

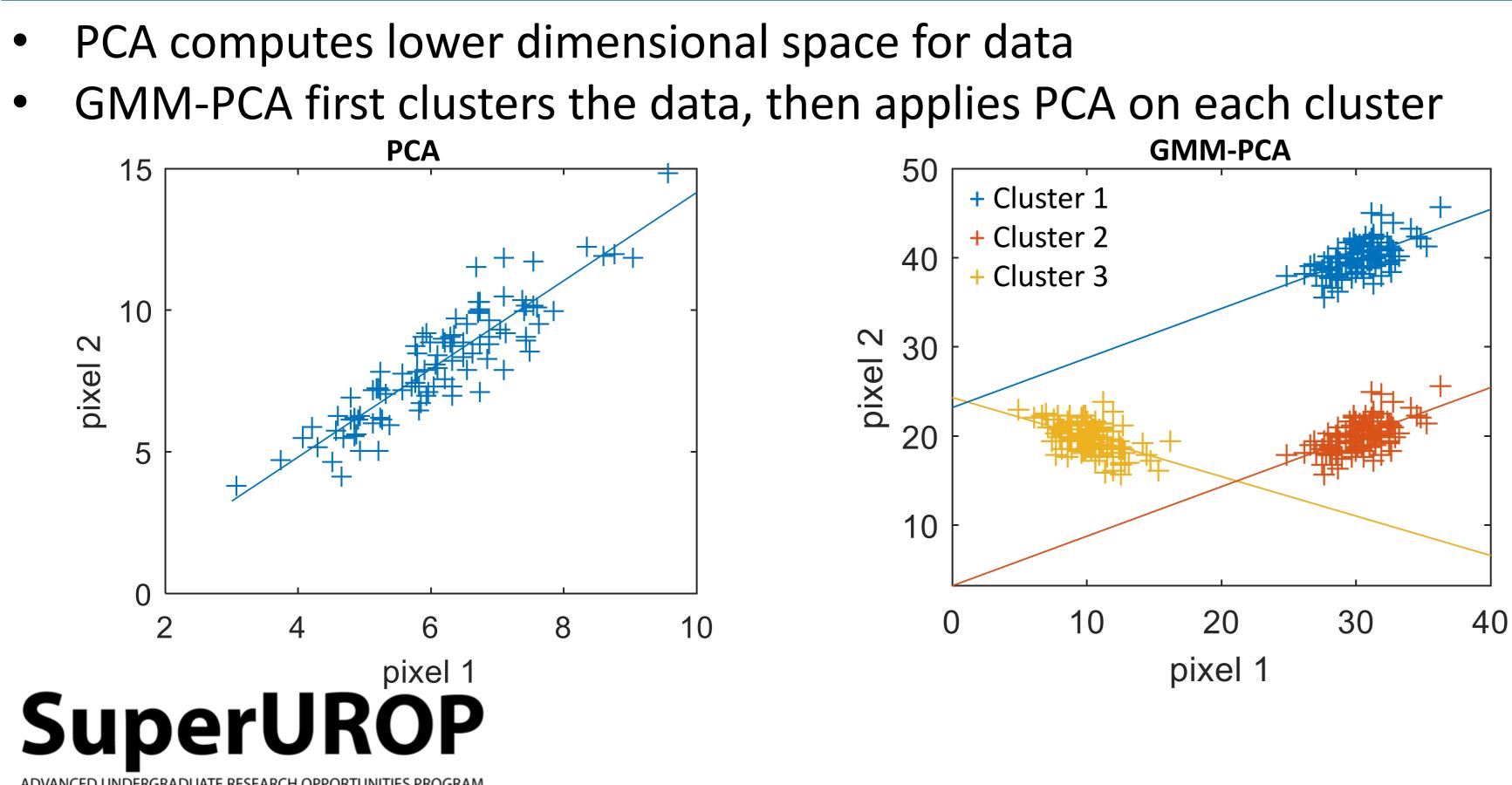
# Representations of Leukoaraiosis in Clinical Brain Images Andreea Bobu<sup>1,2</sup>, Adrian V. Dalca<sup>1</sup>, Stefanie Jegelka<sup>1</sup>, Polina Golland<sup>1</sup> <sup>1</sup>Computer Science and Artificial Intelligence Lab, MIT, Cambridge, USA <sup>2</sup> Angle Undergraduate Research and Innovation Scholar

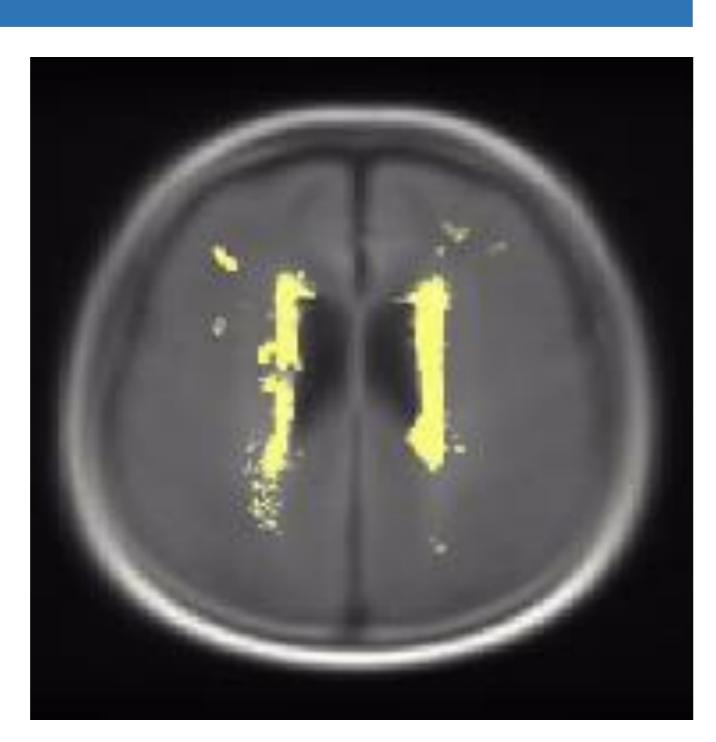
## Background

Motivation: Characterizing leukoaraiosis (small vessel brain disease) is important in understanding stroke

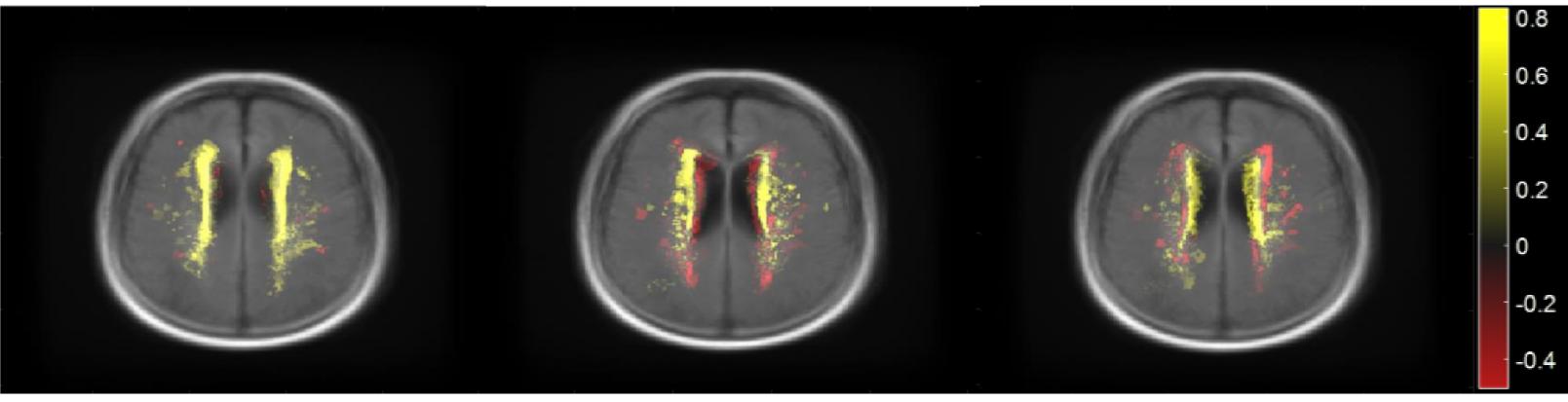
**Goal**: Mathematically represent leukoaraiosis formation as seen in 3D clinical brain images and correlate it with stroke outcome

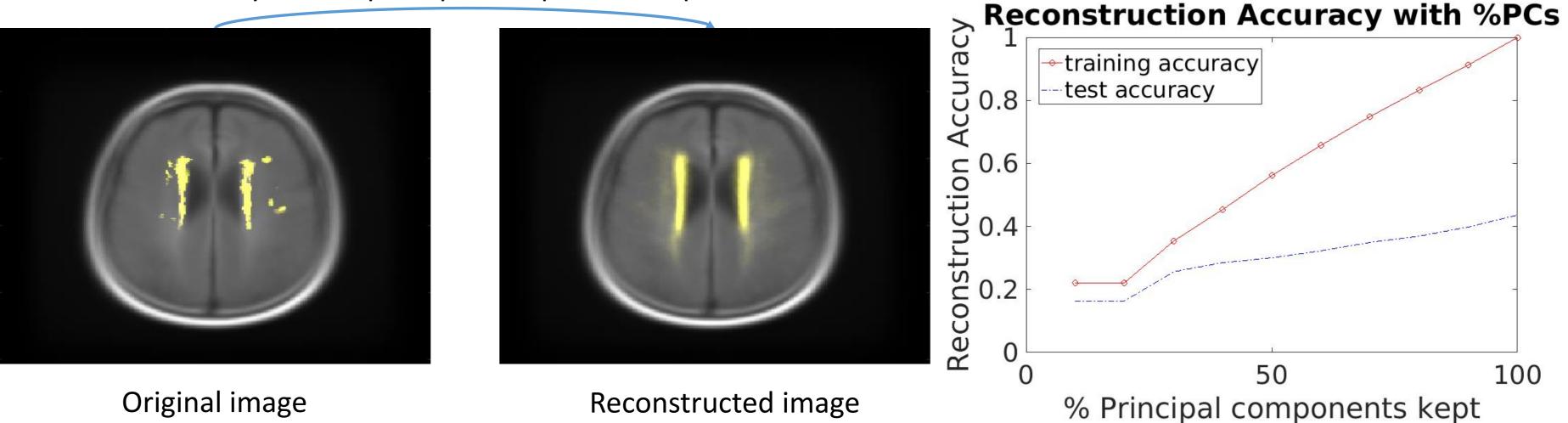
# Method





# Results





# Future work



### Top 3 principal components for PCA:

#### Only 30% of principal components kept!

### Compared to single PCA, GMM-PCA captures more complex data!

### Finish GMM-PCA framework

Implement Latent Topic Models with Dirichlet distribution Modify Latent Topic Models for binary distribution



Massachusetts Institute of Technology



