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| Title | Predicting Alzheimer’s Disease at Low Cost Using Machine Learning | | |
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| Abstract |  |
| Modeling and predicting Alzheimer's disease (AD) is a noteworthy field of study for many years. However, diagnosing and treating AD for poor people in many developing and underdeveloped countries is a luxury. Many countries lack the proper tools. Many people do not have the capability of bearing the cost of MRI tests. In this paper, we analyzed a way of identifying AD as cheaply as possible. We investigated the difference in efficiency between the Machine learning models using Magnetic Resonance Imaging (MRI) data versus models without MRI data. We had around a 3% difference between the best models of these tests. We used the OASIS dataset. We used patients' longitudinal lifestyle data like age, gender, education, income, MMSC score, and other features for Non-MRI models. For MRI models, we also analyzed MRI data along with the lifestyle data. We trained different Machine learning models like Random Forest Classifier, GaussianNB, LinearSVC, Logistic Regression, KNeighbors Classifier, Adaboost Classifier, and several other models. After that, we combined our best models and created a hybrid model. Our best result was 96.07% accuracy with MRI data and 93.37% accuracy without MRI data. The non-MRI result may not be as efficient as the models with the MRI dataset and not crucially inefficient. Our result can be summarized as the Non-MRI data can be used for starting the diagnosis for those poor people. | |