

Alzheimer Detection Using Generative AI

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Abstract: *Alzheimer's Disease (AD) is a progressive neurodegenerative disorder, and early detection is critical for timely intervention. The classification of medical images, such as brain MRIs, plays a pivotal role in diagnosing AD. Traditional methods for AD classification often rely on handcrafted features or conventional machine learning techniques, which may not fully capture the complexity of brain patterns associated with the disease. In recent years, Generative AI, particularly VAE, has emerged as a powerful tool in medical imaging. By leveraging its ability to model high-dimensional data, Generative AI can enhance image quality, generate synthetic data, and augment training datasets for better classification accuracy. The proposed approach shows promising results in improving classification accuracy while reducing the dependency on large labelled datasets, paving the way for more efficient, AI-driven diagnostic tools in the early detection of Alzheimer's Disease.*

Keywords: Alzheimer, Generative AI, Variational Autoencoder, MRI, Medical Diagnosis

