



# Clustering dementia patients with graph-Learning in resting-state functional MRI

Project Management and Software Development  
for Medical Applications

## General Info

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## References

<https://arxiv.org/abs/1703.03020>

<https://pubmed.ncbi.nlm.nih.gov/34080613/>

## Project Abstract

Clustering dementia patients using graph learning incorporates MRI images, clinical data, and tau protein levels for improved diagnosis and patient management.

## Background and Motivation

Representing the functional brain as a graph paves the way for extracting information about how spatially connected areas of the brain work together on a functional basis. In this case, we would use data from patients with dementia, represent their functional brain as a graph and infer information about different subclusters of dementia.

## Student's Tasks Description

Dealing with fMRI data, build upon an existing approach graph learning, extend this approach.

## Technical Prerequisites

Python, graph learning is a plus

Please send the completed proposal to [ardit.ramadani@tum.de](mailto:ardit.ramadani@tum.de), [lennart.bastian@tum.de](mailto:lennart.bastian@tum.de) and [tianyu.song@tum.de](mailto:tianyu.song@tum.de). Please note that this proposal will be evaluated by the BMC coordinators and will be assigned to a student only in case of acceptance.