[HW4_prob2_1]_VGG16_Loss

October 30, 2022

```
[1]: import argparse
     import os
     import time
     import shutil
     import torch
     import torch.nn as nn
     import torch.optim as optim
     import torch.nn.functional as F
     import torch.backends.cudnn as cudnn
     import torchvision
     import torchvision.transforms as transforms
     from models import *
     global best_prec
     use_gpu = torch.cuda.is_available()
     print('=> Building model...')
     batch_size = 128
     model_name = "VGG16_1"
     model = VGG16()
     print(model)
     normalize = transforms.Normalize(mean=[0.491, 0.482, 0.447], std=[0.247, 0.243,
     →0.262])
     train_dataset = torchvision.datasets.CIFAR10(
         root='./data',
         train=True,
```

```
download=True,
   transform=transforms.Compose([
        transforms.RandomCrop(32, padding=4),
        transforms.RandomHorizontalFlip(),
       transforms.ToTensor(),
       normalize,
   1))
trainloader = torch.utils.data.DataLoader(train_dataset, batch_size=batch_size,_
⇒shuffle=True, num workers=2)
test_dataset = torchvision.datasets.CIFAR10(
   root='./data',
   train=False,
   download=True,
   transform=transforms.Compose([
       transforms.ToTensor(),
       normalize,
   ]))
testloader = torch.utils.data.DataLoader(test dataset, batch size=batch size,
⇒shuffle=False, num_workers=2)
print_freq = 100 # every 100 batches, accuracy printed. Here, each batch
→ includes "batch_size" data points
# CIFAR10 has 50,000 training data, and 10,000 validation data.
def train(trainloader, model, criterion, optimizer, epoch):
   batch_time = AverageMeter()
   data_time = AverageMeter()
   losses = AverageMeter()
   top1 = AverageMeter()
   model.train()
   end = time.time()
   for i, (input, target) in enumerate(trainloader):
        # measure data loading time
        data_time.update(time.time() - end)
       input, target = input.cuda(), target.cuda()
        # compute output
        output = model(input)
```

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loss = criterion(output, target)
        # measure accuracy and record loss
        prec = accuracy(output, target)[0]
        losses.update(loss.item(), input.size(0))
        top1.update(prec.item(), input.size(0))
        # compute gradient and do SGD step
        optimizer.zero grad()
        loss.backward()
        optimizer.step()
        # measure elapsed time
        batch_time.update(time.time() - end)
        end = time.time()
        if i % print_freq == 0:
            print('Epoch: [{0}][{1}/{2}]\t'
                  'Time {batch_time.val:.3f} ({batch_time.avg:.3f})\t'
                  'Data {data_time.val:.3f} ({data_time.avg:.3f})\t'
                  'Loss {loss.val:.4f} ({loss.avg:.4f})\t'
                  'Prec {top1.val:.3f}% ({top1.avg:.3f}%)'.format(
                   epoch, i, len(trainloader), batch_time=batch_time,
                   data_time=data_time, loss=losses, top1=top1))
def validate(val_loader, model, criterion ):
    batch_time = AverageMeter()
    losses = AverageMeter()
    top1 = AverageMeter()
    # switch to evaluate mode
    model.eval()
    end = time.time()
    with torch.no_grad():
        for i, (input, target) in enumerate(val_loader):
            input, target = input.cuda(), target.cuda()
            # compute output
            output = model(input)
            loss = criterion(output, target)
            # measure accuracy and record loss
```

```
prec = accuracy(output, target)[0]
            losses.update(loss.item(), input.size(0))
            top1.update(prec.item(), input.size(0))
            # measure elapsed time
            batch_time.update(time.time() - end)
            end = time.time()
            if i % print_freq == 0: # This line shows how frequently print out_
\rightarrow the status. e.g., i%5 => every 5 batch, prints out
                print('Test: [{0}/{1}]\t'
                  'Time {batch_time.val:.3f} ({batch_time.avg:.3f})\t'
                  'Loss {loss.val:.4f} ({loss.avg:.4f})\t'
                  'Prec {top1.val:.3f}% ({top1.avg:.3f}%)'.format(
                   i, len(val_loader), batch_time=batch_time, loss=losses,
                   top1=top1))
    print(' * Prec {top1.avg:.3f}% '.format(top1=top1))
    return top1.avg
def accuracy(output, target, topk=(1,)):
    """Computes the precision@k for the specified values of k"""
    \max k = \max(\text{top}k)
    batch_size = target.size(0)
    _, pred = output.topk(maxk, 1, True, True)
    pred = pred.t()
    correct = pred.eq(target.view(1, -1).expand_as(pred))
   res = []
    for k in topk:
        correct_k = correct[:k].view(-1).float().sum(0)
        res.append(correct_k.mul_(100.0 / batch_size))
    return res
class AverageMeter(object):
    """Computes and stores the average and current value"""
    def __init__(self):
        self.reset()
    def reset(self):
       self.val = 0
        self.avg = 0
        self.sum = 0
        self.count = 0
```

```
def update(self, val, n=1):
        self.val = val
        self.sum += val * n
        self.count += n
        self.avg = self.sum / self.count
def save checkpoint(state, is best, fdir):
    filepath = os.path.join(fdir, 'checkpoint.pth')
    torch.save(state, filepath)
    if is best:
         shutil.copyfile(filepath, os.path.join(fdir, 'model_best.pth.tar'))
def adjust_learning_rate(optimizer, epoch):
     """For resnet, the lr starts from 0.1, and is divided by 10 at 80 and 120_{\sqcup}
 ⇔epochs"""
    adjust_list = [150, 225]
    if epoch in adjust_list:
        for param group in optimizer.param groups:
             param_group['lr'] = param_group['lr'] * 0.1
#model = nn.DataParallel(model).cuda()
#all_params = checkpoint['state_dict']
#model.load_state_dict(all_params, strict=False)
#criterion = nn.CrossEntropyLoss().cuda()
#validate(testloader, model, criterion)
=> Building model...
VGG(
  (features): Sequential(
    (0): Conv2d(3, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (1): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    (2): ReLU(inplace=True)
    (3): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (4): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True,
track running stats=True)
    (5): ReLU(inplace=True)
    (6): MaxPool2d(kernel_size=2, stride=2, padding=0, dilation=1,
ceil_mode=False)
    (7): Conv2d(64, 128, kernel size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (8): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True,
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track_running_stats=True)
    (9): ReLU(inplace=True)
    (10): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (11): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True,
track running stats=True)
    (12): ReLU(inplace=True)
    (13): MaxPool2d(kernel_size=2, stride=2, padding=0, dilation=1,
ceil_mode=False)
    (14): Conv2d(128, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (15): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    (16): ReLU(inplace=True)
    (17): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (18): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    (19): ReLU(inplace=True)
    (20): Conv2d(256, 256, kernel size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (21): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    (22): ReLU(inplace=True)
    (23): MaxPool2d(kernel_size=2, stride=2, padding=0, dilation=1,
ceil_mode=False)
    (24): Conv2d(256, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (25): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    (26): ReLU(inplace=True)
    (27): Conv2d(512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (28): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True,
track running stats=True)
    (29): ReLU(inplace=True)
    (30): Conv2d(512, 512, kernel size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (31): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    (32): ReLU(inplace=True)
    (33): MaxPool2d(kernel_size=2, stride=2, padding=0, dilation=1,
ceil_mode=False)
    (34): Conv2d(512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False)
    (35): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    (36): ReLU(inplace=True)
```

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(37): Conv2d(512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
    bias=False)
        (38): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True,
    track_running_stats=True)
        (39): ReLU(inplace=True)
        (40): Conv2d(512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
    bias=False)
        (41): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True,
    track_running_stats=True)
        (42): ReLU(inplace=True)
        (43): MaxPool2d(kernel_size=2, stride=2, padding=0, dilation=1,
    ceil_mode=False)
        (44): AvgPool2d(kernel_size=1, stride=1, padding=0)
      )
      (classifier): Linear(in_features=512, out_features=10, bias=True)
    )
    Files already downloaded and verified
    Files already downloaded and verified
[2]: # This cell won't be given, but students will complete the training
     lr = 4.4e-2
     weight_decay = 1.0e-4
     epochs = 80
     best_prec = 0
     #model = nn.DataParallel(model).cuda()
     model.cuda()
     criterion = nn.CrossEntropyLoss().cuda()
     optimizer = torch.optim.SGD(model.parameters(), lr=lr, momentum=0.9, __
     →weight_decay=weight_decay)
     #cudnn.benchmark = True
     if not os.path.exists('result'):
         os.makedirs('result')
     fdir = 'result/'+str(model name)
     if not os.path.exists(fdir):
         os.makedirs(fdir)
     for epoch in range(0, epochs):
         adjust_learning_rate(optimizer, epoch)
         train(trainloader, model, criterion, optimizer, epoch)
         # evaluate on test set
         print("Validation starts")
```

```
prec = validate(testloader, model, criterion)
    # remember best precision and save checkpoint
    is_best = prec > best_prec
    best_prec = max(prec,best_prec)
    print('best acc: {:1f}'.format(best_prec))
    save_checkpoint({
         'epoch': epoch + 1,
         'state dict': model.state dict(),
         'best_prec': best_prec,
         'optimizer': optimizer.state_dict(),
    }, is_best, fdir)
/opt/conda/lib/python3.9/site-packages/torch/nn/functional.py:718: UserWarning:
Named tensors and all their associated APIs are an experimental feature and
subject to change. Please do not use them for anything important until they are
released as stable. (Triggered internally at
/pytorch/c10/core/TensorImpl.h:1156.)
  return torch.max_pool2d(input, kernel_size, stride, padding, dilation,
ceil_mode)
Epoch: [0] [0/391]
                        Time 0.771 (0.771)
                                                 Data 0.677 (0.677)
                                                                          Loss
2.5002 (2.5002)
                   Prec 9.375% (9.375%)
                                                 Data 0.002 (0.008)
Epoch: [0] [100/391]
                        Time 0.044 (0.051)
                                                                          Loss
2.2862 (2.8068)
                   Prec 15.625% (11.170%)
                                                 Data 0.002 (0.005)
Epoch: [0] [200/391]
                        Time 0.044 (0.048)
                                                                          Loss
2.2531 (2.5453)
                   Prec 12.500% (11.909%)
                        Time 0.094 (0.057)
                                                 Data 0.002 (0.004)
Epoch: [0] [300/391]
                                                                          Loss
2.2484 (2.4498)
                   Prec 8.594% (12.246%)
Validation starts
Test: [0/79]
                Time 0.458 (0.458)
                                         Loss 2.2971 (2.2971)
                                                                 Prec 19.531%
(19.531\%)
 * Prec 17.030%
best acc: 17.030000
                        Time 0.852 (0.852)
                                                 Data 0.812 (0.812)
Epoch: [1] [0/391]
                                                                          Loss
2.2252 (2.2252)
                   Prec 14.844% (14.844%)
Epoch: [1] [100/391]
                        Time 0.094 (0.101)
                                                 Data 0.002 (0.010)
                                                                          Loss
1.9321 (2.0466)
                   Prec 23.438% (20.158%)
Epoch: [1] [200/391]
                                                 Data 0.002 (0.006)
                        Time 0.061 (0.097)
                                                                          Loss
1.8629 (2.0084)
                   Prec 21.094% (20.064%)
                                                 Data 0.001 (0.005)
Epoch: [1] [300/391]
                        Time 0.094 (0.094)
                                                                          Loss
1.8712 (1.9743)
                   Prec 21.875% (20.767%)
Validation starts
Test: [0/79]
                Time 0.993 (0.993)
                                        Loss 1.9068 (1.9068)
                                                                 Prec 25.000%
(25.000\%)
 * Prec 24.500%
best acc: 24.500000
Epoch: [2] [0/391]
                        Time 0.693 (0.693)
                                                 Data 0.650 (0.650)
                                                                          Loss
```

1 0710 (1 0710)	00 4001/ (00 4001/)		
1.8748 (1.8748) Prec		D	(0.000)
Epoch: [2] [100/391]		Data 0.002	(0.008) Loss
1.8215 (1.8681) Prec		D	(0.005)
Epoch: [2] [200/391]	Time 0.066 (0.097)	Data 0.002	(0.005) Loss
1.8717 (1.8582) Prec			
Epoch: [2][300/391]		Data 0.002	(0.005) Loss
1.8278 (1.8483) Prec	25.781% (25.548%)		
Validation starts			
Test: [0/79] Time 0.4	471 (0.471) Los	s 1.9274 (1.927	4) Prec 28.125%
(28.125%)			
* Prec 29.200%			
best acc: 29.200000			
Epoch: [3][0/391]	Time 0.768 (0.768)	Data 0.727	(0.727) Loss
1.7947 (1.7947) Prec	26.562% (26.562%)		
Epoch: [3][100/391]	Time 0.094 (0.101)	Data 0.001	(0.009) Loss
1.6133 (1.7753) Prec	34.375% (30.221%)		
Epoch: [3][200/391]		Data 0.002	(0.005) Loss
1.7007 (1.7480) Prec			
Epoch: [3][300/391]		Data 0.002	(0.004) Loss
1.5147 (1.7195) Prec		2404 01002	(0.001) =000
Validation starts			
Test: [0/79] Time 0.5	556 (0.556) Loss	3 1 8219 (1 8219	9) Prec 31 250%
(31.250%)	200 (0.000)	3 1.0210 (1.021	0) 1100 01.200%
* Prec 34.940%			
best acc: 34.940000			
Epoch: [4] [0/391]	Timo 0 056 (0 056)	Da+a 0 011	(0.911) Loss
1.5012 (1.5012) Prec		Data 0.911	(0.911) LOSS
		D-+- 0 001	(0.011)
Epoch: [4] [100/391]		Data 0.001	(0.011) Loss
1.6523 (1.5781) Prec		D-+- 0 00F	(0.000)
Epoch: [4] [200/391]		Data 0.005	(0.006) Loss
1.5947 (1.5481) Prec		D . 0 000	(0.005)
Epoch: [4] [300/391]		Data 0.002	(0.005) Loss
1.4125 (1.5176) Prec	48.438% (41.580%)		
Validation starts			-
	797 (0.797) Los	s 1.3442 (1.344)	2) Prec 54.688%
(54.688%)			
* Prec 49.320%			
best acc: 49.320000			
Epoch: [5][0/391]		Data 0.699	(0.699) Loss
1.2436 (1.2436) Prec	56.250% (56.250%)		
Epoch: [5][100/391]	Time 0.094 (0.101)	Data 0.001	(0.008) Loss
1.1835 (1.3409) Prec	50.000% (49.706%)		
Epoch: [5][200/391]	Time 0.044 (0.097)	Data 0.002	(0.005) Loss
1.3148 (1.2985) Prec	49.219% (51.543%)		
Epoch: [5][300/391]	Time 0.094 (0.094)	Data 0.001	(0.004) Loss
1.0009 (1.2636) Prec	66.406% (53.333%)		
Validation starts			
Test: [0/79] Time 0.4	452 (0.452) Loss	s 1.1711 (1.171	1) Prec 54.688%

(54.688%)					
* Prec 55.900% best acc: 55.900000					
Epoch: [6] [0/391] Time 1.057 ((1 OE7)	Data	1 012	(1.012)	Logg
1.1657 (1.1657) Prec 60.938% (60.		Data	1.012	(1.012)	LUSS
Epoch: [6] [100/391] Time 0.095 (Data	0 001	(0.012)	Loss
1.0198 (1.0688) Prec 60.938% (61.		Data	0.001	(0.012)	цовь
Epoch: [6] [200/391] Time 0.193 (Data	0 001	(0.007)	Loss
0.8349 (1.0546) Prec 70.312% (62.		Dava	0.001	(0.001)	Довь
Epoch: [6] [300/391] Time 0.094 (Data	0.002	(0.005)	Loss
1.0403 (1.0303) Prec 66.406% (63.		Dava	0.002	(0.000)	2000
Validation starts	00 1/6/				
Test: [0/79] Time 0.622 (0.622)	Loss	0.9697	(0.9697	') Prec	65.625%
(65.625%)	2000	0.000	(0.000)	, 1100	00.02070
* Prec 63.860%					
best acc: 63.860000					
Epoch: [7][0/391] Time 1.022 ((1.022)	Data	0.983	(0.983)	Loss
0.9353 (0.9353) Prec 66.406% (66.				, , , , , , , , , , , , , , , , , , , ,	
Epoch: [7][100/391] Time 0.097 (Data	0.002	(0.011)	Loss
0.9957 (0.9054) Prec 67.188% (68.					
Epoch: [7][200/391] Time 0.088 (Data	0.001	(0.006)	Loss
0.6970 (0.8840) Prec 74.219% (68.					
Epoch: [7][300/391] Time 0.095 (Data	0.003	(0.005)	Loss
0.7720 (0.8747) Prec 76.562% (69.	132%)				
Validation starts					
Vallaation boal ob					
Test: [0/79] Time 0.387 (0.387)	Loss	1.0452	(1.0452	?) Prec	57.812%
	Loss	1.0452	(1.0452	?) Prec	57.812%
Test: [0/79] Time 0.387 (0.387)	Loss	1.0452	(1.0452	?) Prec	57.812%
Test: [0/79] Time 0.387 (0.387) (57.812%)	Loss	1.0452	(1.0452	?) Prec	57.812%
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010%				(1.036)	
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000	(1.086)				
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 ((1.086) 625%)	Data	1.036		
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73.	(1.086) 625%) (0.104) 105%)	Data Data	1.036	(1.036) (0.012)	Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.000)	(1.086) 625%) (0.104) 105%) (0.099)	Data Data	1.036	(1.036) (0.012)	Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73.	(1.086) 625%) (0.104) 105%) (0.099)	Data Data	1.036	(1.036) (0.012)	Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.006)	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096)	Data Data Data	1.036 0.002 0.002	(1.036) (0.012) (0.007)	Loss Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73.	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096)	Data Data Data	1.036 0.002 0.002	(1.036) (0.012) (0.007)	Loss Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096) 640%)	Data Data Data Data	1.036 0.002 0.002 0.001	(1.036) (0.012) (0.007) (0.006)	Loss Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646)	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096) 640%)	Data Data Data Data	1.036 0.002 0.002 0.001	(1.036) (0.012) (0.007) (0.006)	Loss Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%)	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096) 640%)	Data Data Data Data	1.036 0.002 0.002 0.001	(1.036) (0.012) (0.007) (0.006)	Loss Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%) * Prec 72.800%	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096) 640%)	Data Data Data Data	1.036 0.002 0.002 0.001	(1.036) (0.012) (0.007) (0.006)	Loss Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%) * Prec 72.800% best acc: 72.800000	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096) 640%)	Data Data Data Data	1.036 0.002 0.002 0.001 (0.7521	(1.036) (0.012) (0.007) (0.006)	Loss Loss Loss 71.094%
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%) * Prec 72.800% best acc: 72.800000 Epoch: [9] [0/391] Time 0.670 (0.670)	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096) 640%) Loss	Data Data Data Data	1.036 0.002 0.002 0.001 (0.7521	(1.036) (0.012) (0.007) (0.006)	Loss Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%) * Prec 72.800% best acc: 72.800000 Epoch: [9] [0/391] Time 0.670 (0.6084 (0.6084) Prec 79.688% (79.	(1.086) (625%) (0.104) 105%) (0.099) 278%) (0.096) 640%) Loss	Data Data Data Data Data Data	1.036 0.002 0.002 0.001 (0.7521	(1.036) (0.012) (0.007) (0.006) Prec	Loss Loss Loss T1.094%
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%) * Prec 72.800% best acc: 72.800000 Epoch: [9] [0/391] Time 0.670 (0.6084 (0.6084) Prec 79.688% (79. Epoch: [9] [100/391] Time 0.094 (0.6084)	(1.086) (625%) (0.104) (0.099) 278%) (0.096) (640%) Loss (0.670) (688%) (0.100)	Data Data Data Data Data Data	1.036 0.002 0.002 0.001 (0.7521	(1.036) (0.012) (0.007) (0.006)	Loss Loss Loss T1.094%
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%) * Prec 72.800% best acc: 72.800000 Epoch: [9] [0/391] Time 0.670 (0.6084 (0.6084) Prec 79.688% (79. Epoch: [9] [100/391] Time 0.094 (0.8063 (0.6784) Prec 72.656% (76.	(1.086) 625%) (0.104) 105%) (0.099) 278%) (0.096) 640%) Loss (0.670) 688%) (0.100) 957%)	Data Data Data Data Data Data Data	1.036 0.002 0.002 0.001 (0.7521 0.616 0.001	(1.036) (0.012) (0.007) (0.006) Description Prec (0.616) (0.007)	Loss Loss Loss T1.094% Loss Loss
Test: [0/79] Time 0.387 (0.387) (57.812%) * Prec 65.010% best acc: 65.010000 Epoch: [8] [0/391] Time 1.086 (0.9526 (0.9526) Prec 65.625% (65. Epoch: [8] [100/391] Time 0.094 (0.6766 (0.7731) Prec 75.781% (73. Epoch: [8] [200/391] Time 0.093 (0.6302 (0.7662) Prec 76.562% (73. Epoch: [8] [300/391] Time 0.095 (0.6925 (0.7555) Prec 71.875% (73. Validation starts Test: [0/79] Time 0.646 (0.646) (71.094%) * Prec 72.800% best acc: 72.800000 Epoch: [9] [0/391] Time 0.670 (0.6084 (0.6084) Prec 79.688% (79. Epoch: [9] [100/391] Time 0.094 (0.6084)	(1.086) (625%) (0.104) 105%) (0.099) 278%) (0.096) 640%) Loss (0.670) 688%) (0.100) 957%) (0.097)	Data Data Data Data Data Data Data	1.036 0.002 0.002 0.001 (0.7521 0.616 0.001	(1.036) (0.012) (0.007) (0.006) Description Prec (0.616) (0.007)	Loss Loss Loss T1.094%

Epoch: [9][300/391] Time 0.096 (0.094) 0.6531 (0.6784) Prec 76.562% (76.799%)	Data 0.001 (0.004) Loss
Validation starts Test: [0/79] Time 0.642 (0.642) Loss (77.344%)	0.7252 (0.7252) Prec 77.344%
* Prec 75.600% best acc: 75.600000	
	D-+- 0 002 (0 002)
Epoch: [10] [0/391] Time 0.965 (0.965)	Data 0.923 (0.923) Loss
0.7227 (0.7227) Prec 71.875% (71.875%)	
Epoch: [10][100/391] Time 0.094 (0.103)	Data 0.002 (0.011) Loss
0.4168 (0.6112) Prec 86.719% (79.270%)	
Epoch: [10][200/391] Time 0.092 (0.099)	Data 0.002 (0.007) Loss
0.7274 (0.6088) Prec 75.781% (79.454%)	
Epoch: [10][300/391] Time 0.095 (0.096)	Data 0.002 (0.005) Loss
0.6083 (0.6035) Prec 77.344% (79.529%)	
Validation starts	
Test: [0/79] Time 0.672 (0.672) Loss	0 4928 (0 4928) Prec 84 375%
(84.375%)	0.1020 (0.1020) 1100 01.0/0/
* Prec 78.240%	
best acc: 78.240000	D . 0 011 (0 011) T
Epoch: [11] [0/391] Time 0.651 (0.651)	Data 0.611 (0.611) Loss
0.5884 (0.5884) Prec 80.469% (80.469%)	
Epoch: [11][100/391] Time 0.095 (0.100)	Data 0.002 (0.008) Loss
0.5358 (0.5518) Prec 83.594% (81.173%)	
Epoch: [11][200/391] Time 0.091 (0.098)	Data 0.002 (0.006) Loss
0.5326 (0.5525) Prec 75.000% (81.040%)	
Epoch: [11][300/391] Time 0.095 (0.096)	Data 0.002 (0.004) Loss
0.4956 (0.5470) Prec 78.125% (81.260%)	
Validation starts	
Test: [0/79] Time 0.826 (0.826) Loss	0.4245 (0.4245) Prec 85.938%
(85.938%)	1100 00.000%
* Prec 81.740%	
best acc: 81.740000	D + 4 000 (4 000) I
Epoch: [12] [0/391] Time 1.107 (1.107)	Data 1.063 (1.063) Loss
0.5173 (0.5173) Prec 83.594% (83.594%)	
Epoch: [12][100/391] Time 0.094 (0.104)	Data 0.001 (0.012) Loss
0.5682 (0.5102) Prec 78.906% (82.867%)	
Epoch: [12][200/391] Time 0.091 (0.099)	Data 0.001 (0.007) Loss
0.5058 (0.5102) Prec 83.594% (82.809%)	
Epoch: [12][300/391] Time 0.094 (0.095)	Data 0.001 (0.006) Loss
0.5054 (0.5116) Prec 81.250% (82.807%)	
Validation starts	
	0.5500 (0.5500) Prec 80.469%
(80.469%)	
* Prec 78.170%	
best acc: 81.740000	
Epoch: [13] [0/391] Time 0.775 (0.775)	Data 0 733 (0 733) I acc
-	Data 0.733 (0.733) Loss
0.6353 (0.6353) Prec 79.688% (79.688%)	

Epoch: [13][100/391] Time 0.09		Data	0.001	(0.009)	Loss
0.6341 (0.4738) Prec 83.594% (Epoch: [13] [200/391] Time 0.09	4 (0.097)	Data	0.001	(0.006)	Loss
0.5444 (0.4616) Prec 78.906% (Epoch: [13] [300/391] Time 0.09 0.7323 (0.4679) Prec 74.219% (4 (0.095)	Data	0.001	(0.004)	Loss
Validation starts Test: [0/79] Time 0.493 (0.493 (85.156%)) Loss	0.4554	(0.4554	1) Prec	85.156%
* Prec 82.480%					
best acc: 82.480000					
Epoch: [14] [0/391] Time 0.71	4 (0.714)	Data	0.669	(0.669)	Loss
0.3938 (0.3938) Prec 88.281% (88.281%)				
Epoch: [14][100/391] Time 0.09	4 (0.100)	Data	0.002	(0.008)	Loss
0.4001 (0.4204) Prec 88.281% (
Epoch: [14][200/391] Time 0.09	3 (0.098)	Data	0.001	(0.005)	Loss
0.4333 (0.4309) Prec 84.375% (85.487%)				
Epoch: [14][300/391] Time 0.09	5 (0.095)	Data	0.001	(0.005)	Loss
0.5235 (0.4352) Prec 83.594% (85.421%)				
Validation starts					
Test: [0/79] Time 0.642 (0.642) Loss	0.4689	(0.4689	9) Prec	83.594%
(83.594%)					
* Prec 80.930%					
best acc: 82.480000					
Epoch: [15] [0/391] Time 0.77	2 (0.772)	Data	0.731	(0.731)	Loss
0.4740 (0.4740) Prec 83.594% (
Epoch: [15][100/391] Time 0.09		Data	0.002	(0.009)	Loss
0.5188 (0.4012) Prec 83.594% (
Epoch: [15][200/391] Time 0.09		Data	0.002	(0.006)	Loss
0.4334 (0.3982) Prec 86.719% (
Epoch: [15] [300/391] Time 0.09		Data	0.002	(0.005)	Loss
0.3428 (0.4028) Prec 89.062% (
Validation starts					
Test: [0/79] Time 0.701 (0.701) Loss	0.3792	(0.3792	2) Prec	87.500%
(87.500%)					
* Prec 85.810%					
best acc: 85.810000					
Epoch: [16] [0/391] Time 1.04	2 (1.042)	Data	1.002	(1.002)	Loss
0.4960 (0.4960) Prec 85.156% (
Epoch: [16][100/391] Time 0.09	3 (0.104)	Data	0.002	(0.011)	Loss
0.4147 (0.3741) Prec 86.719% (87.338%)				
Epoch: [16][200/391] Time 0.08	8 (0.099)	Data	0.002	(0.007)	Loss
0.3314 (0.3841) Prec 88.281% (
Epoch: [16][300/391] Time 0.09	4 (0.096)	Data	0.002	(0.005)	Loss
0.4159 (0.3803) Prec 85.156% (87.051%)				
Validation starts					
Test: [0/79] Time 0.529 (0.529) Loss	0.4409	(0.4409	9) Prec	86.719%
(86.719%)					

* Prec 80.770%	
best acc: 85.810000	
Epoch: [17] [0/391] Time 0.746 (0.746)	Data 0.706 (0.706) Loss
0.3660 (0.3660) Prec 86.719% (86.719%)	
Epoch: [17][100/391] Time 0.095 (0.101)	Data 0.001 (0.009) Loss
0.2817 (0.3556) Prec 86.719% (87.987%)	
Epoch: [17][200/391] Time 0.092 (0.097)	Data 0.002 (0.006) Loss
0.3741 (0.3558) Prec 84.375% (87.970%)	
Epoch: [17][300/391] Time 0.094 (0.095)	Data 0.002 (0.004) Loss
0.3383 (0.3594) Prec 90.625% (87.822%)	
Validation starts	
Test: [0/79] Time 0.517 (0.517) Loss	s 0.6008 (0.6008) Prec 79.688%
(79.688%)	
* Prec 82.630%	
best acc: 85.810000	
Epoch: [18] [0/391] Time 0.814 (0.814)	Data 0.766 (0.766) Loss
0.3056 (0.3056) Prec 86.719% (86.719%)	
Epoch: [18] [100/391] Time 0.094 (0.101)	Data 0.001 (0.009) Loss
0.2693 (0.3380) Prec 89.062% (88.660%)	
Epoch: [18][200/391] Time 0.092 (0.098)	Data 0.002 (0.006) Loss
0.2693 (0.3379) Prec 91.406% (88.604%)	, , , , , , , , , , , , , , , , , , ,
Epoch: [18][300/391] Time 0.094 (0.094)	Data 0.001 (0.004) Loss
0.2443 (0.3373) Prec 92.188% (88.611%)	
Validation starts	
Test: [0/79] Time 0.488 (0.488) Loss	s 0.4600 (0.4600) Prec 85.938%
Test: [0/79] Time 0.488 (0.488) Loss (85.938%)	s 0.4600 (0.4600) Prec 85.938%
(85.938%)	s 0.4600 (0.4600) Prec 85.938%
(85.938%) * Prec 84.200%	s 0.4600 (0.4600) Prec 85.938%
(85.938%) * Prec 84.200% best acc: 85.810000	
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764)	
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%)	Data 0.723 (0.723) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101)	
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120%	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120% best acc: 85.810000	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss s 0.4575 (0.4575) Prec 83.594%
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120% best acc: 85.810000 Epoch: [20] [0/391] Time 0.764 (0.764)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss s 0.4575 (0.4575) Prec 83.594%
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120% best acc: 85.810000 Epoch: [20] [0/391] Time 0.764 (0.764) 0.3101 (0.3101) Prec 90.625% (90.625%)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss s 0.4575 (0.4575) Prec 83.594% Data 0.714 (0.714) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120% best acc: 85.810000 Epoch: [20] [0/391] Time 0.764 (0.764) 0.3101 (0.3101) Prec 90.625% (90.625%) Epoch: [20] [100/391] Time 0.094 (0.101)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss s 0.4575 (0.4575) Prec 83.594% Data 0.714 (0.714) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120% best acc: 85.810000 Epoch: [20] [0/391] Time 0.764 (0.764) 0.3101 (0.3101) Prec 90.625% (90.625%) Epoch: [20] [100/391] Time 0.094 (0.101) 0.2744 (0.2976) Prec 89.844% (89.991%)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss s 0.4575 (0.4575) Prec 83.594% Data 0.714 (0.714) Loss Data 0.001 (0.008) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120% best acc: 85.810000 Epoch: [20] [0/391] Time 0.764 (0.764) 0.3101 (0.3101) Prec 90.625% (90.625%) Epoch: [20] [100/391] Time 0.094 (0.101) 0.2744 (0.2976) Prec 89.844% (89.991%) Epoch: [20] [200/391] Time 0.088 (0.097)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss s 0.4575 (0.4575) Prec 83.594% Data 0.714 (0.714) Loss Data 0.001 (0.008) Loss
(85.938%) * Prec 84.200% best acc: 85.810000 Epoch: [19] [0/391] Time 0.764 (0.764) 0.2582 (0.2582) Prec 92.969% (92.969%) Epoch: [19] [100/391] Time 0.095 (0.101) 0.2132 (0.2944) Prec 91.406% (90.029%) Epoch: [19] [200/391] Time 0.083 (0.097) 0.3116 (0.3087) Prec 89.844% (89.463%) Epoch: [19] [300/391] Time 0.095 (0.094) 0.2322 (0.3163) Prec 92.188% (89.226%) Validation starts Test: [0/79] Time 0.594 (0.594) Loss (83.594%) * Prec 85.120% best acc: 85.810000 Epoch: [20] [0/391] Time 0.764 (0.764) 0.3101 (0.3101) Prec 90.625% (90.625%) Epoch: [20] [100/391] Time 0.094 (0.101) 0.2744 (0.2976) Prec 89.844% (89.991%)	Data 0.723 (0.723) Loss Data 0.001 (0.009) Loss Data 0.002 (0.005) Loss Data 0.001 (0.004) Loss s 0.4575 (0.4575) Prec 83.594% Data 0.714 (0.714) Loss Data 0.001 (0.008) Loss Data 0.001 (0.006) Loss

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0.3982 (0.2991)
                   Prec 86.719% (89.828%)
Validation starts
Test: [0/79]
                Time 0.478 (0.478)
                                        Loss 0.3966 (0.3966)
                                                                 Prec 88.281%
(88.281\%)
 * Prec 84.380%
best acc: 85.810000
Epoch: [21] [0/391]
                        Time 0.656 (0.656)
                                                 Data 0.612 (0.612)
                                                                          Loss
0.2384 (0.2384)
                   Prec 90.625% (90.625%)
Epoch: [21] [100/391]
                        Time 0.094 (0.100)
                                                 Data 0.002 (0.008)
                                                                          Loss
0.2608 (0.2783)
                   Prec 93.750% (90.517%)
Epoch: [21] [200/391]
                                                 Data 0.001 (0.005)
                        Time 0.088 (0.098)
                                                                          Loss
0.3552 (0.2850)
                   Prec 89.844% (90.431%)
Epoch: [21] [300/391]
                        Time 0.095 (0.095)
                                                 Data 0.001 (0.004)
                                                                          Loss
0.2360 (0.2841)
                   Prec 92.969% (90.454%)
Validation starts
Test: [0/79]
                Time 0.989 (0.989)
                                         Loss 0.2768 (0.2768)
                                                                  Prec 92.969%
(92.969%)
 * Prec 86.920%
best acc: 86.920000
Epoch: [22] [0/391]
                        Time 0.776 (0.776)
                                                 Data 0.732 (0.732)
                                                                          Loss
0.2091 (0.2091)
                   Prec 92.188% (92.188%)
Epoch: [22] [100/391]
                        Time 0.094 (0.101)
                                                 Data 0.002 (0.009)
                                                                          Loss
0.2479 (0.2574)
                   Prec 91.406% (91.252%)
Epoch: [22] [200/391]
                        Time 0.091 (0.098)
                                                 Data 0.001 (0.005)
                                                                          Loss
0.2320 (0.2619)
                   Prec 94.531% (91.142%)
Epoch: [22] [300/391]
                        Time 0.095 (0.096)
                                                 Data 0.001 (0.005)
                                                                          Loss
0.2696 (0.2641)
                   Prec 92.188% (91.035%)
Validation starts
Test: [0/79]
                Time 0.496 (0.496)
                                         Loss 0.4001 (0.4001)
                                                                  Prec 86.719%
(86.719\%)
 * Prec 85.570%
best acc: 86.920000
Epoch: [23] [0/391]
                        Time 0.729 (0.729)
                                                 Data 0.672 (0.672)
                                                                          Loss
0.2507 (0.2507)
                   Prec 91.406% (91.406%)
Epoch: [23] [100/391]
                        Time 0.094 (0.101)
                                                 Data 0.002 (0.008)
                                                                          Loss
0.1179 (0.2541)
                   Prec 96.094% (91.151%)
Epoch: [23] [200/391]
                        Time 0.081 (0.098)
                                                 Data 0.001 (0.005)
                                                                          Loss
0.1138 (0.2555)
                   Prec 96.094% (91.325%)
Epoch: [23] [300/391]
                        Time 0.097 (0.095)
                                                 Data 0.002 (0.004)
                                                                          Loss
0.2421 (0.2610)
                   Prec 90.625% (91.084%)
Validation starts
Test: [0/79]
                Time 0.442 (0.442)
                                        Loss 0.3750 (0.3750)
                                                                  Prec 87.500%
(87.500\%)
* Prec 86.550%
best acc: 86.920000
Epoch: [24] [0/391]
                        Time 0.718 (0.718)
                                                 Data 0.676 (0.676)
                                                                          Loss
0.1489 (0.1489)
                   Prec 96.875% (96.875%)
Epoch: [24] [100/391]
                        Time 0.094 (0.100)
                                                 Data 0.001 (0.008)
                                                                          Loss
```

0 0050 (0 0050) P	00 005% (00 044%)					
0.2853 (0.2253) Prec			D-+-	0 000	(0,005)	T
Epoch: [24] [200/391]			рата	0.002	(0.005)	Loss
0.2824 (0.2362) Prec			Data	0 002	(0, 004)	T
Epoch: [24] [300/391]			рата	0.003	(0.004)	Loss
0.3216 (0.2400) Prec	92.188% (91.746%))				
Validation starts	100 (0 400)	-	0.0000	(0.000	·	00 400%
Test: [0/79] Time 0.4	166 (0.466)	Loss	0.2620	(0.2620)) Prec	92.188%
(92.188%)						
* Prec 85.280%						
best acc: 86.920000	m· 0.707 (0.70)	71	ъ.	0 670	(0, 670)	.
Epoch: [25] [0/391]			Data	0.673	(0.673)	Loss
0.2451 (0.2451) Prec			ъ.	0 000	(0,000)	-
Epoch: [25] [100/391]			Data	0.002	(0.009)	Loss
0.2161 (0.2336) Prec			_		(0.00-)	_
Epoch: [25] [200/391]			Data	0.002	(0.005)	Loss
0.2060 (0.2376) Prec			_		(0.00-)	_
Epoch: [25] [300/391]			Data	0.002	(0.005)	Loss
0.4143 (0.2400) Prec	85.938% (91.624%))				
Validation starts						
Test: [0/79] Time 0.4	196 (0.496)	Loss	0.3185	(0.3185) Prec	91.406%
(91.406%)						
* Prec 87.540%						
best acc: 87.540000						
Epoch: [26][0/391]			Data	0.742	(0.742)	Loss
0.1025 (0.1025) Prec						
Epoch: [26][100/391]			Data	0.002	(0.009)	Loss
0.3475 (0.2146) Prec	87.500% (92.752%))				
-	Time 0.091 (0.09)		Data	0.001	(0.005)	Loss
0.2800 (0.2192) Prec						
Epoch: [26][300/391]	Time $0.095 (0.094)$	4)	Data	0.002	(0.004)	Loss
0.1463 (0.2220) Prec	94.531% (92.489%))				
Validation starts						
Test: [0/79] Time 0.6	354 (0.654)	Loss	0.3578	(0.3578	B) Prec	89.062%
(89.062%)						
* Prec 86.670%						
best acc: 87.540000						
Epoch: [27] [0/391]	Time 0.642 (0.64)	2)	Data	0.602	(0.602)	Loss
0.1251 (0.1251) Prec	96.094% (96.094%))				
Epoch: [27][100/391]	Time 0.094 (0.10	0)	Data	0.001	(0.007)	Loss
0.1763 (0.2084) Prec	94.531% (92.868%))				
Epoch: [27][200/391]	Time 0.092 (0.09	6)	Data	0.002	(0.004)	Loss
0.1486 (0.2111) Prec	94.531% (92.825%))				
Epoch: [27][300/391]	Time 0.094 (0.094	4)	Data	0.001	(0.004)	Loss
0.1742 (0.2156) Prec	94.531% (92.650%))				
Validation starts						
Test: [0/79] Time 0.5	531 (0.531)	Loss	0.2687	(0.2687) Prec	93.750%
(93.750%)						
* Prec 86.990%						

Deck: [28] [0/391] Time 0.710 (0.710) Data 0.669 (0.669) Loss 0.1635 (0.1635) Prec 94.531% (94.531%) Epoch: [28] [100/391] Time 0.096 (0.101) Data 0.001 (0.008) Loss 0.1244 (0.1913) Prec 96.875% (93.510%) Epoch: [28] [200/391] Time 0.091 (0.097) Data 0.002 (0.005) Loss 0.1759 (0.2016) Prec 92.188% (93.179%) Epoch: [28] [300/391] Time 0.094 (0.095) Data 0.001 (0.004) Loss 0.1956 (0.2062) Prec 93.750% (93.013%) Validation starts Test: [0/79] Time 0.623 (0.623) Loss 0.4007 (0.4007) Prec 87.500% (87.500%) * Prec 87.660% Details of the control of the con	best acc: 87.540000			
0.1635 (0.1635) Prec 94.531% (94.531%) Epoch: [28] [100/391] Time 0.096 (0.101) Data 0.001 (0.008) Loss 0.1244 (0.1913) Prec 96.875% (93.510%) Epoch: [28] [200/391] Time 0.091 (0.097) Data 0.002 (0.005) Loss 0.1759 (0.2016) Prec 92.188% (93.179%) Epoch: [28] [300/391] Time 0.094 (0.095) Data 0.001 (0.004) Loss 0.1956 (0.2062) Prec 93.750% (93.013%) Validation starts Test: [0/79] Time 0.623 (0.623) Loss 0.4007 (0.4007) Prec 87.500% (87.500%) * Prec 87.66000 Epoch: [29] [10/391] Time 1.106 (1.106) Data 1.064 (1.064) Loss 0.1767 (0.1767) Prec 91.406% (91.406%) Epoch: [29] [100/391] Time 0.095 (0.104) Data 0.001 (0.012) Loss 0.1767 (0.1767) Prec 91.406% (91.406%) Epoch: [29] [200/391] Time 0.095 (0.104) Data 0.001 (0.012) Loss 0.1752 (0.1950) Prec 95.312% (93.377%) Epoch: [29] [200/391] Time 0.092 (0.099) Data 0.002 (0.007) Loss 0.1671 (0.1920) Prec 94.531% (93.553%) Validation starts Test: [0/79] Time 0.630 (0.630) Loss 0.2707 (0.2707) Prec 90.625% (90.625%) * Prec 88.760% Best acc: 88.760000 Epoch: [30] [10/391] Time 0.098 (0.100) Data 0.002 (0.008) Loss 0.1488 (0.1845) Prec 94.531% (94.531%) Epoch: [30] [100/391] Time 0.093 (0.100) Data 0.002 (0.008) Loss 0.1488 (0.1845) Prec 94.531% (94.531%) Epoch: [30] [100/391] Time 0.090 (0.097) Data 0.001 (0.005) Loss 0.1917 (0.1890) Prec 93.750% (93.673%) Epoch: [30] [200/391] Time 0.090 (0.097) Data 0.002 (0.004) Loss 0.1917 (0.1890) Prec 93.750% (93.673%) Epoch: [30] [300/391] Time 0.090 (0.097) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.673%) Epoch: [30] [300/391] Time 0.090 (0.097) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.673%) Epoch: [30] [300/391] Time 0.090 (0.097) Data 0.002 (0.004) Loss 0.1917 (0.1890) Prec 92.969% (93.673%) Epoch: [30] [300/391] Time 0.090 (0.097) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.673%) Epoch: [31] [10/391] Time 0.090 (0.007) Data 0.002 (0.004) Loss 0.1916 (0.1716) Prec 92.969% (93.673%) Epoch: [31] [300/391] Time 0.090 (0.007) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 92.969% (93.673%) Ep		Time (710 (710)	Data 0 660	(0.660) Iogg
Epoch: [28][100/391] Time 0.096 (0.101) Data 0.001 (0.008) Loss 0.1244 (0.1913) Prec 96.875% (93.510%) Data 0.002 (0.005) Loss 0.1759 (0.2016) Prec 92.188% (93.179%) Epoch: [28][300/391] Time 0.094 (0.095) Data 0.001 (0.004) Loss 0.1956 (0.2062) Prec 93.750% (93.013%) Validation starts Test: [0/79] Time 0.623 (0.623) Loss 0.4007 (0.4007) Prec 87.500% (87.500%) Prec 87.660% Prec 87.660% Prec 87.660% Prec 87.660% Prec 87.660% Prec 87.660% Prec 91.406% (91.406%) Epoch: [29][10/391] Time 0.095 (0.104) Data 0.001 (0.012) Loss 0.1767 (0.1767) Prec 91.406% (91.406%) Epoch: [29][200/391] Time 0.095 (0.104) Data 0.001 (0.012) Loss 0.1671 (0.1920) Prec 95.312% (93.377%) Epoch: [29][300/391] Time 0.094 (0.099) Data 0.002 (0.007) Loss 0.1671 (0.1920) Prec 94.531% (93.553%) Validation starts Test: [0/79] Time 0.630 (0.630) Loss 0.2707 (0.2707) Prec 90.625% (99.625%) Prec 84.531% (94.531%) Epoch: [30][0/391] Time 0.686 (0.686) Data 0.643 (0.643) Loss 0.1352 (0.1352) Prec 94.531% (94.531%) Epoch: [30][10/391] Time 0.093 (0.100) Data 0.001 (0.005) Loss 0.1488 (0.1845) Prec 94.531% (94.531%) Epoch: [30][10/391] Time 0.093 (0.100) Data 0.001 (0.005) Loss 0.1915 (0.1920) Prec 93.750% (93.673%) Epoch: [30][200/391] Time 0.093 (0.100) Data 0.001 (0.005) Loss 0.1915 (0.1920) Prec 93.750% (93.505%) Epoch: [30][300/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Est: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) Prec 80.96% (93.358%) Validation starts Est: [0/79] Time 0.504 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Est: [0/79] Time 0.504 (0.095) Data 0.002 (0.008) Loss 0.1915 (0.1920) Prec 92.969% (92.969%) Epoch: [31][10/391] Time 0.094 (0.097) Data 0.002 (0.008) Loss 0.1751 (-		Data 0.009	(0.003) LOSS
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Test: [0/79] Time 0.630 (0.630) Loss 0.2707 (0.2707) Prec 90.625% (90.625%) * Prec 88.760% best acc: 88.760000 Epoch: [30] [0/391] Time 0.686 (0.686) Data 0.643 (0.643) Loss 0.1352 (0.1352) Prec 94.531% (94.531%) Epoch: [30] [100/391] Time 0.093 (0.100) Data 0.002 (0.008) Loss 0.1488 (0.1845) Prec 92.969% (93.673%) Epoch: [30] [200/391] Time 0.090 (0.097) Data 0.001 (0.005) Loss 0.1917 (0.1890) Prec 93.750% (93.505%) Epoch: [30] [300/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31] [0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31] [100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss		94.531% (93.553%)		
* Prec 88.760% best acc: 88.760000 Epoch: [30][0/391]				
* Prec 88.760% best acc: 88.760000 Epoch: [30] [0/391]		330 (0.630) Loss	0.2707 (0.270	7) Prec 90.625%
Epoch: [30] [0/391] Time 0.686 (0.686) Data 0.643 (0.643) Loss 0.1352 (0.1352) Prec 94.531% (94.531%) Epoch: [30] [100/391] Time 0.093 (0.100) Data 0.002 (0.008) Loss 0.1488 (0.1845) Prec 92.969% (93.673%) Epoch: [30] [200/391] Time 0.090 (0.097) Data 0.001 (0.005) Loss 0.1917 (0.1890) Prec 93.750% (93.505%) Epoch: [30] [300/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31] [0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31] [100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	(90.625%)			
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0.1352 (0.1352) Prec 94.531% (94.531%) Epoch: [30] [100/391] Time 0.093 (0.100) Data 0.002 (0.008) Loss 0.1488 (0.1845) Prec 92.969% (93.673%) Epoch: [30] [200/391] Time 0.090 (0.097) Data 0.001 (0.005) Loss 0.1917 (0.1890) Prec 93.750% (93.505%) Epoch: [30] [300/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31] [0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31] [100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	best acc: 88.760000			
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0.1488 (0.1845) Prec 92.969% (93.673%) Epoch: [30][200/391] Time 0.090 (0.097) Data 0.001 (0.005) Loss 0.1917 (0.1890) Prec 93.750% (93.505%) Epoch: [30][300/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31][0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	0.1352 (0.1352) Prec	94.531% (94.531%)		
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0.1917 (0.1890) Prec 93.750% (93.505%) Epoch: [30] [300/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31] [0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31] [100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	0.1488 (0.1845) Prec	92.969% (93.673%)		
Epoch: [30][300/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31][0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	Epoch: [30][200/391]	Time 0.090 (0.097)	Data 0.001	(0.005) Loss
0.1915 (0.1920) Prec 92.969% (93.358%) Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31] [0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31] [100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	0.1917 (0.1890) Prec	93.750% (93.505%)		
Validation starts Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31] [0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31] [100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	Epoch: [30][300/391]	Time 0.094 (0.095)	Data 0.002	(0.004) Loss
Test: [0/79] Time 0.501 (0.501) Loss 0.3876 (0.3876) Prec 87.500% (87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31] [0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31] [100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	0.1915 (0.1920) Prec	92.969% (93.358%)		
(87.500%) * Prec 87.230% best acc: 88.760000 Epoch: [31][0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	Validation starts			
* Prec 87.230% best acc: 88.760000 Epoch: [31][0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	Test: [0/79] Time 0.5	01 (0.501) Loss	0.3876 (0.387	6) Prec 87.500%
best acc: 88.760000 Epoch: [31][0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	(87.500%)			
Epoch: [31][0/391] Time 0.734 (0.734) Data 0.694 (0.694) Loss 0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	* Prec 87.230%			
0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	best acc: 88.760000			
0.1716 (0.1716) Prec 92.969% (92.969%) Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	Epoch: [31][0/391]	Time 0.734 (0.734)	Data 0.694	(0.694) Loss
Epoch: [31][100/391] Time 0.094 (0.101) Data 0.002 (0.008) Loss 0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	0.1716 (0.1716) Prec	92.969% (92.969%)		
0.1751 (0.1689) Prec 96.094% (94.121%) Epoch: [31] [200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	Epoch: [31][100/391]	Time 0.094 (0.101)	Data 0.002	(0.008) Loss
Epoch: [31][200/391] Time 0.086 (0.097) Data 0.001 (0.005) Loss 0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	=			
0.2834 (0.1730) Prec 90.625% (94.030%) Epoch: [31] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss			Data 0.001	(0.005) Loss
Epoch: [31][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss	=			
-			Data 0.002	(0.004) Loss
	-			

Validation starts Test: [0/79] Time 0.559 (0.559) Loss (88.281%)	0.3797 (0.3797) Prec 88.281%
* Prec 87.100%	
best acc: 88.760000	
Epoch: [32][0/391] Time 0.595 (0.595)	Data 0.552 (0.552) Loss
0.1144 (0.1144) Prec 95.312% (95.312%)	
Epoch: [32][100/391] Time 0.094 (0.099)	Data 0.002 (0.007) Loss
0.2038 (0.1664) Prec 92.969% (94.106%)	
Epoch: [32][200/391] Time 0.093 (0.097)	Data 0.002 (0.004) Loss
0.2425 (0.1708) Prec 92.969% (94.045%)	
Epoch: [32][300/391] Time 0.094 (0.094)	Data 0.002 (0.004) Loss
0.2165 (0.1710) Prec 92.188% (94.030%)	
Validation starts	
Test: [0/79] Time 0.592 (0.592) Loss	0.3371 (0.3371) Prec 89.062%
(89.062%)	
* Prec 88.320%	
best acc: 88.760000	
Epoch: [33][0/391] Time 1.148 (1.148)	Data 1.047 (1.047) Loss
0.1018 (0.1018) Prec 97.656% (97.656%)	
Epoch: [33][100/391] Time 0.095 (0.106)	Data 0.001 (0.013) Loss
0.1081 (0.1555) Prec 96.875% (94.694%)	
Epoch: [33][200/391] Time 0.090 (0.100)	Data 0.002 (0.008) Loss
0.1243 (0.1622) Prec 96.094% (94.450%)	
Epoch: [33][300/391] Time 0.097 (0.097)	Data 0.002 (0.006) Loss
0.1435 (0.1699) Prec 92.969% (94.132%)	
Validation starts	
Test: [0/79] Time 0.715 (0.715) Loss	0.3039 (0.3039) Prec 89.062%
(89.062%)	
* Prec 88.350%	
best acc: 88.760000	
Epoch: [34] [0/391] Time 0.691 (0.691)	Data 0.650 (0.650) Loss
0.1324 (0.1324) Prec 96.875% (96.875%)	
Epoch: [34][100/391] Time 0.094 (0.100)	Data 0.001 (0.008) Loss
0.0556 (0.1527) Prec 97.656% (94.949%)	
Epoch: [34][200/391] Time 0.090 (0.099)	Data 0.001 (0.006) Loss
0.1398 (0.1587) Prec 95.312% (94.722%)	
Epoch: [34][300/391] Time 0.094 (0.096)	Data 0.001 (0.004) Loss
0.0664 (0.1594) Prec 97.656% (94.664%)	
Validation starts	
Test: [0/79] Time 0.561 (0.561) Loss	0.3172 (0.3172) Prec 89.844%
(89.844%)	
* Prec 87.210%	
best acc: 88.760000	
Epoch: [35] [0/391] Time 0.731 (0.731)	Data 0.689 (0.689) Loss
0.1097 (0.1097) Prec 96.094% (96.094%)	
Epoch: [35] [100/391] Time 0.096 (0.101)	Data 0.002 (0.008) Loss
0.1533 (0.1499) Prec 95.312% (94.856%)	

Epoch: [35] [200/391] Time 0.085 (0.098)	Data 0.002 (0.005)	Loss
0.1919 (0.1545) Prec 93.750% (94.609%) Epoch: [35] [300/391] Time 0.094 (0.096) 0.1461 (0.1571) Prec 93.750% (94.573%)	Data 0.002 (0.005)	Loss
Validation starts Test: [0/79] Time 0.518 (0.518) Loss	0.3127 (0.3127) Prec 89.5	844%
(89.844%) * Prec 87.740%		
best acc: 88.760000		
Epoch: [36] [0/391] Time 0.636 (0.636)	Data 0.595 (0.595)	Loss
0.1383 (0.1383) Prec 94.531% (94.531%)	Dava 0.000 (0.000)	повь
Epoch: [36] [100/391] Time 0.095 (0.100)	Data 0.002 (0.007)	Loss
0.1282 (0.1417) Prec 96.875% (95.251%)	Data 0.002 (0.001)	повь
Epoch: [36] [200/391] Time 0.050 (0.098)	Data 0.003 (0.005)	Loss
0.3567 (0.1484) Prec 89.062% (94.912%)	Dava 0.000 (0.000)	повь
Epoch: [36] [300/391] Time 0.094 (0.095)	Data 0.001 (0.004)	Loss
0.1887 (0.1501) Prec 93.750% (94.874%)	2404 0.001 (0.001)	ДОВВ
Validation starts		
Test: [0/79] Time 0.549 (0.549) Loss	0 3492 (0 3492) Prec 89	8444
(89.844%)	0.5432 (0.5432) Tiec 03.	011/6
* Prec 87.920%		
best acc: 88.760000		
Epoch: [37] [0/391] Time 0.732 (0.732)	Data 0.678 (0.678)	Loss
0.0734 (0.0734) Prec 96.875% (96.875%)	Data 0.070 (0.070)	LOSS
Epoch: [37] [100/391] Time 0.094 (0.101)	Data 0.002 (0.008)	Loss
0.1773 (0.1406) Prec 92.969% (95.320%)	Data 0.002 (0.000)	повь
Epoch: [37] [200/391] Time 0.090 (0.097)	Data 0.002 (0.005)	Loss
0.2371 (0.1436) Prec 92.188% (95.149%)	Dava 0.002 (0.000)	повь
Epoch: [37] [300/391] Time 0.094 (0.096)	Data 0.002 (0.005)	Loss
0.0807 (0.1467) Prec 96.875% (94.975%)	Data 0.002 (0.000)	повь
Validation starts		
Test: [0/79] Time 0.548 (0.548) Loss	0.4087 (0.4087) Prec 86.	719%
(86.719%)	0.1007 (0.1007) 1100 00.	1 10/0
* Prec 86.220%		
best acc: 88.760000		
Epoch: [38] [0/391] Time 0.737 (0.737)	Data 0.695 (0.695)	Loss
0.1488 (0.1488) Prec 95.312% (95.312%)	2404 0.000 (0.000)	
Epoch: [38] [100/391] Time 0.096 (0.101)	Data 0.001 (0.008)	Loss
0.1306 (0.1293) Prec 93.750% (95.521%)	2404 0.001 (0.000)	ДОВВ
Epoch: [38] [200/391] Time 0.090 (0.097)	Data 0.001 (0.005)	Loss
0.1977 (0.1383) Prec 92.188% (95.285%)	2404 0.001 (0.000)	
Epoch: [38] [300/391] Time 0.094 (0.095)	Data 0.001 (0.004)	Loss
0.1412 (0.1441) Prec 95.312% (95.087%)	Data 0.001 (0.001)	повь
Validation starts		
Test: [0/79] Time 0.742 (0.742) Loss	0.2541 (0.2541) Prec 88	281%
(88.281%)	1100 001	
* Prec 87.970%		
best acc: 88.760000		

Epoch: [39] [0/391] Time 0.622 (0.622) Data (0.1637 (0.1637) Prec 95.312% (95.312%)).580 (0.580) Loss
).001 (0.007) Loss
	0.004 (0.004) Loss
	0.002 (0.004) Loss
Validation starts	
Test: [0/79] Time 0.588 (0.588) Loss 0.3584 (0.588)).3584) Prec 89.844%
(89.844%)	
* Prec 88.200%	
best acc: 88.760000	
•).580 (0.580) Loss
0.1060 (0.1060) Prec 96.875% (96.875%)	
1	0.002 (0.007) Loss
0.2146 (0.1310) Prec 95.312% (95.614%)	
•	0.091 (0.005) Loss
0.1475 (0.1277) Prec 95.312% (95.682%)	
•	0.002 (0.004) Loss
0.1732 (0.1292) Prec 92.969% (95.616%)	
Validation starts	
Test: [0/79] Time 0.594 (0.594) Loss 0.4393 (0).4393) Prec 89.844%
(89.844%)	
* Prec 88.250%	
best acc: 88.760000	
best acc: 88.760000 Epoch: [41][0/391] Time 0.743 (0.743) Data 0).705 (0.705) Loss
best acc: 88.760000).705 (0.705) Loss
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0 0.0935 (0.0935) Prec 97.656% (97.656%)).705 (0.705) Loss).002 (0.009) Loss
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0 0.0935 (0.0935) Prec 97.656% (97.656%)	
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.1267 (0.1210) Prec 96.094% (95.862%)	
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.1267 (0.1210) Prec 96.094% (95.862%)).002 (0.009) Loss
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%)).002 (0.009) Loss
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%)	0.002 (0.009) Loss 0.002 (0.006) Loss
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41] [300/391] Time 0.094 (0.095) Data 0.01267	0.002 (0.009) Loss 0.002 (0.006) Loss
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41] [300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41] [300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss
best acc: 88.760000 Epoch: [41][0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41][100/391] Time 0.095 (0.101) Data 0.1267 (0.1210) Prec 96.094% (95.862%) Epoch: [41][200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41][300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.095)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss
best acc: 88.760000 Epoch: [41][0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41][100/391] Time 0.095 (0.101) Data 0.1267 (0.1210) Prec 96.094% (95.862%) Epoch: [41][200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41][300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss
best acc: 88.760000 Epoch: [41][0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41][100/391] Time 0.095 (0.101) Data 0.1267 (0.1210) Prec 96.094% (95.862%) Epoch: [41][200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41][300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss
best acc: 88.760000 Epoch: [41][0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41][100/391] Time 0.095 (0.101) Data 0.1267 (0.1210) Prec 96.094% (95.862%) Epoch: [41][200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41][300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss 0.2964) Prec 89.062%
best acc: 88.760000 Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41] [300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000 Epoch: [42] [0/391] Time 1.163 (1.163) Data 1.0028 (0.1028) Prec 96.094% (96.094%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss 0.2964) Prec 89.062%
best acc: 88.760000 Epoch: [41][0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41][100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41][200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41][300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000 Epoch: [42][0/391] Time 1.163 (1.163) Data 1.0028 (0.1028) Prec 96.094% (96.094%) Epoch: [42][100/391] Time 0.094 (0.105) Data 0.0730 (0.1056) Prec 96.094% (96.210%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss 0.2964) Prec 89.062% 1.119 (1.119) Loss 0.001 (0.013) Loss
best acc: 88.760000 Epoch: [41][0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41][100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41][200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41][300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000 Epoch: [42][0/391] Time 1.163 (1.163) Data 1.0028 (0.1028) Prec 96.094% (96.094%) Epoch: [42][100/391] Time 0.094 (0.105) Data 0.0730 (0.1056) Prec 96.094% (96.210%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss 0.2964) Prec 89.062%
Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41] [300/391] Time 0.094 (0.095) Data 0.02287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000 Epoch: [42] [0/391] Time 1.163 (1.163) Data 1.0028 (0.1028) Prec 96.094% (96.094%) Epoch: [42] [100/391] Time 0.094 (0.105) Data 0.0730 (0.1056) Prec 96.094% (96.210%) Epoch: [42] [200/391] Time 0.207 (0.100) Data 0.0887 (0.1155) Prec 99.219% (95.938%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss 0.2964) Prec 89.062% 1.119 (1.119) Loss 0.001 (0.013) Loss
Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.1267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41] [300/391] Time 0.094 (0.095) Data 0.2287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000 Epoch: [42] [0/391] Time 1.163 (1.163) Data 1.0028 (0.1028) Prec 96.094% (96.094%) Epoch: [42] [100/391] Time 0.094 (0.105) Data 0.0730 (0.1056) Prec 96.094% (96.210%) Epoch: [42] [200/391] Time 0.207 (0.100) Data 0.0887 (0.1155) Prec 99.219% (95.938%) Epoch: [42] [300/391] Time 0.094 (0.097) Data 0.0887 (0.1155) Prec 99.219% (95.938%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss 0.2964) Prec 89.062% 1.119 (1.119) Loss 0.001 (0.013) Loss
Epoch: [41] [0/391] Time 0.743 (0.743) Data 0.0935 (0.0935) Prec 97.656% (97.656%) Epoch: [41] [100/391] Time 0.095 (0.101) Data 0.01267 (0.1210) Prec 96.094% (95.862%) Epoch: [41] [200/391] Time 0.183 (0.098) Data 0.2342 (0.1287) Prec 92.188% (95.550%) Epoch: [41] [300/391] Time 0.094 (0.095) Data 0.02287 (0.1328) Prec 93.750% (95.484%) Validation starts Test: [0/79] Time 0.793 (0.793) Loss 0.2964 (0.89.062%) * Prec 87.930% best acc: 88.760000 Epoch: [42] [0/391] Time 1.163 (1.163) Data 1.0028 (0.1028) Prec 96.094% (96.094%) Epoch: [42] [100/391] Time 0.094 (0.105) Data 0.0730 (0.1056) Prec 96.094% (96.210%) Epoch: [42] [200/391] Time 0.207 (0.100) Data 0.0887 (0.1155) Prec 99.219% (95.938%)	0.002 (0.009) Loss 0.002 (0.006) Loss 0.001 (0.005) Loss 0.2964) Prec 89.062% 1.119 (1.119) Loss 0.001 (0.013) Loss 0.004 (0.007) Loss

Test: [0/79] Time 0.577 (0.577) (90.625%)	Loss	0.3217	(0.3217	') Prec	90.625%
* Prec 88.370%					
best acc: 88.760000					
Epoch: [43][0/391] Time 0.644 ((0.644)	Data	0.602	(0.602)	Loss
0.1408 (0.1408) Prec 94.531% (94.	531%)				
Epoch: [43][100/391] Time 0.095 ((0.100)	Data	0.002	(0.008)	Loss
0.1419 (0.1194) Prec 95.312% (96.	032%)				
Epoch: [43][200/391] Time 0.124 ((0.097)	Data	0.001	(0.005)	Loss
0.1684 (0.1224) Prec 94.531% (95.	775%)				
Epoch: [43][300/391] Time 0.094 ((0.095)	Data	0.001	(0.004)	Loss
0.1073 (0.1251) Prec 96.094% (95.	671%)				
Validation starts					
Test: [0/79] Time 0.490 (0.490)	Loss	0.4017	(0.4017	7) Prec	89.062%
(89.062%)					
* Prec 87.520%					
best acc: 88.760000					
Epoch: [44] [0/391] Time 0.510 ((0.510)	Data	0.466	(0.466)	Loss
0.2033 (0.2033) Prec 93.750% (93.	750%)				
Epoch: [44][100/391] Time 0.094 ((0.098)	Data	0.002	(0.006)	Loss
0.1726 (0.1180) Prec 96.094% (95.	908%)				
Epoch: [44][200/391] Time 0.178 ((0.096)	Data	0.004	(0.004)	Loss
0.1078 (0.1231) Prec 96.875% (95.	662%)				
Epoch: [44][300/391] Time 0.095 ((0.095)	Data	0.001	(0.003)	Loss
0.1210 (0.1238) Prec 96.875% (95.	689%)				
Validation starts					
Test: [0/79] Time 0.484 (0.484)	Loss	0.3070	(0.3070))) Prec	89.844%
(89.844%)					
* Prec 88.060%					
best acc: 88.760000					
Epoch: [45][0/391] Time 0.798 (Data	0.761	(0.761)	Loss
0.1138 (0.1138) Prec 96.094% (96.					
Epoch: [45][100/391] Time 0.094 (Data	0.001	(0.009)	Loss
0.0923 (0.1187) Prec 96.875% (96.					
Epoch: [45][200/391] Time 0.028 (Data	0.003	(0.005)	Loss
0.0950 (0.1150) Prec 97.656% (96.					
Epoch: [45][300/391] Time 0.091 (Data	0.002	(0.004)	Loss
0.1527 (0.1163) Prec 92.188% (96.	055%)				
Validation starts					
Test: [0/79] Time 0.478 (0.478)	Loss	0.3078	(0.3078	B) Prec	92.188%
(92.188%)					
* Prec 89.690%					
best acc: 89.690000					
Epoch: [46] [0/391] Time 0.763 (Data	0.722	(0.722)	Loss
0.0814 (0.0814) Prec 97.656% (97.				4	_
Epoch: [46] [100/391] Time 0.094 (Data	0.002	(0.009)	Loss
0.0587 (0.1120) Prec 99.219% (96.		_		(0.05=)	_
Epoch: [46][200/391] Time 0.207 ((0.098)	Data	0.003	(0.005)	Loss

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0.1481 (0.1094)
                   Prec 95.312% (96.284%)
                                                 Data 0.001 (0.004)
Epoch: [46] [300/391]
                        Time 0.094 (0.095)
                                                                          Loss
0.0926 (0.1102)
                   Prec 96.094% (96.221%)
Validation starts
Test: [0/79]
                Time 0.880 (0.880)
                                         Loss 0.2920 (0.2920)
                                                                  Prec 91.406%
(91.406\%)
 * Prec 89.090%
best acc: 89.690000
Epoch: [47] [0/391]
                        Time 0.803 (0.803)
                                                 Data 0.765 (0.765)
                                                                          Loss
0.0883 (0.0883)
                   Prec 97.656% (97.656%)
Epoch: [47] [100/391]
                                                 Data 0.001 (0.009)
                                                                          Loss
                        Time 0.094 (0.101)
0.1278 (0.1001)
                   Prec 96.094% (96.542%)
Epoch: [47] [200/391]
                        Time 0.028 (0.097)
                                                 Data 0.003 (0.005)
                                                                          Loss
0.0871 (0.1066)
                   Prec 97.656% (96.385%)
Epoch: [47] [300/391]
                        Time 0.094 (0.095)
                                                 Data 0.002 (0.004)
                                                                          Loss
0.0833 (0.1115)
                   Prec 96.875% (96.148%)
Validation starts
Test: [0/79]
                Time 0.547 (0.547)
                                         Loss 0.3582 (0.3582)
                                                                  Prec 89.062%
(89.062\%)
 * Prec 88.180%
best acc: 89.690000
Epoch: [48] [0/391]
                        Time 0.685 (0.685)
                                                 Data 0.644 (0.644)
                                                                          Loss
0.0585 (0.0585)
                   Prec 98.438% (98.438%)
Epoch: [48] [100/391]
                        Time 0.097 (0.100)
                                                 Data 0.001 (0.008)
                                                                          Loss
0.1104 (0.1016)
                   Prec 96.094% (96.442%)
Epoch: [48] [200/391]
                        Time 0.238 (0.098)
                                                 Data 0.002 (0.005)
                                                                          Loss
0.1011 (0.1070)
                   Prec 96.094% (96.249%)
Epoch: [48] [300/391]
                        Time 0.094 (0.094)
                                                 Data 0.001 (0.004)
                                                                          Loss
                   Prec 96.094% (96.239%)
0.1086 (0.1078)
Validation starts
Test: [0/79]
                Time 0.441 (0.441)
                                         Loss 0.3242 (0.3242)
                                                                  Prec 89.062%
(89.062\%)
* Prec 88.810%
best acc: 89.690000
Epoch: [49] [0/391]
                                                 Data 0.626 (0.626)
                        Time 0.666 (0.666)
                                                                          Loss
0.1058 (0.1058)
                   Prec 96.094% (96.094%)
Epoch: [49] [100/391]
                        Time 0.094 (0.100)
                                                 Data 0.002 (0.008)
                                                                          Loss
0.0963 (0.1043)
                   Prec 96.875% (96.643%)
Epoch: [49] [200/391]
                        Time 0.081 (0.097)
                                                 Data 0.002 (0.005)
                                                                          Loss
0.0704 (0.0996)
                   Prec 96.875% (96.646%)
Epoch: [49] [300/391]
                        Time 0.095 (0.095)
                                                 Data 0.002 (0.004)
                                                                          Loss
0.1393 (0.1029)
                   Prec 93.750% (96.517%)
Validation starts
Test: [0/79]
                Time 0.436 (0.436)
                                         Loss 0.3873 (0.3873)
                                                                  Prec 88.281%
(88.281\%)
* Prec 87.680%
best acc: 89.690000
Epoch: [50] [0/391]
                        Time 0.803 (0.803)
                                                 Data 0.767 (0.767)
                                                                          Loss
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0.0764 (0.0764) Prec 96.875% (96.875%) Sepoch: [50] [100/391] Time 0.091 (0.101) Data 0.002 (0.009) Loss 0.0300 (0.0980) Prec 99.219% (96.558%) Data 0.002 (0.005) Loss 0.0846 (0.0996) Prec 96.094% (96.545%) Sepoch: [50] [300/391] Time 0.095 (0.098) Data 0.002 (0.004) Loss 0.0607 (0.1023) Prec 99.219% (96.457%) Validation starts Test: [0/79] Time 0.454 (0.454) Loss 0.3894 (0.3894) Prec 89.062% Prec 88.510% Prec 88.510% Prec 88.510% Prec 96.094% (96.094%) Espoch: [51] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1258 0.1258 Prec 96.094% (96.094%) Espoch: [51] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1227 (0.1013) Prec 95.312% (96.341%) Espoch: [51] [300/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1984 (0.1013) Prec 98.438% (96.436%) Prec 98.438% (96.436%) Prec 98.438% (96.436%) Prec 98.438% (96.436%) Prec 89.6000 Espoch: [52] [0/391] Time 0.698 (0.698) Data 0.002 (0.005) Loss 0.0380 (0.0388) Prec 100.000% (100.000%) Espoch: [52] [100/391] Time 0.698 (0.698) Data 0.002 (0.008) Loss 0.0380 (0.0338) Prec 100.000% (100.000%) Espoch: [52] [100/391] Time 0.698 (0.698) Data 0.002 (0.008) Loss 0.0380 (0.0338) Prec 96.94% (96.538%) Prec 96.626% (96.538%) Prec 96.556% (96.538%) Prec 97.656% (96.538%) Prec 97.656% (96.538%) Prec 97.656% (96.538%) Prec 98.360% Ess 100/391] Time 0.095 (0.100) Data 0.001 (0.004) Loss 0.1394 (0.1394) Prec 97.656% (96.538%) Prec 98.360% Ess 100/391] Time 0.095 (0.100) Data 0.001 (0.004) Prec 97.656% (96.538%) Prec 96.094% (96.550%) Ess 96.0000 Ess 96.094% (96.550%) Ess 96.094% (96.550%) Ess 96.094% (96.498%) Ess 96.094% (96.491%) Ess	0.0764 (0.0764) D. 06	0751/ (00 0751/)		
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Responsible				
* Prec 88.510% best acc: 89.690000 Epoch: [51][0/391]		(0.454) Loss	0.3894 (0.3894	1) Prec 89.062%
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Epoch: [52][300/391] Time 0.095 (0.095) Data 0.001 (0.004) Loss 0.0639 (0.1004) Prec 97.656% (96.538%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss 0.2123 (0.2123) Prec 90.625% (90.625%) * Prec 89.860% best acc: 89.860000 Epoch: [53][0/391] Time 1.002 (1.002) Data 0.957 (0.957) Loss 0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53][100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53][200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53][300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts	-		Data 0.001	(0.000) LOSS
Validation starts Test: [0/79] Time 0.490 (0.490)			Data 0 001	(0 004) Ioss
Validation starts Test: [0/79] Time 0.490 (0.490) Loss 0.2123 (0.2123) Prec 90.625% (90.625%) * Prec 89.860% best acc: 89.860000 Epoch: [53] [0/391] Time 1.002 (1.002) Data 0.957 (0.957) Loss 0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53] [100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts	-		Data 0.001	(0.004) LOSS
Test: [0/79] Time 0.490 (0.490) Loss 0.2123 (0.2123) Prec 90.625% (90.625%) * Prec 89.860% best acc: 89.860000 Epoch: [53] [0/391] Time 1.002 (1.002) Data 0.957 (0.957) Loss 0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53] [100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts		000% (90.000%)		
(90.625%) * Prec 89.860% best acc: 89.860000 Epoch: [53][0/391] Time 1.002 (1.002) Data 0.957 (0.957) Loss 0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53][100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53][200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53][300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts		(0 400) I agg	0 0102 (0 0103	Dmag 00 60E%
* Prec 89.860% best acc: 89.860000 Epoch: [53] [0/391] Time 1.002 (1.002) Data 0.957 (0.957) Loss 0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53] [100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts		(0.490) LOSS	0.2123 (0.2123	o) Fiec 90.025%
best acc: 89.860000 Epoch: [53] [0/391] Time 1.002 (1.002) Data 0.957 (0.957) Loss 0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53] [100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts				
Epoch: [53] [0/391] Time 1.002 (1.002) Data 0.957 (0.957) Loss 0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53] [100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts				
0.1364 (0.1364) Prec 93.750% (93.750%) Epoch: [53] [100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts		4 000 (4 000)	D . 0.057	(0.057)
Epoch: [53][100/391] Time 0.092 (0.103) Data 0.001 (0.011) Loss 0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53][200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53][300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts	-		Data 0.957	(0.957) Loss
0.1039 (0.0985) Prec 96.094% (96.550%) Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts			D	(0.044)
Epoch: [53] [200/391] Time 0.094 (0.099) Data 0.002 (0.006) Loss 0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts	-		Data 0.001	(0.011) Loss
0.1414 (0.0997) Prec 96.094% (96.498%) Epoch: [53] [300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts				
Epoch: [53][300/391] Time 0.095 (0.096) Data 0.001 (0.005) Loss 0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts	-		Data 0.002	(0.006) Loss
0.0913 (0.1004) Prec 96.094% (96.491%) Validation starts				
Validation starts	-		Data 0.001	(0.005) Loss
		094% (96.491%)		
Test: [0/79] Time 0.549 (0.549) Loss 0.2652 (0.2652) Prec 90.625%				
	Test: [0/79] Time 0.549	(0.549) Loss	0.2652 (0.2652	2) Prec 90.625%

* Prec 89.950%	
best acc: 89.950000	
Epoch: [54] [0/391] Time 1.172 (1.172)	Data 1.131 (1.131) Loss
0.1057 (0.1057) Prec 96.875% (96.875%)	Data 1.101 (1.101) Lobb
	Data 0.002 (0.013) Loss
Epoch: [54] [100/391] Time 0.094 (0.105)	Data 0.002 (0.013) Loss
0.1146 (0.0927) Prec 94.531% (96.860%)	D-+- 0 002 (0 007)
Epoch: [54] [200/391] Time 0.190 (0.100)	Data 0.003 (0.007) Loss
0.0899 (0.0945) Prec 95.312% (96.801%)	D
Epoch: [54] [300/391] Time 0.092 (0.096)	Data 0.001 (0.006) Loss
0.1644 (0.0984) Prec 92.969% (96.688%)	
Validation starts	
Test: [0/79] Time 0.589 (0.589) Loss	0.3274 (0.3274) Prec 90.625%
(90.625%)	
* Prec 88.610%	
best acc: 89.950000	
Epoch: [55][0/391] Time 0.695 (0.695)	Data 0.661 (0.661) Loss
0.1619 (0.1619) Prec 95.312% (95.312%)	
Epoch: [55][100/391] Time 0.097 (0.100)	Data 0.001 (0.008) Loss
0.0739 (0.0806) Prec 98.438% (97.239%)	
Epoch: [55][200/391] Time 0.112 (0.097)	Data 0.004 (0.005) Loss
0.0611 (0.0885) Prec 97.656% (97.003%)	
Epoch: [55][300/391] Time 0.094 (0.094)	Data 0.001 (0.004) Loss
0.1543 (0.0910) Prec 93.750% (96.893%)	, , , , , , , , , , , , , , , , , , ,
Validation starts	
Test: [0/79] Time 0.552 (0.552) Loss	
	0.2658 (0.2658) Prec 91.406%
	0.2658 (0.2658) Prec 91.406%
(91.406%)	0.2658 (0.2658) Prec 91.406%
(91.406%) * Prec 88.320%	0.2658 (0.2658) Prec 91.406%
(91.406%) * Prec 88.320% best acc: 89.950000	
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895)	0.2658 (0.2658) Prec 91.406% Data 0.860 (0.860) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%)	Data 0.860 (0.860) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102)	
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56][0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56][100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098)	Data 0.860 (0.860) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56][0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56][100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56][200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56][300/391] Time 0.098 (0.096)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%) * Prec 89.180%	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%) * Prec 89.180% best acc: 89.950000 Epoch: [57] [0/391] Time 0.968 (0.968)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%) * Prec 89.180% best acc: 89.950000	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss 0.3228 (0.3228) Prec 92.188%
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%) * Prec 89.180% best acc: 89.950000 Epoch: [57] [0/391] Time 0.968 (0.968)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss 0.3228 (0.3228) Prec 92.188%
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%) * Prec 89.180% best acc: 89.950000 Epoch: [57] [0/391] Time 0.968 (0.968) 0.0677 (0.0677) Prec 96.875% (96.875%)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss 0.3228 (0.3228) Prec 92.188% Data 0.921 (0.921) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%) * Prec 89.180% best acc: 89.950000 Epoch: [57] [0/391] Time 0.968 (0.968) 0.0677 (0.0677) Prec 96.875% (96.875%) Epoch: [57] [100/391] Time 0.094 (0.103)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss 0.3228 (0.3228) Prec 92.188% Data 0.921 (0.921) Loss
(91.406%) * Prec 88.320% best acc: 89.950000 Epoch: [56] [0/391] Time 0.895 (0.895) 0.0541 (0.0541) Prec 99.219% (99.219%) Epoch: [56] [100/391] Time 0.094 (0.102) 0.0973 (0.0862) Prec 96.094% (97.076%) Epoch: [56] [200/391] Time 0.044 (0.098) 0.1350 (0.0875) Prec 96.094% (97.038%) Epoch: [56] [300/391] Time 0.098 (0.096) 0.0624 (0.0899) Prec 96.875% (96.942%) Validation starts Test: [0/79] Time 0.490 (0.490) Loss (92.188%) * Prec 89.180% best acc: 89.950000 Epoch: [57] [0/391] Time 0.968 (0.968) 0.0677 (0.0677) Prec 96.875% (96.875%) Epoch: [57] [100/391] Time 0.094 (0.103) 0.0742 (0.0940) Prec 96.094% (96.805%)	Data 0.860 (0.860) Loss Data 0.001 (0.010) Loss Data 0.002 (0.006) Loss Data 0.001 (0.005) Loss 0.3228 (0.3228) Prec 92.188% Data 0.921 (0.921) Loss Data 0.001 (0.011) Loss

Epoch: [57][300/391] Time 0.094 (0.096) 0.1007 (0.0895) Prec 96.094% (96.880%) Validation starts	Data 0.002 (0.005) Loss	;
Test: [0/79] Time 0.486 (0.486) Loss (89.062%)	0.4299 (0.4299) Prec 89.062%	0
* Prec 88.490%		
best acc: 89.950000		
Epoch: [58][0/391] Time 0.695 (0.695)	Data 0.654 (0.654) Loss	3
0.1275 (0.1275) Prec 96.875% (96.875%)		
Epoch: [58][100/391] Time 0.091 (0.100)	Data 0.002 (0.008) Loss	3
0.0861 (0.0854) Prec 97.656% (97.146%)		
Epoch: [58][200/391] Time 0.057 (0.097)	Data 0.001 (0.005) Loss	3
0.0584 (0.0824) Prec 96.875% (97.194%)		
Epoch: [58] [300/391] Time 0.095 (0.095)	Data 0.002 (0.004) Loss	3
0.0581 (0.0855) Prec 97.656% (97.093%)		
Validation starts		
Test: [0/79] Time 0.519 (0.519) Loss	0.3380 (0.3380) Prec 89.062%	0
(89.062%)		
* Prec 89.300%		
best acc: 89.950000		
Epoch: [59][0/391] Time 0.684 (0.684)	Data 0.642 (0.642) Loss	3
0.0912 (0.0912) Prec 97.656% (97.656%)		
Epoch: [59][100/391] Time 0.094 (0.100)	Data 0.001 (0.008) Loss	3
0.0773 (0.0806) Prec 96.094% (97.293%)		
Epoch: [59][200/391] Time 0.093 (0.097)	Data 0.001 (0.005) Loss	3
0.0847 (0.0889) Prec 97.656% (96.964%)		
Epoch: [59][300/391] Time 0.092 (0.095)	Data 0.002 (0.005) Loss	;
0.0908 (0.0925) Prec 97.656% (96.857%)		
Validation starts		
Test: [0/79] Time 0.695 (0.695) Loss	0.2203 (0.2203) Prec 92.969%	0
(92.969%)		
* Prec 89.000%		
best acc: 89.950000		
Epoch: [60][0/391] Time 0.589 (0.589)	Data 0.548 (0.548) Loss	;
0.0217 (0.0217) Prec 100.000% (100.000%)		
Epoch: [60] [100/391] Time 0.094 (0.099)	Data 0.002 (0.007) Loss	5
0.0625 (0.0891) Prec 98.438% (97.045%)	4	
Epoch: [60] [200/391] Time 0.096 (0.097)	Data 0.002 (0.004) Loss	3
0.0471 (0.0897) Prec 96.875% (97.034%)		
Epoch: [60] [300/391] Time 0.097 (0.095)	Data 0.002 (0.003) Loss	5
0.0675 (0.0882) Prec 97.656% (97.057%)		
Validation starts		
	0.3858 (0.3858) Prec 88.281%	0
(88.281%)		
* Prec 88.590%		
best acc: 89.950000	D + 0 (F7 (0 (F7)	
Epoch: [61] [0/391] Time 0.702 (0.702)	Data 0.657 (0.657) Loss	;
0.0769 (0.0769) Prec 96.875% (96.875%)		

D.0909 (0.0891) Prec 96.875% (96.898%)	Epoch: [61][100/391]		Data 0.001	(0.008)	Loss	
Epoch: [61] [300/391]	Epoch: [61][200/391]	Time 0.094 (0.097)	Data 0.002	(0.005)	Loss	
Test: [0/79]	Epoch: [61][300/391] 0.0452 (0.0859) Prec	Time 0.094 (0.095)	Data 0.001	(0.004)	Loss	
Best acc: 89.950000 Fpoch: [62][0/391] Time 0.599 (0.599) Data 0.550 (0.550) Loss 0.0641 (0.0641) Prec 97.656% (97.656%) Data 0.001 (0.007) Loss 0.0758 (0.0767) Prec 96.875% (97.440%) Epoch: [62][200/391] Time 0.094 (0.099) Data 0.001 (0.004) Loss 0.1273 (0.0822) Prec 96.094% (97.209%) Epoch: [62][200/391] Time 0.094 (0.095) Data 0.002 (0.004) Loss 0.1502 (0.0836) Prec 93.750% (97.083%) Data 0.002 (0.004) Loss 0.1502 (0.0836) Prec 93.750% (97.083%) Epoch: [63][300/391] Time 0.0387 (0.387) Loss 0.2711 (0.2711) Prec 92.188% Prec 89.380% Prec 96.875% (96.875%) Data 0.693 (0.693) Loss 0.1195 (0.1195) Prec 96.875% (96.875%) Epoch: [63][100/391] Time 0.094 (0.101) Data 0.001 (0.008) Loss 0.0796 (0.0696) Prec 96.875% (97.633%) Epoch: [63][200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.0562 (0.0786) Prec 97.656% (97.283%) Epoch: [63][300/391] Time 0.094 (0.094) Data 0.002 (0.004) Loss 0.0562 (0.0786) Prec 97.656% (97.166%) Data 0.002 (0.004) Loss 0.0828 (0.0822) Prec 97.656% (97.166%) Epoch: [64][100/391] Time 0.098 (0.094) Data 0.002 (0.004) Loss 0.0856 (0.0856) Prec 97.656% (97.166%) Epoch: [64][100/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64][100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64][100/391] Time 0.095 (0.101) Data 0.001 (0.005) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64][100/391] Time 0.095 (0.101) Data 0.002 (0.005) Loss 0.1749 (0.0855) Prec 95.312% (97.099%) Epoch: [64][200/391] Time 0.095 (0.101) Data 0.002 (0.005) Loss 0.1749 (0.0855) Prec 95.312% (97.099%) Epoch: [64][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1749 (0.0855) Prec 95.312% (97.099%) Epoch: [64][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1749 (0.0869) Prec 95.312% (97.099%) Epoch: [64][300/391] Time 0.095 (0.095)	Test: [0/79] Time 0.	604 (0.604) Loss	0.2534 (0.253	4) Prec	92.188%	
Epoch: [62][0/391]	* Prec 89.820%					
O.0641 (0.0641)						
Epoch: [62] [100/391]	Epoch: [62][0/391]	Time 0.599 (0.599)	Data 0.550	(0.550)	Loss	
O.0758 (0.0767)						
Epoch: [62] [200/391]	Epoch: [62][100/391]	Time 0.094 (0.099)	Data 0.001	(0.007)	Loss	
O.1273 (0.0822)	0.0758 (0.0767) Prec	96.875% (97.440%)				
Epoch: [62] [300/391]	-		Data 0.001	(0.004)	Loss	
0.1502 (0.0836)	0.1273 (0.0822) Prec	96.094% (97.209%)				
Validation starts Test: [0/79] Time 0.387 (0.387) Loss 0.2711 (0.2711) Prec 92.188% (92.188%) * Prec 89.380% best acc: 89.950000	Epoch: [62][300/391]	Time 0.094 (0.095)	Data 0.002	(0.004)	Loss	
Test: [0/79] Time 0.387 (0.387) Loss 0.2711 (0.2711) Prec 92.188% (92.188%) * Prec 89.380% best acc: 89.950000 Epoch: [63] [0/391] Time 0.738 (0.738) Data 0.693 (0.693) Loss 0.1195 (0.1195) Prec 96.875% (96.875%) Epoch: [63] [100/391] Time 0.094 (0.101) Data 0.001 (0.008) Loss 0.0796 (0.0696) Prec 96.875% (97.633%) Epoch: [63] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.0562 (0.0786) Prec 97.656% (97.283%) Epoch: [63] [300/391] Time 0.098 (0.094) Data 0.002 (0.004) Loss 0.0582 (0.0822) Prec 97.656% (97.166%) Validation starts Test: [0/79] Time 0.592 (0.592) Loss 0.2578 (0.2578) Prec 93.750% (93.750%) * Prec 88.480% best acc: 89.95000 Epoch: [64] [100/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1749 (0.085) Prec 92.188% (97.099%) Epoch: [64] [200/391] Time 0.095 (0.095) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.1502 (0.0836) Prec	93.750% (97.083%)				
(92.188%) * Prec 89.380% best acc: 89.950000 Epoch: [63][0/391] Time 0.738 (0.738) Data 0.693 (0.693) Loss 0.1195 Prec 96.875% (96.875%) Epoch: [63][100/391] Time 0.094 (0.101) Data 0.001 (0.008) Loss 0.0796 (0.0696) Prec 96.875% (97.633%) Epoch: [63][200/391] Time 0.094 (0.0098) Data 0.002 (0.005) Loss 0.0562 (0.0786) Prec 97.656% (97.283%) Epoch: [63][300/391] Time 0.098 (0.094) Data 0.002 (0.004) Loss 0.0828 (0.0822) Prec 97.656% (97.166%) Validation starts Test: [0/79] Time 0.592 (0.592) Loss 0.2578 (0.2578) Prec 93.750% * Prec 88.480% best acc: 89.950000 Epoch: [64][[0/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64][100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.128% (97.217%) <td co<="" td=""><td>Validation starts</td><td></td><td></td><td></td><td></td></td>	<td>Validation starts</td> <td></td> <td></td> <td></td> <td></td>	Validation starts				
* Prec 89.380% best acc: 89.950000 Epoch: [63] [0/391]	Test: [0/79] Time 0.	387 (0.387) Loss	0.2711 (0.271	1) Prec	92.188%	
best acc: 89.950000 Epoch: [63][0/391]	(92.188%)					
Epoch: [63][0/391]	* Prec 89.380%					
0.1195 (0.1195)	best acc: 89.950000					
Epoch: [63][100/391]	Epoch: [63][0/391]	Time 0.738 (0.738)	Data 0.693	(0.693)	Loss	
0.0796 (0.0696)	0.1195 (0.1195) Prec	96.875% (96.875%)				
Epoch: [63] [200/391]	Epoch: [63][100/391]	Time 0.094 (0.101)	Data 0.001	(0.008)	Loss	
0.0562 (0.0786) Prec 97.656% (97.283%) Epoch: [63][300/391] Time 0.098 (0.094) Data 0.002 (0.004) Loss 0.0828 (0.0822) Prec 97.656% (97.166%) Validation starts Test: [0/79] Time 0.592 (0.592) Loss 0.2578 (0.2578) Prec 93.750% (93.750%) * Prec 88.480% * Prec 88.480% * Prec 89.950000 * Prec 97.656% (97.656%) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) * Epoch: [64][100/391] Time 0.769 (0.769) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) * Epoch: [64][200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) * Epoch: [64][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) * Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.0796 (0.0696) Prec	96.875% (97.633%)				
Epoch: [63][300/391]	Epoch: [63][200/391]	Time 0.094 (0.098)	Data 0.002	(0.005)	Loss	
0.0828 (0.0822) Prec 97.656% (97.166%) Validation starts Test: [0/79] Time 0.592 (0.592) Loss 0.2578 (0.2578) Prec 93.750% (93.750%) * Prec 88.480% best acc: 89.950000 Epoch: [64] [0/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.0562 (0.0786) Prec	97.656% (97.283%)				
Validation starts Test: [0/79] Time 0.592 (0.592) Loss 0.2578 (0.2578) Prec 93.750% (93.750%) * Prec 88.480% best acc: 89.950000 Epoch: [64] [0/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	Epoch: [63][300/391]	Time 0.098 (0.094)	Data 0.002	(0.004)	Loss	
Test: [0/79] Time 0.592 (0.592) Loss 0.2578 (0.2578) Prec 93.750% (93.750%) * Prec 88.480% best acc: 89.950000 Epoch: [64] [0/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.0828 (0.0822) Prec	97.656% (97.166%)				
<pre>(93.750%) * Prec 88.480% best acc: 89.950000 Epoch: [64][0/391]</pre>	Validation starts					
* Prec 88.480% best acc: 89.950000 Epoch: [64] [0/391]	Test: [0/79] Time 0.	592 (0.592) Loss	0.2578 (0.257	8) Prec	93.750%	
best acc: 89.950000 Epoch: [64][0/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64][100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64][200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	(93.750%)					
Epoch: [64] [0/391] Time 0.769 (0.769) Data 0.727 (0.727) Loss 0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	* Prec 88.480%					
0.0856 (0.0856) Prec 97.656% (97.656%) Epoch: [64][100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64][200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	best acc: 89.950000					
Epoch: [64] [100/391] Time 0.095 (0.101) Data 0.001 (0.009) Loss 0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	Epoch: [64][0/391]	Time 0.769 (0.769)	Data 0.727	(0.727)	Loss	
0.1272 (0.0854) Prec 95.312% (97.099%) Epoch: [64] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.0856 (0.0856) Prec	97.656% (97.656%)				
Epoch: [64] [200/391] Time 0.094 (0.098) Data 0.002 (0.005) Loss 0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64] [300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	Epoch: [64][100/391]	Time 0.095 (0.101)	Data 0.001	(0.009)	Loss	
0.1749 (0.0825) Prec 92.188% (97.217%) Epoch: [64][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.1272 (0.0854) Prec	95.312% (97.099%)				
Epoch: [64][300/391] Time 0.095 (0.095) Data 0.002 (0.004) Loss 0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	Epoch: [64][200/391]	Time 0.094 (0.098)	Data 0.002	(0.005)	Loss	
0.1159 (0.0869) Prec 94.531% (97.036%) Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.1749 (0.0825) Prec	92.188% (97.217%)				
Validation starts Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	Epoch: [64][300/391]	Time 0.095 (0.095)	Data 0.002	(0.004)	Loss	
Test: [0/79] Time 0.525 (0.525) Loss 0.3188 (0.3188) Prec 92.188%	0.1159 (0.0869) Prec	94.531% (97.036%)				
	Validation starts					
(92.188%)	Test: [0/79] Time 0.	525 (0.525) Loss	0.3188 (0.318	8) Prec	92.188%	
(0=1=00)	(92.188%)					

* Prec 90.150%		
best acc: 90.150000		
Epoch: [65][0/391] Time 0.689 (0.689)	Data 0.650 (0.650)	Loss
0.0276 (0.0276) Prec 98.438% (98.438%)		
Epoch: [65][100/391] Time 0.094 (0.100)	Data 0.001 (0.008)	Loss
0.1792 (0.0754) Prec 95.312% (97.339%)		
Epoch: [65][200/391] Time 0.043 (0.097)	Data 0.003 (0.005)	Loss
0.0653 (0.0779) Prec 98.438% (97.330%)		
Epoch: [65][300/391] Time 0.094 (0.095)	Data 0.002 (0.004)	Loss
0.0520 (0.0831) Prec 99.219% (97.194%)		
Validation starts		
Test: [0/79] Time 0.745 (0.745) Loss	0.3964 (0.3964) Prec	89.062%
(89.062%)		
* Prec 88.990%		
best acc: 90.150000		
Epoch: [66] [0/391] Time 0.656 (0.656)	Data 0.604 (0.604)	Loss
0.0441 (0.0441) Prec 98.438% (98.438%)		
Epoch: [66] [100/391] Time 0.095 (0.100)	Data 0.002 (0.008)	Loss
0.0895 (0.0802) Prec 96.875% (97.355%)	2404 01002 (01000)	
Epoch: [66] [200/391] Time 0.060 (0.097)	Data 0.002 (0.005)	Loss
0.1123 (0.0820) Prec 97.656% (97.279%)	Dava 0.002 (0.000)	ДОББ
Epoch: [66] [300/391] Time 0.094 (0.097)	Data 0.001 (0.004)	Loss
0.0404 (0.0828) Prec 98.438% (97.199%)	Data 0.001 (0.004)	LOSS
Validation starts		
	0.9007 (0.9007) Proc	QA 625%
Test: [0/79] Time 0.538 (0.538) Loss	0.2997 (0.2997) Prec	90.625%
(90.625%)	0.2997 (0.2997) Prec	90.625%
(90.625%) * Prec 89.430%	0.2997 (0.2997) Prec	90.625%
(90.625%) * Prec 89.430% best acc: 90.150000		
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766)		
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%)	Data 0.698 (0.698)	Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101)		Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%)	Data 0.698 (0.698) Data 0.001 (0.008)	Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098)	Data 0.698 (0.698)	Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67][0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67][100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67][200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005)	Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67][0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67][100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67][200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67][300/391] Time 0.094 (0.097)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005)	Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005)	Loss Loss Loss
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(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004)	Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004)	Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%) * Prec 89.580%	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004)	Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67][0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67][100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67][200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67][300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%) * Prec 89.580% best acc: 90.150000	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004) 0.2281 (0.2281) Prec	Loss Loss Loss Substituting the second secon
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(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%) * Prec 89.580% best acc: 90.150000 Epoch: [68] [0/391] Time 0.922 (0.922) 0.0528 (0.0528) Prec 98.438% (98.438%) Epoch: [68] [100/391] Time 0.094 (0.103)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004) 0.2281 (0.2281) Prec	Loss Loss Loss Substituting the second secon
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%) * Prec 89.580% best acc: 90.150000 Epoch: [68] [0/391] Time 0.922 (0.922) 0.0528 (0.0528) Prec 98.438% (98.438%) Epoch: [68] [100/391] Time 0.094 (0.103) 0.0723 (0.0752) Prec 96.094% (97.386%)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004) 0.2281 (0.2281) Prec Data 0.878 (0.878) Data 0.002 (0.010)	Loss Loss Loss Loss Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%) * Prec 89.580% best acc: 90.150000 Epoch: [68] [0/391] Time 0.922 (0.922) 0.0528 (0.0528) Prec 98.438% (98.438%) Epoch: [68] [100/391] Time 0.094 (0.103) 0.0723 (0.0752) Prec 96.094% (97.386%) Epoch: [68] [200/391] Time 0.088 (0.099)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004) 0.2281 (0.2281) Prec Data 0.878 (0.878)	Loss Loss Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%) * Prec 89.580% best acc: 90.150000 Epoch: [68] [0/391] Time 0.922 (0.922) 0.0528 (0.0528) Prec 98.438% (98.438%) Epoch: [68] [100/391] Time 0.094 (0.103) 0.0723 (0.0752) Prec 96.094% (97.386%) Epoch: [68] [200/391] Time 0.088 (0.099) 0.0491 (0.0761) Prec 98.438% (97.357%)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004) 0.2281 (0.2281) Prec Data 0.878 (0.878) Data 0.002 (0.010) Data 0.001 (0.006)	Loss Loss Loss Loss Loss Loss Loss Loss
(90.625%) * Prec 89.430% best acc: 90.150000 Epoch: [67] [0/391] Time 0.766 (0.766) 0.1510 (0.1510) Prec 94.531% (94.531%) Epoch: [67] [100/391] Time 0.092 (0.101) 0.0730 (0.0811) Prec 97.656% (97.161%) Epoch: [67] [200/391] Time 0.042 (0.098) 0.0514 (0.0833) Prec 97.656% (97.135%) Epoch: [67] [300/391] Time 0.094 (0.097) 0.1186 (0.0834) Prec 94.531% (97.101%) Validation starts Test: [0/79] Time 0.465 (0.465) Loss (90.625%) * Prec 89.580% best acc: 90.150000 Epoch: [68] [0/391] Time 0.922 (0.922) 0.0528 (0.0528) Prec 98.438% (98.438%) Epoch: [68] [100/391] Time 0.094 (0.103) 0.0723 (0.0752) Prec 96.094% (97.386%) Epoch: [68] [200/391] Time 0.088 (0.099)	Data 0.698 (0.698) Data 0.001 (0.008) Data 0.003 (0.005) Data 0.002 (0.004) 0.2281 (0.2281) Prec Data 0.878 (0.878) Data 0.002 (0.010) Data 0.001 (0.006)	Loss Loss Loss Loss Loss Loss Loss

0.0756 (0.0793) Prec 97.656% (97.257%)	
Validation starts Test: [0/79] Time 0.577 (0.577) Loss	0.3233 (0.3233) Prec 89.844%
(89.844%)	1100 00.011//
* Prec 89.350%	
best acc: 90.150000	
Epoch: [69][0/391] Time 0.808 (0.808)	Data 0.764 (0.764) Loss
0.0764 (0.0764) Prec 96.094% (96.094%)	
Epoch: [69][100/391] Time 0.094 (0.101)	Data 0.001 (0.009) Loss
0.0726 (0.0798) Prec 96.875% (97.370%)	
Epoch: [69][200/391] Time 0.188 (0.098)	Data 0.002 (0.005) Loss
0.0871 (0.0829) Prec 96.875% (97.244%)	
Epoch: [69] [300/391] Time 0.094 (0.095)	Data 0.001 (0.004) Loss
0.0620 (0.0832) Prec 98.438% (97.168%)	
Validation starts	0 0057 (0 0057) D 00 005W
Test: [0/79] Time 0.498 (0.498) Loss	0.3857 (0.3857) Prec 90.625%
(90.625%) * Prec 89.690%	
best acc: 90.150000	
Epoch: [70] [0/391] Time 0.672 (0.672)	Data 0.630 (0.630) Loss
0.0300 (0.0300) Prec 99.219% (99.219%)	Data 0.030 (0.030) Loss
Epoch: [70] [100/391] Time 0.094 (0.100)	Data 0.002 (0.008) Loss
0.0493 (0.0657) Prec 98.438% (97.649%)	Data 0.002 (0.000) Lobb
Epoch: [70] [200/391] Time 0.044 (0.097)	Data 0.001 (0.005) Loss
0.0998 (0.0706) Prec 95.312% (97.524%)	2404 0.001 (0.000) 1005
Epoch: [70] [300/391] Time 0.094 (0.094)	Data 0.002 (0.004) Loss
0.0310 (0.0750) Prec 98.438% (97.332%)	2002 (0.001) 2002
Validation starts	
Test: [0/79] Time 0.569 (0.569) Loss	0.3029 (0.3029) Prec 91.406%
(91.406%)	
* Prec 90.010%	
best acc: 90.150000	
Epoch: [71] [0/391] Time 1.139 (1.139)	Data 1.097 (1.097) Loss
0.0402 (0.0402) Prec 98.438% (98.438%)	
Epoch: [71][100/391] Time 0.095 (0.105)	Data 0.002 (0.012) Loss
0.1285 (0.0747) Prec 95.312% (97.401%)	
Epoch: [71][200/391] Time 0.094 (0.099)	Data 0.002 (0.007) Loss
0.0159 (0.0719) Prec 100.000% (97.520%)	
Epoch: [71][300/391] Time 0.094 (0.097)	Data 0.001 (0.006) Loss
0.0645 (0.0747) Prec 97.656% (97.376%)	
Validation starts	
Test: [0/79] Time 0.455 (0.455) Loss	0.4269 (0.4269) Prec 90.625%
(90.625%)	
* Prec 88.800%	
best acc: 90.150000	D
Epoch: [72] [0/391] Time 0.731 (0.731)	Data 0.689 (0.689) Loss
0.0464 (0.0464) Prec 97.656% (97.656%)	D-+- 0 000 (0 000)
Epoch: [72][100/391] Time 0.094 (0.101)	Data 0.002 (0.008) Loss

0.0074 (0.0740)	0.0 0751/ (07 44.01/)					
0.0976 (0.0742) Prec			ъ.	0 000	(0,005)	-
Epoch: [72] [200/391]			рата	0.002	(0.005)	Loss
0.0483 (0.0822) Prec			Data	0 000	(0, 004)	T
Epoch: [72] [300/391]			рата	0.002	(0.004)	Loss
0.1090 (0.0803) Prec	97.656% (97.244%))				
Validation starts	247 (0 247) 1		0.0704	(0.0704)	00 400%
Test: [0/79] Time 0.6	517 (0.617)	Loss	0.2731	(0.2/31) Prec	92.188%
(92.188%)						
* Prec 89.840%						
best acc: 90.150000	m: 0 004 (0 00)	4.	ъ.	0 500	(0.500)	-
Epoch: [73] [0/391]			Data	0.583	(0.583)	Loss
0.0811 (0.0811) Prec			_		(a. a.a.)	
Epoch: [73] [100/391]			Data	0.001	(0.007)	Loss
0.0671 (0.0674) Prec						
Epoch: [73] [200/391]			Data	0.002	(0.004)	Loss
0.1456 (0.0751) Prec						
Epoch: [73][300/391]			Data	0.001	(0.004)	Loss
0.0353 (0.0757) Prec	99.219% (97.456%))				
Validation starts						
Test: [0/79] Time 0.4	407 (0.407) I	Loss	0.2800	(0.2800)) Prec	92.969%
(92.969%)						
* Prec 89.330%						
best acc: 90.150000						
Epoch: [74][0/391]	Time 0.836 (0.836	6)	Data	0.794	(0.794)	Loss
0.1059 (0.1059) Prec	95.312% (95.312%))				
Epoch: [74][100/391]	Time 0.094 (0.102	2)	Data	0.001	(0.009)	Loss
0.0180 (0.0722) Prec	100.000% (97.641%	%)				
Epoch: [74][200/391]	Time 0.094 (0.098	3)	Data	0.002	(0.005)	Loss
0.0956 (0.0731) Prec	96.875% (97.555%))				
Epoch: [74][300/391]	Time 0.095 (0.096	6)	Data	0.002	(0.005)	Loss
0.0725 (0.0770) Prec	98.438% (97.410%))				
Validation starts						
Test: [0/79] Time 0.5	506 (0.506) I	Loss	0.2762	(0.2762	Prec	92.188%
(92.188%)						
* Prec 89.240%						
best acc: 90.150000						
Epoch: [75][0/391]	Time 0.815 (0.815	5)	Data	0.772	(0.772)	Loss
0.0789 (0.0789) Prec	97.656% (97.656%))				
Epoch: [75][100/391]	Time 0.095 (0.101	1)	Data	0.001	(0.009)	Loss
0.0430 (0.0689) Prec	98.438% (97.734%))				
Epoch: [75][200/391]	Time 0.095 (0.098	3)	Data	0.001	(0.005)	Loss
0.0825 (0.0745) Prec						
Epoch: [75][300/391]	Time 0.094 (0.096	6)	Data	0.002	(0.004)	Loss
-	96.875% (97.464%)					
Validation starts						
Test: [0/79] Time 0.5	590 (0.590) I	Loss	0.3640	(0.3640)) Prec	89.844%
(89.844%)	· · · ·					.,
* Prec 88.500%						
· · · ·						

best acc: 90.150000					
Epoch: [76] [0/391] Time 0.8	14 (0 814)	Data	0 769	(0.769)	Loss
0.0492 (0.0492) Prec 98.438%		Data	0.703	(0.705)	Loss
Epoch: [76] [100/391] Time 0.0		Data	0 002	(0.009)	Loss
0.0948 (0.0716) Prec 96.094%		Dava	0.002	(0.005)	Loss
	97 (0.098)	Data	0 001	(0.005)	Loss
0.1388 (0.0797) Prec 93.750%		Data	0.001	(0.005)	LUSS
		Doto	0 000	(0 00E)	Togg
Epoch: [76] [300/391] Time 0.0		Data	0.002	(0.005)	Loss
0.0715 (0.0780) Prec 96.875%	(97.298%)				
Validation starts	0)	0 0440	(0.0446)) D	00 000%
Test: [0/79] Time 0.589 (0.58	9) Loss	0.3419	(0.3418) Prec	92.969%
(92.969%)					
* Prec 89.040%					
best acc: 90.150000	45 (0.045)			(0.000)	_
Epoch: [77] [0/391] Time 0.9		Data	0.906	(0.906)	Loss
0.1051 (0.1051) Prec 96.094%					_
Epoch: [77] [100/391] Time 0.0		Data	0.002	(0.011)	Loss
0.0131 (0.0634) Prec 100.000%					
Epoch: [77] [200/391] Time 0.0		Data	0.001	(0.006)	Loss
0.0346 (0.0723) Prec 98.438%					
Epoch: [77] [300/391] Time 0.0		Data	0.002	(0.005)	Loss
0.0481 (0.0720) Prec 98.438%	(97.423%)				
Validation starts					
Test: [0/79] Time 0.550 (0.55	0) Loss	0.3288	(0.3288	3) Prec	90.625%
(90.625%)					
* Prec 89.970%					
best acc: 90.150000					
Epoch: [78] [0/391] Time 1.0	31 (1.031)	Data	0.990	(0.990)	Loss
0.0792 (0.0792) Prec 97.656%	(97.656%)				
Epoch: [78] [100/391] Time 0.0	94 (0.104)	Data	0.001	(0.011)	Loss
0.1045 (0.0653) Prec 94.531%	(97.672%)				
Epoch: [78] [200/391] Time 0.0	94 (0.099)	Data	0.001	(0.006)	Loss
0.0903 (0.0721) Prec 96.875%	(97.547%)				
Epoch: [78] [300/391] Time 0.0	94 (0.096)	Data	0.001	(0.005)	Loss
0.0843 (0.0760) Prec 95.312%	(97.412%)				
Validation starts					
Test: [0/79] Time 0.551 (0.55	1) Loss	0.2955	(0.2955	5) Prec	92.188%
(92.188%)					
* Prec 89.710%					
best acc: 90.150000					
Epoch: [79] [0/391] Time 0.5	95 (0.595)	Data	0.552	(0.552)	Loss
0.0718 (0.0718) Prec 96.094%	(96.094%)				
Epoch: [79][100/391] Time 0.0	94 (0.099)	Data	0.002	(0.007)	Loss
0.0868 (0.0739) Prec 97.656%	(97.471%)				
	96 (0.097)	Data	0.002	(0.004)	Loss
0.0596 (0.0775) Prec 98.438%	(97.322%)				
Epoch: [79][300/391] Time 0.0		Data	0.001	(0.004)	Loss
0.0931 (0.0776) Prec 95.312%					

```
Validation starts
    Test: [0/79]
                   Time 0.674 (0.674) Loss 0.2899 (0.2899) Prec 89.844%
    (89.844\%)
     * Prec 89.660%
    best acc: 90.150000
[3]: # HW
     # 1. Train with 4 bits for both weight and activation to achieve >90% accuracy
     # 2. Find x_int and w_int for the 2nd convolution layer
     # 3. Check the recovered psum has similar value to the un-quantized original \Box
     →psum
           (such as example 1 in W3S2)
[3]: PATH = "result/VGG16_1/model_best.pth.tar"
     checkpoint = torch.load(PATH)
     model.load_state_dict(checkpoint['state_dict'])
     device = torch.device("cuda")
     model.cuda()
     model.eval()
     test loss = 0
     correct = 0
     with torch.no_grad():
         for data, target in testloader:
             data, target = data.to(device), target.to(device) # loading to GPU
             output = model(data)
            pred = output.argmax(dim=1, keepdim=True)
             correct += pred.eq(target.view_as(pred)).sum().item()
     test_loss /= len(testloader.dataset)
     print('\nTest set: Accuracy: {}/{} ({:.0f}%)\n'.format(
            correct, len(testloader.dataset),
             100. * correct / len(testloader.dataset)))
    Test set: Accuracy: 9015/10000 (90%)
[4]: weight = model.features[0].weight.abs().sum()
     print(weight)
    tensor(316.1834, device='cuda:0', grad_fn=<SumBackward0>)
[]:
```