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1 import os
2 import numpy as np
3 import PIL.Image as Image
4 import torch
5 from torch.utils import data
6 import pdb
7 import random
8
9
10 class ImageFiles(data.Dataset):
11     def __init__(self, root, crop=None, flip=False,
12                 source_transform=None,
13                 mean=None, std=None, training=False):
14         super(ImageFiles, self).__init__()
15         self.training = training
16         self.mean, self.std = mean, std
17         self.flip = flip
18         self.s_transform, self.crop = source_transform, crop
19         self.root = root
20         names = os.listdir(root)
21         self.img_filenames = list(map(lambda x: os.path.join(root, x),
22                                     names))
23         names = list(map(lambda x: '.'.join(x.split('.')[:-1]), names))
24         self.names = names
25
26     def __len__(self):
27         return len(self.names)
28
29     def __getitem__(self, index):
30         # load image
31         img_file = self.img_filenames[index]
32         img = Image.open(img_file)
33         name = self.names[index]
34         if self.crop is not None:
35             # random crop size of crop
36             w, h = img.size
37             th, tw = int(self.crop*h), int(self.crop*w)
38             if w == tw and h == th:
39                 return 0, 0, h, w
40             i = random.randint(0, h - th)
41             j = random.randint(0, w - tw)
42             img = img.crop((j, i, j + tw, i + th))
43         if self.s_transform is not None:
44             img = self.s_transform(img)
45         WW, HH = img.size
46         img = np.array(img, dtype=np.uint8)
47         if len(img.shape) < 3:
48             img = np.stack((img, img, img), 2)
49         if img.shape[2] > 3:
50             img = img[:, :, :3]
51         if self.flip and random.randint(0, 1):
52             img = img[:, ::-1].copy()
53         img = img.astype(np.float64) / 255
54         if self.mean is not None:
55             img -= self.mean
56         if self.std is not None:
57             img /= self.std
58         img = img.transpose(2, 0, 1)
59         img = torch.from_numpy(img).float()
60         if self.training:
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60         return img
61     else:
62         return img, name, WW, HH
63
64
65 if __name__ == "__main__":
66     sb = ImageFiles('../..data/datasets/ILSVRC14VOC/images')
67     pdb.set_trace()
68
```