

EE381V Statistical Machine Learning

Problem Set 4

April 6, 2024

- Due 11:59 p.m. May 5, 2024
- You may discuss homework problems with others but must submit your own **independent solution**.
- Beside accuracy and correctness of the solutions, please take care of clarity and style thereof as well. If writing the solutions by hand, make sure your handwriting is legible and that the scanned document is readable.
- **Please submit the solution via Gradescope.**

Problem 1 [15 pts]

Please watch the following `youtube` videos:

- (a) “What is a neural network?”
- (b) “Gradient descent, how neural networks learn.”
- (c) “What is back-propagation really doing?”

How many of these did you watch in their entirety? Please write down the answer (0-3)!

Programming Problems [45 pts]

Programming problems are posted in the `ipynb` file on Canvas, along with data. You should submit your code and the results of running it as an `ipynb` file. Here is a Jupyter notebook [tutorial](#). If you are uncomfortable using Python and strongly prefer other programming languages such as MATLAB, C++ or Java, you may use those languages instead.