

ECE 09495/09595

Assignment 2

Instructions

1. Max Credit: 100 Points
2. All questions are from the Textbook – Dive into Deep Learning (<https://d2l.ai/>).
3. Submit a single PDF.
4. Please do not include code. Upload the code to your GitHub, share it publicly and add link in the assignment.

Questions

1. Section 6.6.4 (all questions) 40 points

Expected Answers:

- a. Q1 - Provide epoch vs loss/accuracy (training and validation) curves (as given at the end of section 6.2.2).
- b. Q2 - Provide a single set of epoch vs loss/accuracy (training and validation) curves for the best model you could train. This will require substantial hyperparameter tuning. Please provide only one graph of the MLP that performs the best.
- c. Q3 - Provide a set of epoch vs loss/accuracy (training and validation) curves for the best model.
- d. Q4 – A plot for the activations.

2. Section 7.1.6 – Question 4 5 points
3. Section 7.2.5 – Question 3 5 points
4. Section 7.4.5 – Question 3 5 points
5. Section 7.4.5 – Question 4 5 points
6. Section 7.5.8 – Question 2 5 points
7. Section 7.5.8 – Question 3 5 points
8. Section 7.5.8 – Question 4 5 points
9. Section 7.6.6 – Question 5 5 points
10. Section 7.7.7 – Question 1 5 points
11. Section 7.7.7 – Question 2 5 points
12. Write a 2-page summary on the EfficientNet paper 10 points

Blog - <https://ai.googleblog.com/2019/05/efficientnet-improving-accuracy-and.html>

Paper - <https://arxiv.org/abs/1905.11946>