Neuromatch Academy Teaching Assistant

*Teaching Demo Instructions*

As part of your application, we would like you to make a **4**​ **minute** video that showcases your teaching. We don’t want you to spend too long making this video, certainly no longer than 1 hour. You are not competing against others. We want as many qualified TAs as possible. Instead you are demonstrating to us that you are ready to teach! You can see a sample teaching demo here.

During the Neuromatch Academy summer course you will be leading hands-on tutorials live with a small group of students. Of course, in the Teaching Demo recording there will be no live students. But we’d like you to teach as if there were a live audience (though you do not need to interact with this fake audience).

In the remainder of this handout, we will provide a lesson plan / tutorial for teaching ridge-regression, as well as detailed instructions about what we would like you to submit.

# Problem Prompt

# Solution

Image of solutions to problem.

The comments we have put in place in our solution are there for your benefit. During your teach, feel free to comment or not comment your code as it feels appropriate!

# Learning Objectives

• State the advantages of regularization.

• Apply regression / ridge-regression to neural data

# Prior Knowledge

• Regression

• L2-norm

• Principal Components Analysis

# Lesson Plan

You can structure your four minute video any way you like. Here is a sample minute by minute breakdown in case it is useful.

< 1 min: Introduce yourself. Give a few sentences about who you are!

1 min: Give a very brief recap of what ridge regression is and why you might use it. While you should imagine that you are teaching a class of students, don’t feel the need to address them or ask them questions.

~3 mins: Type up the solution and explain how the code you are writing works as you are typing it

# How we will evaluate your video

We are looking for people who know their content knowledge and who are able to communicate well. We’re looking for quality over quantity, so don’t feel pressured to rush through everything. Instead, make sure the content you do get to is clear and easy to follow.

# Recording the video

Don’t fuss about production quality! We are more interested in who you are than on the quality of your audio :-).

We’d like you to record your lesson using Zoom (instructions below) since we are planning to teach sections using Zoom. It should be a “single take” and you shouldn’t do any post-production work on the video.

# Uploading the video

In your round 2 TA application you will need to provide a link to your sample teaching video. You can do this however you like. Possible options include but are not limited to sending a link to a private Youtube video, providing a link to a Google Drive file, or providing a link to a dropbox file. \*\*\*Pease make sure the sharing settings are set so that we will be able to access the video if we have the link. \*\*\*

# Length of the video

As we mentioned we want the video to be 4 minutes long. You don’t have to conclude nicely -- feel free to cut the video at 4 minutes, even if you aren’t quite done. Do not feel the need to overproduce your video! We are trying to scale here, we hope you understand :-)

If you have any questions, please email , with subject line:

# Zoom Instructions

* Open Zoom and press “New Meeting” (or “Host a Meeting”).
* Make sure your microphone is unmuted and your video is on.
* Zoom has a variety of teaching tools you can take advantage of (though none in particular are required). Press the “Share Screen” button and select one of the following:
  1. Choose the window of an IDE you have previously opened if you want to write code

○ Choose “Whiteboard” if you want to use the built-in whiteboard feature. Feel free to record an actual whiteboard if you have access to that as well, or to not use a whiteboard at all!

○ Choose “iPhone/iPad” if you’d like to share work on an iPad (having an iPad is **not** required).​

* Some tips for sharing your screen:
  1. To change what screen you’re sharing, hover over the floating green bar with the meeting ID to bring up the menu and hit “New Share”.

○ You can stop sharing your screen/whiteboard with the red “Stop Share” button.

* When you’re ready to record, bring up the menu and (if you have screen sharing) press “More” then “Record on this computer” (or just “Record” and then “Record on this computer” if you’re starting without screen sharing).
* Once you’re finished, hit the square Stop symbol to stop the recording, and then “End Meeting.” Once you’ve ended the meeting, Zoom will save the recording and should automatically open up the folder it was saved to (if not, go to “Documents/Zoom/[insert date of recording + name of Zoom meeting room]”).
* Upload the mp4 file in that folder (which should be called zoom\_0.mp4 or something similar).
* For more details or troubleshooting, see <https://support.zoom.us/hc/en-us/articles/201362473-Local-Recording>.​