utilizing DNN models and machine learning algorithms can be utilized as a reference for creating similar techniques in the field.

Keyword: Brain tumor, medical imaging, deep learning, machine learning, classification, detection, accuracy, sensitivity, specificity, AUC, feature extraction.

4. Brain Tumor Detection using Fusion of Hand Crafted and Deep Learning Features.

This research study aims to improve brain tumor diagnosis performance by combining classical feature engineering and deep learning techniques. The goal is to improve accuracy and efficiency by combining the complementary qualities of classical feature engineering and deep learning.The research study used a system that combined handmade characteristics with deep learning algorithms to improve brain tumor detection performance. This strategy involves extracting handmade features from medical images and combining them with features learned by deep learning models.The paper provides specifics on the metrics achieved and compare the results to previous methodologies. The conclusion summarizes the data and examines the efficacy of combining handmade and deep learning features to detect brain tumors.The techniques discussed in the paper

can be used to improve existing approaches or explore new avenues for accurate brain tumor detection using a hybrid feature fusion approach.

Keyword: Brain tumor, medical imaging, feature extraction, handcrafted features, deep learning, machine learning, classification, accuracy, sensitivity, specificity, AUC.

5. Brain Tumor Identification and Classification of MRI images using deep learning techniques.

This research paper aims to use deep learning techniques to accurately identify and classify brain tumors, improving the efficiency and effectiveness of brain tumor diagnosis.Deep learning algorithms are used in the study to identify and classify brain tumors. Deep learning algorithms are trained on MRI image datasets, where the models learn to extract discriminative features and classify images as tumor or non-tumor. The paper goes into detail about the achieved performance indicators and compares them to previous methodologies. The conclusion summarizes the data and examines the efficacy of applying deep learning algorithms to accurately identify and classify brain tumors. The findings here can be used to improve existing approaches or explore new avenues for

accurate brain tumor identification and classification using deep learning algorithms applied to MRI images.

6. Detection of brain tumors from MRI images base on deep learning using hybrid model CNN and NADE

The intent of this research paper is to suggest a method for detecting brain cancers from MRI images using a hybrid deep learning model. The goal is to improve the detection and detection of brain tumors by using the capabilities of CNNs and NADE.The study employs a hybrid deep learning model that incorporates CNNs and NADE to detect brain tumors from MRI scans. CNNs are used to extract spatial information, while NADE simulates the probability distribution of the extracted features. The algorithm was trained using a labeled collection of MRI images to learn distinguishing characteristics of brain tumors. The results of using a hybrid CNN-NADE model to detect brain tumors in MRI images are showed, and compared it to existing methodologies. The conclusion summarizes the data and analyzes its efficacy. Deep learning techniques can be used to identify brain tumors using hybrid models combining CNNs and NADE.