

ECE C147/C247, Winter 2020

Neural Networks & Deep Learning

University of California, Los Angeles; Department of ECE

Homework #4

Prof. J.C. Kao

TAs: W. Feng, J. Lee, K. Liang,

M. Kleinman, C. Zheng

Due Wednesday, 12 Feb 2020, by 11:59pm to Gradescope.

100 points total.

1. (35 points) **Implementing different optimizers for a fully connected network.** Complete the Optimization.ipynb Jupyter notebook. Print out the entire workbook and relevant code and submit it as a pdf to gradescope. Download the CIFAR-10 dataset, as you did in HW #2 and #3.
2. (35 points) **Implementing batch normalization for a fully connected network.** Complete the Batch-Normalization.ipynb Jupyter notebook. Print out the entire workbook and relevant code and submit it as a pdf to gradescope.
3. (30 points) **Implementing dropout for a fully connected network, and optimizing it.** Complete the Dropout.ipynb Jupyter notebook. Print out the entire workbook and relevant code and submit it as a pdf to gradescope.