Experiment Setting

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I use Google colab to run my code

(1) Hardware specification

CPU: Intel(R) Xeon(R) CPU @ 2.30GHz

GPU: Tesla T4

RAM: 12.68GB

(2) Package version

Torch: 1.12.1+cu113

Torchvision: 0.13.1+cu113

Tenseal: 0.3.12

(3) Experiment parameter

- Question 2:

   Train parameter:

   Loss function: CrossEntropyLoss

   Optimizer: Adam with learning rate=0.001

   Epochs: 10

   Batch size: 50

   Encrypt parameter:

   poly_modulus_degree: 4096

   plain_modulus: 1032193

- Question 3:

   Encrypt parameter:

   poly_modulus_degree: 8192

   coeff_mod_bit_sizes: [60, 40, 40, 60]

   global_scale: 2^{40}

(4) Question 2 Model

Training Loss (epoch 10): 0.014636

Accuracy of the network on the test images: 97 %