**Codes and data files for MayoProject2:**

**Data files:** To start with, the following data folder/files are required and should be present in “Data” folder inside MayoProject (decoding attention project) folder. If not, segmentedData can be obtained by executing saveSegmentedDataMayo.m and saveSegmentedNeutralDataMayo.m codes, electrodeArrayList can be obtained by executing saveGoodElectrodes.m from MayoProjectPrograms.

1. ***extractedData***: contains codes files and DAT files which are used to obtain task related and behavioral data.
2. ***segmentedData***: contains LFP, spikes data for each attention conditions segmented between -0.5 s to 0.1 s relative to target onset.
3. ***electrodeArrayList***: contains the list of good electrodes of all the 25 sessions. (This file is present in the savedDataSummary folder)

**Get Data codes:** These set of programs are used to restructure the data which are used by analysis codes.

1. ***getAttentionExperimentDetails.m*** – This code gives the filenames of each session data.
2. ***getTrialTypes.m*** – This code is called by *getGoodIndices.m*
3. ***getInfoDATFile.m*** – This code is used to read relevant task related information and is called by *getGoodIndices.m.*
4. ***getGoodIndices.m*** – This code is *called by* *getBehavior.m*.
5. ***getBehavior.m***: This program gives the behavioral performance of the monkey in each session for all orientation changes which is used to choose the single orientation change whose performance is near 50%. This program is called by *getDataForAnalysis.m*

All the above codes are taken as such from MayoProjectPrograms. Once all the above data files and programs are in their respective folders then run the below program to obtain the restructured data for the MayoProject2:

1. ***getDataForAnalysis.m*** – This program concatenates LFP and spikes data for one single orientation of all sessions and attention condition. This datafile is saved locally in a new *savedDataForAnalysis* folder and used by the analysis codes. The saved datafile has following variables
2. goodLFPData: Contains LFP data of a single orientation change trials. This is a 1 x 2 cell (two array sides). Each cell has the dimension 25 (sessions) x 12 (attention conditions).
3. goodSpikesData: Contains LFP data of a single orientation change trials. This is a 1 x 2 cell (two array sides). Each cell has the dimension 25 (sessions) x 12 (attention conditions).
4. targetOnsetTimes (25 x 12): Contains the target onset time in MS of the chosen single orientation change trials for each condition and session.
5. nTrials (25 x 12): Contains number of trials in each attention condition for every session.
6. timeVals: The time points of the segmentedData.

**Analysis codes:** These set of programs are used to analyze the data. They take the locally saved data from *savedDataForAnalysis* folder obtained from getDataForAnalysis.m code.

1. ***aucAnalysisPower.m*** – This program gives PSDs, firing rates for every trial and electrode and computes dPrimes and AUCs.
2. ***ROCAnalysis.m*** – This program does the ROC analysis of the hits and miss trials of a given attention condition which is called by *aucAnalysisPower.m*

**Display codes:** These set of programs display the plots/figures.

1. ***plotAucAnalysisPower.m*** – This program plots the figure which displays the PSD, firing rate, dPrime and AUCs for a single electrode and these measures averaged across electrodes.
2. ***getPlotHandles.m*** – creates subplot layout for the figure.