

Explainable Artificial Intelligent method Grad-CAM in medical images processing

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Abstract. *The research's goal is to help diagnose Alzheimer's disease early using explainable AI (XAI) and deep learning. MRI images of brain were used to train a convolutional neural network to categorize the four stages of the disease. To make each prediction more transparent, the areas of the brain which the trained network used to make the categorization on were highlighted using Grad-CAM. This approach encourages the safe use of AI in healthcare by making model decisions easier for doctors to understand. To address data scarcity, synthetic brain MRI images were generated using deep generative models. Their quality was assessed using FID and LPIPS to ensure reliability for training and interpretation.*

Keywords. explainable AI, convolutional neural network, Grad-CAM, Alzheimer's disease

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