

# Homework #4

CSE 599N: Machine Learning for Neuroscience

Professor Matt Golub

Due: **Wednesday** May 22, 2024 1:00pm

Please review all homework guidance posted on the website before submitting to Gradescope. Reminders:

- All code must be written in Python and all written work must be typeset (e.g. L<sup>A</sup>T<sub>E</sub>X).
- Please provide succinct answers and supporting reasoning for each question. Similarly, when discussing experimental results, concisely create tables and/or figures when appropriate to organize the experimental results. All explanations, tables, and figures for any particular part of a question must be grouped together.
- For every problem involving generating plots, please include the plots as part of your PDF submission.
- When submitting to Gradescope, please link each question from the homework in Gradescope to the location of its answer in your homework PDF. Failure to do so may result in deductions of up to 10% of the value of each question not properly linked. For instructions, see [https://www.gradescope.com/get\\_started#student-submission](https://www.gradescope.com/get_started#student-submission).

**Important:** By turning in this assignment (and all that follow), you acknowledge that you have read and understood the collaboration policy with humans and AI assistants alike: <https://courses.cs.washington.edu/courses/cse599n/24sp/assignments/>. Any questions about the policy should be raised at least 24 hours before the assignment is due. There are no warnings or second chances. If we suspect you have violated the collaboration policy, we will report it to the college of engineering who will complete an investigation. Not adhering to these reminders may result in point deductions.

## Instructions

For HW4, we have provided you with the following files:

- `HW4.pdf` (this file)
- `HW4a.ipynb` (Jupyter notebook containing the first assignment).
- `HW4b.ipynb` (Jupyter notebook containing the second assignment).

Please fill out each of the empty cells in the notebook with your answer for each sub-question. You can either make the notebook self-contained, with all of your code in it, or feel free to write additional Python code which you import and call from your notebook. Once completed, save the notebook as a PDF with all your plots generated.

## Submission

Please follow the following instructions to submit your assignment.

- a. Make sure your file is named `HW4a.ipynb` and `HW4b.ipynb`, and submit to the HW4 Code Gradescope assignment. If you have any additional Python code, please also submit these files to the same assignment.
- b. Convert your `HW4*.ipynb` files to PDFs, combine them, and submit this PDF to the HW4 Writeup Gradescope assignment. For both the code and writeup, you may submit as many times as you would like before the deadline.
- c. For the writeup, make sure to tag the pages which include your answers to the questions.

*Note:* For HW4, the writeup portion of the assignment is simply the PDF version of your combined `HW4*.ipynb` file, since there are no written answers.