

CS492C Programming Assignment #1

Due: 2018.04.27 23:59 KST

Objective: Implement feed-forward(fully-connected) network.

Requirements:

- 1) We provide arbitrary image dataset that contains 10,000 train, 2,000 validation data and 50,000 test data. Labels are provided only for train and validation data.
- 2) We also provide a skeleton code, so you can write your own network, loss function and optimizer.
- 3) Your goal is to design your own feed-forward(fully-connected) networks that have 3/5/7 depth and achieve the high accuracy of prediction result on the test dataset. (DO NOT use pre-built models or pre-trained weights)
- 4) When you build deeper version of networks, you need to reuse shallow versions. (e.g. when you build 5-layer network, the first 3 layers should be the same ones used for 3-layer network.)

Expected output:

- 1) The result of test dataset must be 1 x 50,000 numpy array, so DO NOT modify the prediction part of skeleton code.

Deliveries:

- 1) A source file and a prediction results for each version of networks with format '(student_ID)_network_(depth).npz'. (e.g. 20181234_network_3.npz)
- 2) Report the number of parameters of your networks (3/5/7) and the performance. Analyze how and why the performance varies according to the number of parameters. 'your_student_ID.pdf'
- 3) Upload your work (source files, result, and report document) on KLMS with one zip file.

Policies:

- 1) This project is an individual assignment. Cheating or copying/using others' work get 0 point.
- 2) Programming language is limited to python ≥ 2.7 and ≥ 3.4 , and framework is limited to tensorflow $= 1.4$.
- 3) If your code does not run, you will get 0 point.
- 4) Late submission will get 0 point.