

Comparative Analysis of 10 Alzheimer's Disease Research Papers

S.No	Title of Research Paper	Dataset Used	Algorithm	Model	Accuracy	Implementation	Unique Features
1	Accurate Blood-Based Diagnostic Biosignatures for AD via AutoML	3 Blood-based omics datasets (miRNA, mRNA, proteins)	AutoML (JADBIO) using SVM, Random Forest, Ridge Logistic Regression	3 biosignatures (SVM, RF, Ridge)	AUC 0.975, 0.846, 0.921	AutoML pipeline with BBC-CV validation	Multiple biosignatures for minimally invasive tests
2	A Deep Learning-Based Ensemble Method for Early Diagnosis of AD	ADNI + local MRI dataset	CNN Ensemble (VGG, ResNet, DenseNet, Inception)	WPBEM (Weighted Prob Ensemble)	98.57% (ADNI), 88.46% (local)	Transfer learning + fine-tuning	Multiple binary/multiclass classifications
3	18F-FDG-PET-based Deep Learning for Predicting Cognitive Decline	ADNI, J-ADNI, HABS	Deep Learning (CNN with Cox Regression)	FDG-PET-based DL Model	Prognostic iAUC improvement: 0.02 to 0.059	Time-dependent ROC, Cox model	Cross-cohort generalizability and prediction
4	Detection of AD Using MRI and PET Neuroimaging	Literature Review	ML + DL (Generic)	Not Applicable (Review)	N/A	Evaluation of 84 papers	Focus on longitudinal data and neuroimaging biomarkers
5	Automated Diagnosis of AD using OCT and OCTA	Multiple studies, e.g., Duke Alzheimer Center	Multiple: CNN, XGBoost, SVM	Deep CNNs, Attention Models	82% to 96%	Various preprocessing + interpretability tools	Novel use of eye imaging (OCT/OCTA)

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6	Alzheimer Detection using MRI with DenseNet & VGG19	Kaggle-based dataset (MRI images)	CNN	DenseNet169, VGG19	VGG19: 88% (train), 82.6% (test); DenseNet: 87%, 80%	50 epochs, 128 batch size	4-class classification (Non, Very Mild, Mild, Moderate Demented)
7	Deep Learning Algorithm to Predict AD from FDG-PET	ADNI + Local PET set	CNN (Inception V3)	Transfer-learned CNN	AUC ~0.91 (external test set)	Preprocessing with grid & dropout layers	Fine-tuned CNN with external validation
8	Automated Detection of AD Using DL on OCTA	OCTA-500 dataset + Mouse + Human	Deep CNNs	End-to-End DL	Up to 96% accuracy	Transfer learning, attention, Grad-CAM	Combines human and animal studies
9	Detection of AD with VGG and DenseNet (IJERT)	MRI dataset (3048 train, 2067 test)	CNN	VGG19, DenseNet169	VGG19: 88% train, 82.6% test	Custom class mapping & softmax	Model ready for website deployment
10	Review of ML-Based AD Detection using OCT/ OCTA	Literature Review	Various ML/DL	Not Applicable	N/A	Review of 50+ studies	OCT-based non-invasive diagnosis focus