

HW9: Population coding & decoding

You have two different data sets: features1 and features2. Each includes 1200 observations (e.g. trials) of 10 different neural signals. Each observation belongs to a condition (1 to 4). The data can be loaded from the following files:

features1.txt
features2.txt
conditions.txt

1. First, plot the mean response to each condition (1 to 4) for each of the 10 neurons in features1 and features2. (You can overlay them in the same panel if you like). What is the main difference between these populations?
2. Using features1, use any linear classifier to decode condition. Test your classifier with 10-fold cross-validation.
Report: (a) the overall accuracy (i.e. the overall proportion of observations that were correctly classified)
(b) the accuracy for each condition (i.e. the proportion of observations within each condition that were correctly classified)
3. Run your code again (repeat the steps in 2) with features2 and report the same results