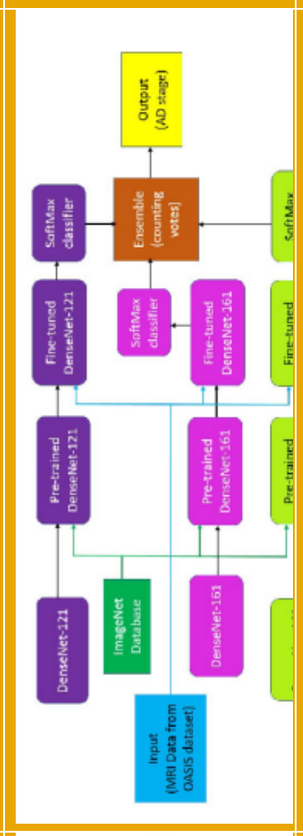
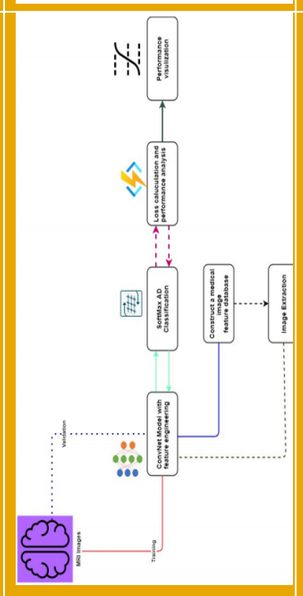
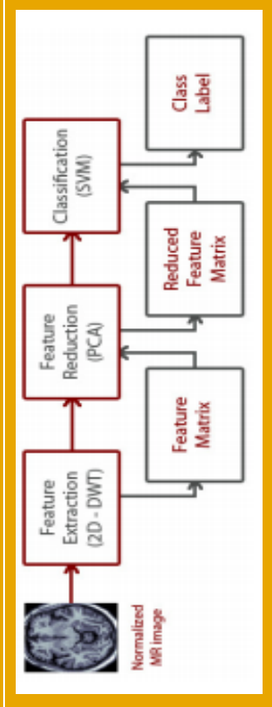
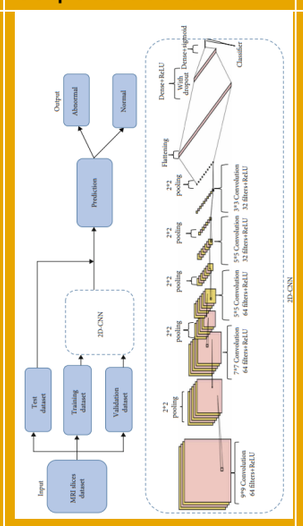
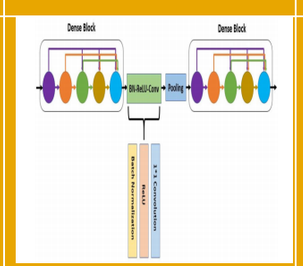
LITERATURE SURVEY REFERENCE TABLE

NAME (Authors)	AGENDA (goal)	KEY WORDS	WORKING	INNOVATION aspect OR differences	MODELS (TESTED) + accuracy	NEGATIVE POINT (LIMITATIONS)	DATASET NAME/ TYPE
SHAKILA BASHEER , SURBHI BHATIA AND SAPIAH BINTI SAKRI	Computational Modeling of Dementia Prediction Using Deep Neural Network	Dementia, Alzheimer's disease, neural network models, machine learning, deep learning, CNN, capsule networks.	extract + sample img | pre processing | feature extraction | TRAINING data | Classification | OUTPUT	KPCA EXPLORATORY DATA ANALYSIS use of Error, Accuracy, Sensitivity, Recall, Precision and F1Score ROC CURVE CORRELATION and VIOLIN plot	M-CAP net 92.39 LGBM ~83 RF ~83 Adaboost ~80 ENSEMBLE ~83 ExtraTrees ~85 GradientBoost ~85 XGB ~83 Decision tree ~80 SVC ~78 * Numpy (For matrix analysis), Sea born (for advanced plotting), pandas (for data ingestion) and Matplotlib (for basic plotting), sklearn and tensorflow (for Machine learning tasks).	expensive when implemented on other datasets with heterogeneity factor involved in their data The model can also be improved by considering optimization and applying more validation on external data cohorts. + FUTURE SCOPE	OASIS
Shanmuga Skandh Vinayak E, Shahina A, Nayeemulla Khan A	Dementia Prediction on OASIS Dataset using Supervised and Ensemble Learning Techniques	Dementia, detection, Machine Learning, Algorithms, OASIS, feature selection, dimension reduction.	The experiment models are trained and tested using the data obtained from the MRI scans and the demographic data obtained during each scan from the test subjects (MR session). The experiment is conducted to classify the subjects as one of the three classification groups	FEATURE SELECTION, DIMENSIONALITY REDUCTION and use of f1score, recall, precision and confusion matrix	Navïe Bayes 87.29 kNN 90.74 SVM 92.57 ANN 95.84 RF 96.66 XGB 97.87 Ensemble Classification 97.00	(limiting factors) The hippo campal MRI data The prefrontal Cortex data. The family history on dementia diseases. can be utilized for the OASIS 3 dataset,data can be utilized in the prediction process of a specific type of dementia such as,	(OASIS) OASIS1 Cross-sectional MRI OASIS 2 Longitudinal MRI

			(dementia positive, converted to a dementia state and dementia negative), using the available data. This experimental so aims to compare the machine learning models based on their accuracy and performance to classify the subject data.			Alzheimer's disease	
Jyoti Islam Yanqing Zhang	An Ensemble of Deep Convolutional Neural Networks for Alzheimer's Disease Detection and Classification	Neurological disorder, Alzheimer's disease, Deep learning MRI, Brain imaging		SOFTMAX FUNC BACK PROPOGATION SCHOLASTIC GRADIENT DESCENT use of f1score, recall, precision	ENSEMBLE 94 DENSENET 169 90 DENSENET 161 75 DENSENET 121 93 GLCM 75.71	can be used for other classification problems in medical domain. Moreover, the proposed ensembled approach can be used for applying CNN into other domains	OASIS
Gopi Battineni,Nalini Chintalapudi,Francesco Amenta and Enea Traini	Deep Learning Type Convolution Neural Network Architecture for Multi class Classification of Alzheimer's Disease	Alzheimer's Disease (AD), OASIS-3, MRI Images, Deep Learning, CNN.		convolution layers, feature engineering, max pooling, and classification. CROSS ENTROPY (loss function) ADAM (optimizer) SOFTMAX loss and receiver operating characteristic area under the curve (ROC AUC) have been used	CONVnet NA ROC curve 83.3 * 70% as training, 10% as validation, and 20% images are used	Main limitation of the study is to adopt only a single classifier for the brain MRI data classification and there are other possibilities to do better improvements in the proposed model architecture.	(OASIS) OASIS-1 (cross-sectional) and OASIS-2 (longitudinal) MRI datasets

H. M. Tarek Ullah Zishan Ahmed Onik Riashat Islam Dr. Dip Nandi	Alzheimer's Disease And Dementia Detection From 3D Brain MRI Data Using Deep Convolutional Neural Networks	Neural Networks, Deep Learning, 3D Brain MRI, Alzheimer's Disease And Dementia, Machine Learning, Big Data, High Dimensional Input	NEURAL NETWORK with 6 layers	CDR SCORE Convolutional layer Pool layer Dense layer Rectifier Linear Unit activation function was used. To optimize the neural network, stochastic optimization function Adam Optimizer with learning rate 0.001 was used	(545 epochs) CNN 80.25 * Floydhub's GPU	FUTURE SCOPE + can serve as an inspiration to other kind of 3D image analysis using deep learning,also can use already pre-trained models using Imagenet dataset like Oxfords VGG16, Microsoft's ResNet.	OASIS
Luis Javier Herrera , Ignacio Rojas, H. Pomares, A. Guillén, O. Valenzuela, O. Baños	Classification of MRI images for Alzheimer's disease detection	Support Vector Machine (SVM); Alzheimer's Disease; Mild Cognitive Impairment (MCI); PCA; Wavelets; MRI,		FEATURE EXTRACTION (dimensionality reduction), Discrete Wavelet Transform (DWT) , FEATURE SELECTION, Normalized Mutual Information Feature Selection (NMIFS), minimum Redundancy Maximum Relevance (mRMR) Wavelet and Fourier transform, Principal Component Analysis (PCA), LIBSVM toolbox Sensitivity Specificity PPV NPV were used to compare results of various studies	USE OF NAD studies (mean CV acc) Db4 L2 Wavelet 95.01 Db4 L2 Wavelet + PCA 93.90 Haar L3 Wavelet 96.23 Haar L3 Wavelet + PCA 94.79 *MATLAB,SPM5	Work on optimal slices to perform the classification, the use of other dimensionality reduction algorithms which could attain a reduction in time complexity for the problem, and the study on other databases of the same algorithm	ADNI (Alzheimer's Disease Neuro imaging Initiative) ADNI-1 ADNI-2 ADNI-GO
Jyoti Islam Yanqing Zhang	Early Diagnosis of Alzheimer's Disease: A Neuro imaging Study with Deep Learning Architectures	deep learning,MRI 3D images	The model has several layers performing four basic operations - convolution, batch normalization, rectified linear unit, and pooling. The	NA	(only highest accuracies across all classes of images is mentioned) deep CNN 99 Inception-v4 81	____	

			layers in the model follow a particular connection pattern known as dense connectivity, where each layer is connected to every other layer. For final classification, there is a soft max layer with four different output classes		ResNet 82 * SGD training with a mini-batch size of 64, a learning rate of 0.01, a weight decay of 0.06 and a momentum factor of 0.9 with Nesterov optimization		OASIS
Fanar E. K. Al-Khuzaie , Oguz Bayat ,and Adil D. Duru	Diagnosis of Alzheimer Disease Using 2D MRI Slices by Convolutional Neural Network	CNN,MRI,2D-images, Keras		use of f1score, recall, precision RELU and Ada delta optimization	(NORMAL AlzNet) accuracy ranged from 94.12 - 97.88 depending on the values of dropout rate and dense units (ENHANCED AlzNet) 99.30 was the highest accuracy achieved during binary classification in testing *The training data set was 75% and the validation data set was 25%.	can be only used on 2D images	OASIS
Jyoti Islam Yanqing Zhang	Brain MRI analysis for Alzheimer’s disease diagnosis using an ensemble system of deep convolutional neural networks	Neurological disorder, Alzheimer’s disease, Deep learning, Convolutional neural network, MRI, Brain imaging		use of f1score, recall, precision,support, Nesterov momentum optimization with Stochastic Gradient Descent (SGD) algorithm for minimizing the loss of the network ADnet,comparison with RESnet and inception-v4	M-models E-ensemble variants E1-[M(1+2+3+4)] 78 E2-[M(1+2+3+4+5)] 77 PROPOSED ensemble model 93.18	not applicable for subsequent stages of Alzheimer's disease and other brain disease diagnosis.	OASIS