Introduction and Setup
GUI Layout and Functionality
Prepare Analysis Panel
Run Analysis Panel
Visualization Panel
Other Functionality

HINT Tutorial

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Getting Started

Downloading HINT and the example data

The current version of HINT can be downloaded from github at:
https://github.com/Emory-CBIS/HINT

The tutorial data, as well as these slides, can be downloaded from github at:
https://github.com/JoshLukemire/HINTTutorial

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Opening the toolbox

- Navigate to the HINT folder you downloaded from github
- Open the "hint.m" file in Matlab
- Click run to start up the GUI

HINT GUI

The HINT GUI consists of three panels, each corresponding to a part of an hc-ICA analysis.

1. Prepare Analysis
2. Run Analysis
3. Visualize

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Loading Data
Model Specification
Preprocessing
Initial Guess

The prepare analysis panel is where the bulk of the work takes place. Here you will:

- Specify and analysis folder and prefix
- Load the data and setup the model
- Preprocess the data
- Obtain an initial guess for the EM algorithm
- Remove unwanted independent components from the analysis

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Example Data

IN THIS SLIDE FILL OUT THE OUTPUT FOLDER AND THE
PREFIX, SHOW EXAMPLE OF OUTPUT FOLDER, SHOW
EXAMPLE LOG

Loading the data

You have two options for loading the data. First, you can start a
new analysis by inputting the nifti files, the mask, and the
covariates. Alternatively, if you have already run an hc-ICA analysis
before and want to modify it, you can load the previous analysis.
FIRST DO BASIC VERSION, THEN LATER INI REDO WILL DO
LOAD SAVED ANALYSIS

Loading the data

IMAGE OF LOAD DATA WINDOW GOES HERE, IN
PRESENTATION WILL SWITCH TO MATLAB

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Model Specification

Now that the data is loaded, we need to specify the model. Click on the CHECK FINAL BUTTON NAME

Model Specification

IMAGE OF MODEL SPEC WINDOW WITH EXPLANATIONS
GOES HERE

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Model Specification

IMAGE OF MODEL SPEC WINDOW WITH AFTER SPECIFYING
INTERACTIONS GOES HERE

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Analyses in HINT require the data to be demeaned and prewhitening. The toolbox handles this in the XXX sub-panel. SHOW IMAGE OF THAT PANEL HERE. It is here that you select the number of principal components for the initial data reduction, as well as the total number of independent components in the model.

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The EM algorithm requires an initial guess to XXXXXXXX.
INCLUDE IMAGE, EXPLAIN DONE USING GIFT TOOLBOX
AND THAT THIS IS WHERE NUMPCA MATTERS.

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SHOW OUTPUT VIEWER

stuff goes here

THINGS TO SHOW: 1 POPULATION LEVEL VIEWER, MASK CREATION; 2 COVARIATE VIEWER, CONTRASTS; 3 SUB POP VIEWER, SHOW SIDE BY SIDE COMPARISON

FOR THIS EXAMPLE, HAVE THEM CLOSE OUT MATLAB, REOPEN AND LOAD THE RUNINFO FILE, THEN HAVE THEM REESTIMATE THE INTIAL GUESS AND RMEOVE ONE OF THE ICS. THEN HAVE THEM RUN IT FROM A SCRIPT ANALYSIS AND SHOW THEMM THE COMPILE RESULTS OPTION. THIS IS ALSO A GOOD TIME TO SHOW THE ITERATION RESULT SAVING.

Loading a saved analysis

xxx

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Loading a saved analysis
Removing ICs from the analysis
Running the EM algorithm from a script
Compiling iteration results

Removing ICs from the analysis

xxx

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Running the EM algorithm from a script

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Compiling iteration results

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