

Quiz 4

Oct/12/2022

CS 280: Fall 2022

Instructor: Lan Xu

Name: _____

Number: _____

On your left: _____

On your right: _____

Problem 1. (10 points) *Batch Normalization*. Show that the BN operator is differentiable. You can use the conclusion that elementary function are differentiable.

Problem 2. (10 points) *Res-Net*. Consider a Res-Net block, where F is a concatenation of two 3×3 conv + ReLU layers:

$$y = F(x) + x$$

Assume x , intermediate layer and y are $16 \times 16 \times 64$ feature map. Modify F based on the bottleneck structure, such that the number of parameters of the block is reduced by 50% – 60%.

You need to draw the network structure and specify the kernel size and the range of the channel number.