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A Deep Learning-based Semi-Supervised GAN to detect Alzheimer's illness efficiently

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Abstract: Alzheimer's disease (AD) prediction accuracy is crucial for minimizing memory loss and enhancing Alzheimer's disease patients' quality of life. Neuroimaging has been explored as a possible method for diagnosing Alzheimer's disease for the past decade. The goal of this study is to create a deep learningan alzheimer's disease assessment from beginning to finish ahead of schedule on. The semi-supervised deep learning algorithm is a adversarial network

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generatively designed to detect the presence of Alzheimer's disease in magnetic resonance imaging data automatically. This model is mapped on the original representation and the semi-supervised Generative Adversarial Network classifier predicts the AD, the segmented result is used to efficiently partition the left and right-side hippocampal volume, and the deep feature from the segmented area is derived with convolution computational intelligence morphological operations. The current study uses the alzheimer's disease uses the dataset of neuroimaging initiative to perform the experiment. This method presents a revolutionary deep learning framework for detecting alzheimer's disease that can be used to patient data from the adult situation to improve medicine and standard of living.

Published in: 2022 2nd International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE)

Date of Conference: 28-29 April 2022 **DOI:** 10.1109/ICACITE53722.2022.9823795

Date Added to IEEE Xplore: 18 July 2022

Publisher: IEEE

► **ISBN Information:**

Conference Location: Greater Noida, India

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I. Introduction

Alzheimer's disease is one of the most communal reasons of dementia, affecting 30 million people globally [1]. It is a neurodegenerative disease that progresses lightly and results in the loss of nerve cells. Minor memory issues are the first indication, which progresses to serious brain affect. There has been presently no cure for dementia, and the medications that doctors prescribe simply slow the progression of the disease. As a result, the most effective strategy to improve treatment will be to discover the condition early. Figure 1 depicts the structural normal, mild cognitive impairment, and alzheimer's disease imaging modalities Fig. 1.

Alzheimer's disease structural characteristics compared to a healthy brain

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