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EXPERIENCE

Research | UTA

1 Unveiling Alzheimer's Disease Progression Through Multi-Modal Embeddings:

This project has been finished.

Alzheimer's disease (AD) continues to present a profound challenge in healthcare, demanding innovative methodologies for understanding and predicting its progression. This study introduces a comprehensive framework that integrates brain functional connectivity, AD-related scores as progression guides, and a self-attention mechanism for feature selection. Utilizing functional connectivity as input for multiple Multi-Layer Perceptrons (MLPs) to generate embeddings that reflect the influence of different score changes (e.g., MMSE, GDSCALE) in the AD progression. Incorporating a self-attention mechanism refines the predictive model, focusing on essential embeddings crucial for accurate AD prognosis. The proposed approach offers a multi-modal perspective, enabling a nuanced exploration of AD dynamics and enhancing the potential for early-stage detection and personalized intervention strategies.
Result figure:
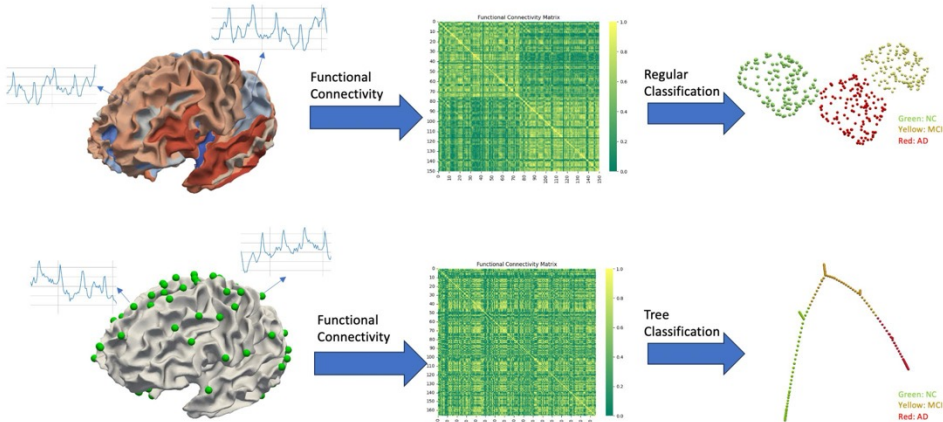
2 Alzheimer disease related feature extraction:

This method have not been finished. But there is a clear idea to do feature extraction.