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# coding: utf-8
import sys, os
sys.path.append(os.pardir)  # 用于导入父目录中的文件的设置 import numpy as np
import matplotlib.pyplot as plt
from dataset.mnist import load_mnist
#from simple_convnet import SimpleConvNet
from common.trainer import Trainer

#导入数据
(x_train, t_train), (x_test, t_test) = load_mnist(flatten=False)

# 在处理速度慢的情况下减少数据
#x_train, t_train = x_train[:5000], t_train[:5000]
#x_test, t_test = x_test[:1000], t_test[:1000]

max_epochs = 20

network = SimpleConvNet(input_dim=(1,28,28),
                        conv_param = {'filter_num': 30, 'filter_size': 5, 'pad': 0, 'stride': 1},
                        hidden_size=100, output_size=10, weight_init_std=0.01)

trainer = Trainer(network, x_train, t_train, x_test, t_test,
                  epochs=max_epochs, mini_batch_size=100,
                  optimizer='Adam', optimizer_param={'lr': 0.001},
                  evaluate_sample_num_per_epoch=1000)
trainer.train()

# 保存参数
network.save_params("params.pkl")
print("Saved Network Parameters!")

# 绘制图表
markers = {'train': 'o', 'test': 's'}
x = np.arange(max_epochs)
plt.plot(x, trainer.train_acc_list, marker='o', label='train', markevery=2)
plt.plot(x, trainer.test_acc_list, marker='s', label='test', markevery=2)
plt.xlabel("epochs")
plt.ylabel("accuracy")
plt.ylim(0, 1.0)
plt.legend(loc='lower right')
plt.show()
```