Deliverables: Oct 23, 2017

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NOvel **M**ethod for **A**utonomous **D**etection of **S**ynapses

From Last Week

- Scree Plots for NMF and SVD
- Overview of Simple Supervised Alg On Reduced Data
- Application of LDA and QDA on pairs of volume normalized intensities
- Run PLOS algorithm using collman15v2 PSD95 channel
- Work with AVATR to pull data from the BOSS (Demo during AVATR presentation)

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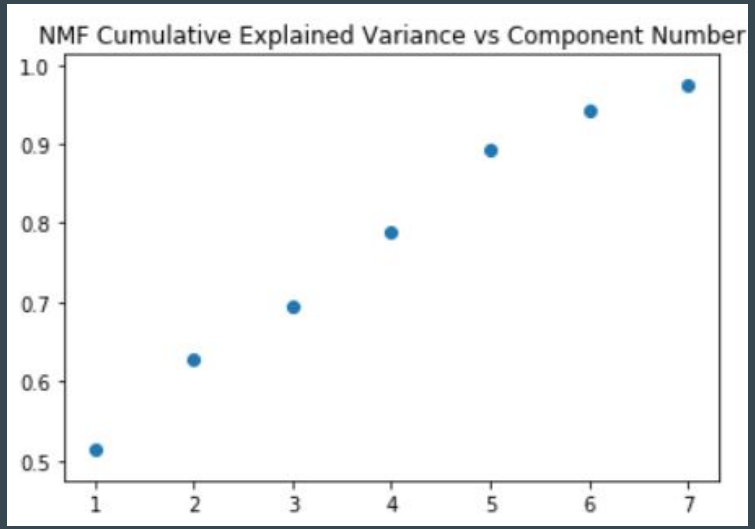
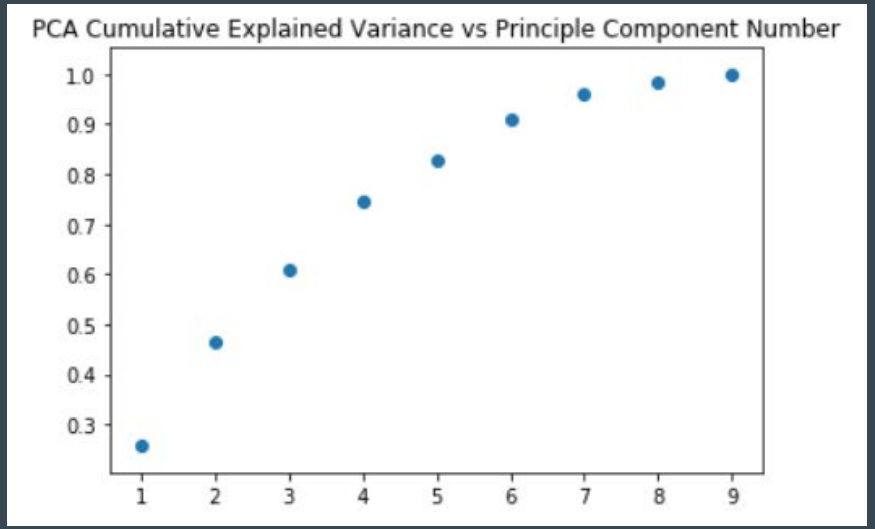
Both PCA and NMF should use 6 Components





- link

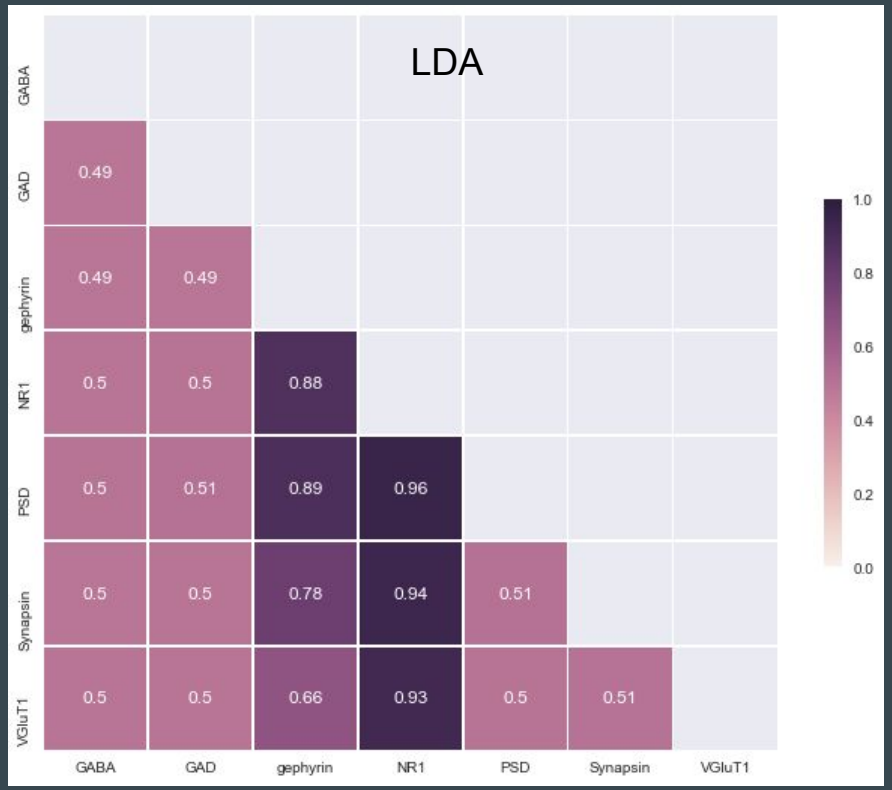
LDA performs VERY poorly on both PCA and NMF data :(

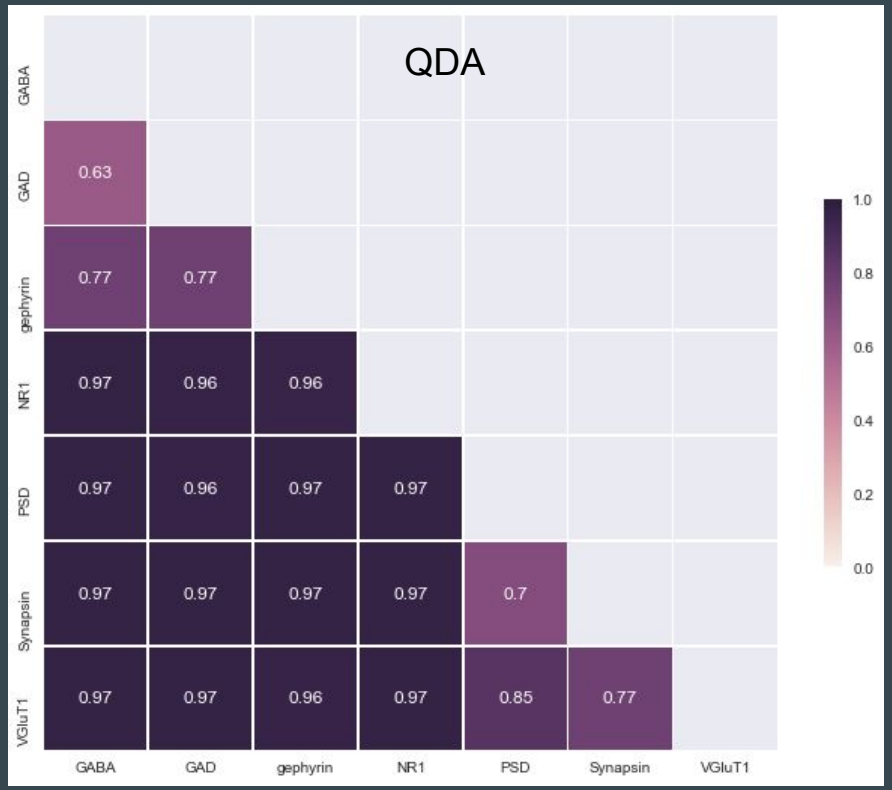
- PCA & LDA
  - 1% Precision
  - 66% recall
- NMF & LDA
  - 1% precision
  - 50& recall

- I believe this is due to a lack of context
- link

QDA > LDA When Trained on Collman15 and Tested on Collman14

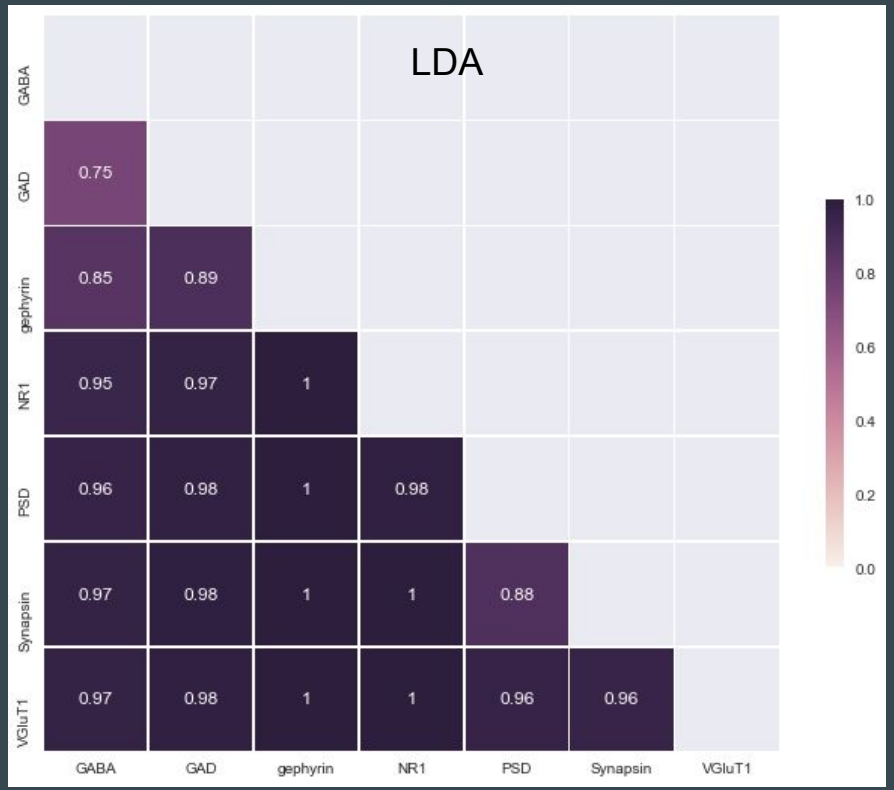
Code

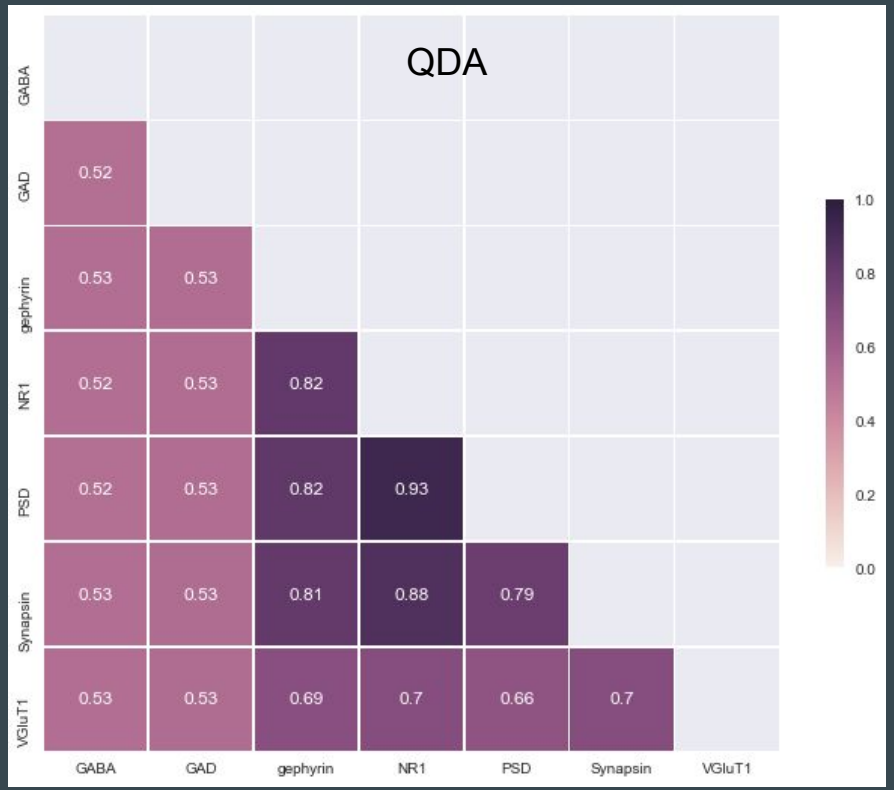




LDA > QDA When Trained on Collman14 and Tested on Collman15

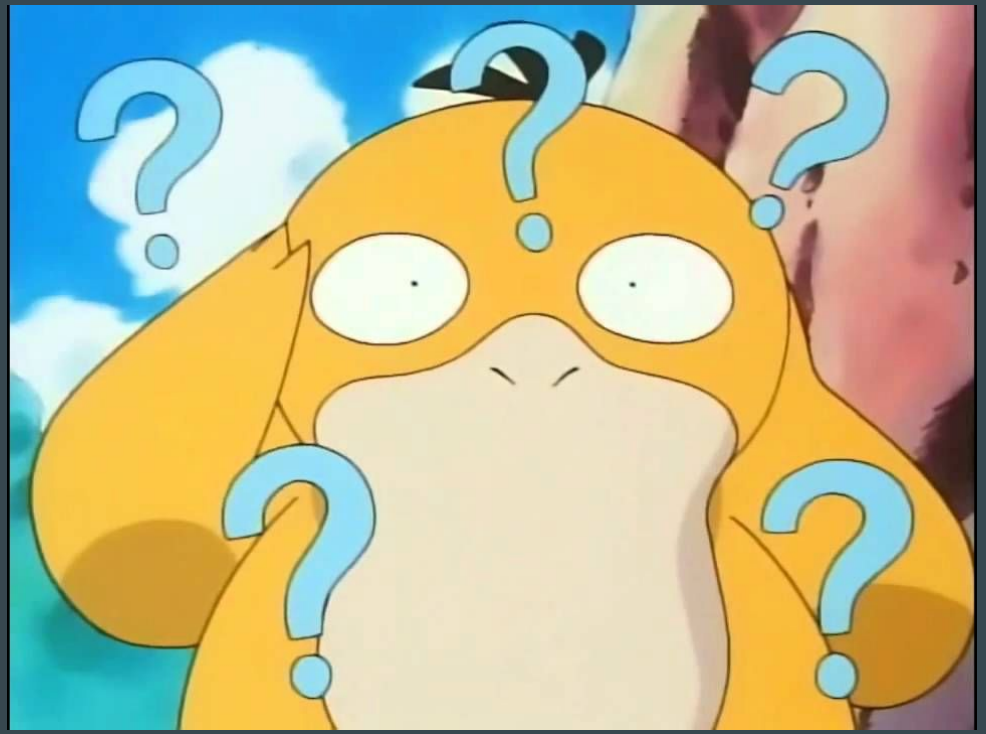
Code





PLOS Matlab code is not trivial to run

- Requires bunch of hyperparameters as input.
- Not supplied in the repo.
- Use Collman median filter as baseline.



For Next Week

- Perturbation test of Correlation Results
  - What happens to the plots as their center is moved around?
  - What happens to the plots when there is no synapse in them?

- MOAR things (talk to Jovo/Ebridge)