Notes on ephys code

7/16/20 –

Building on recent meeting with JT and GF, need to run series of analyses already performing on cluster 1 vs cluster 2

6/19/20 – working on extracting the timestamps of each epoch in order to do some LFP processing on the data. It is in the spikestruct output as ‘epochTimes’

6/6/20

So… aside from the ‘AT\_CellSummary\_SG\_IS\_io\_V4’ code, the L/R distinction has been independent of whether we’re recording from L/R side – basically, the ipsi vs contra distinctions have been crap. Every case/recording is taken from R STN except for cases 3, 4, 11, 12, and 13

Created tsne\_SNsubtypes\_V4 – correctly identifies ipsi vs contra

6/1/20

Ephys extraction code flow:

Spiketrainexaction\_AnalysisStruct\_VX (creates the spikestructs) > FRanalysis\_helperfx\_VX (this calls on masterstruct; need to assemble the empty struct for input/outputs)

-spike strcut and masterstruct that are ‘V2’ are associated with Spiketrainexaction\_AnalysisStruct\_V4 and FRanalysis\_helperfx\_V2

- fx intermittentNeuron\_helperfx\_V1 is in the spiketrain extraction code and plays important role in filtering out certain trials

5/12/20

intermittentNeuron\_helperfx\_V1 is placed within ‘spiketrainexaction\_AnalysisStruct\_V4’ to index out trials we don’t want included in the spiketrain struct and subsequently the masterspike struct.

I need to change the FRanalysis\_helperfx\_V1 to cut out the trials that have intermittent firing, creating a V2 version. Actually, I think it’s the ‘spiketrainexaction\_AnalysisStruct\_V4’ that needs to be altered.

5/8

I want to extract a ‘new’ epoch, writing an updated version of ‘spiketrainexaction\_AnalysisStruct\_V3’ that im calling V4, goal will be for it to maybe calculate some new measures of psth using trapz and maybe do a new epoch center right around the feedback

Duplicated the masterspikestruct so there’s masterspikestruct2 and one minus the ‘2’ (not important for now)

5/7/20-

‘tsne\_SNsubtypes\_V1’ first half of code is useful for comparing different outputs of clustering/thresholding strategies. It produces a plot that uses Ramayya’s criteria (or closely matched ones) on our data – this might be useful as a supplemental figure.

Whole trial FR analysis 4/27/20

-for the ave FR as well as inc/dec/nodelta calculations, I’m going to want to calculate the ave FR, fx ‘FRanalysis\_helperfx\_V1’. This fx loads in data structs generated by fx ‘spiketrainexaction\_AnalysisStruct\_V2’ and the helper fx it calls ‘raster\_io\_spikeextraction\_V2’; note that ‘raster\_io\_spikeextraction\_V2’ needs ‘epochInfo’ input which is set up top in the ‘spiketrainexaction\_AnalysisStruct\_V2’.

Burst struct creation analysis 4/26/20

-adapted fx ‘spiketrainexaction\_AnalysisStruct\_V1’ from AT\_CellSumm\_SG\_IS\_io\_V4; purpose is to generate a struct that contains cell arrays w/ spike times in seconds for each trial. We’re looking to do this for the whole trial duration. Wrote raster\_io\_spikeextraction\_V1

, adapted from raster code to aid in this. Note the last few lines of code where things get saved out

-above works well, just be aware that for case1, spike3, clust2 the spiketimes seem a little weird because I’ve concat two clusters together.