
HorizonNet 코드 분석

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<https://github.com/sunset1995/HorizonNet> 참고.

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결과

1.

```
python preprocess.py --img_glob ssu_dataset/train/img/pic424_1.png --output_dir  
ssu_dataset/preprocessed --rgbonly
```

preprocess.py

이미지 조정(정렬)



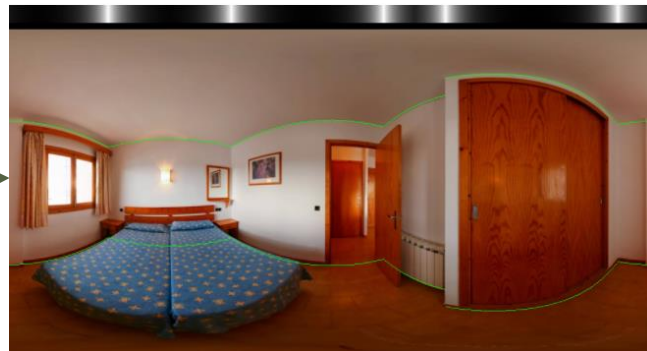
데
이
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훈
련

```
python train.py --train_root_dir ssu_dataset/train --valid_root_dir ssu_dataset/valid --  
batch_size_train 1 --num_workers 0 --id model_bs1
```

train.py

데이터 세트에 대해 학습
Batch_size, epochs, num_workers 지정



```
python preprocess.py --img_glob ssu_dataset/train/img/pic424_1.png --output_dir ssu_dataset/preprocessed --rgbonly
```

1.

데이터

처리

```
51 # Process each input
52 for i_path in paths:
53     print('Processing', i_path, flush=True)
54
55     # Load and cat input images
56     img_ori = np.array(Image.open(i_path).resize((1024, 512), Image.BICUBIC))[..., :3]
57
58     # VP detection and line segment extraction
59     _, vp, _, _, panoEdge, _, _ = panoEdgeDetection(img_ori,
60                                                       qError=args.q_error,
61                                                       refineIter=args.refine_iter)
62     panoEdge = (panoEdge > 0)
63
64     # Align images with VP
65     i_img = rotatePanorama(img_ori / 255.0, vp[2::-1])
66     l_img = rotatePanorama(panoEdge.astype(np.float32), vp[2::-1])
67
```

파노라마 사진에서
edge와 소실점을 찾음

소실점 가진 이미지를 align
(구부러진 사진이 펴짐)

```
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```

1.

데이터

훈련

Train.py

```
107 # Create dataloader
108 dataset_train = PanoCorBonDataset(
109     root_dir=args.train_root_dir,
110     flip=not args.no_flip, rotate=not args.no_rotate, gamma=not args.no_gamma,
111     stretch=not args.no_pano_stretch)
112 loader_train = DataLoader(dataset_train, args.batch_size_train,
113     shuffle=True, drop_last=True,
114     num_workers=args.num_workers,
115     pin_memory=not args.no_cuda,
116     worker_init_fn=lambda x: np.random.seed())
```

Epoch만큼 for문 돌림.

```
170 # Start training
171 for ith_epoch in range(1, args.epochs + 1, desc='Epoch', unit='ep'):
172
173     # Train phase
174     net.train()
175     if args.freeze_earlier_blocks != -1:
176         b0, b1, b2, b3, b4 = net.feature_extractor.list_blocks()
177         blocks = [b0, b1, b2, b3, b4]
178         for i in range(args.freeze_earlier_blocks + 1):
179             for m in blocks[i]:
180                 m.eval()
181     iterator_train = iter(loader_train)
182     for _ in range(len(loader_train),
183         desc='Train ep%s' % ith_epoch, position=1):
184         # Set learning rate
185         adjust_learning_rate(optimizer, args)
186
187         args.cur_iter += 1
188         x, y_bon, y_cor = next(iterator_train)
189
190         losses = feed_forward(net, x, y_bon, y_cor)
191         for k, v in losses.items():
192             k = 'train/%s' % k
193             tb_writer.add_scalar(k, v.item(), args.cur_iter)
194         tb_writer.add_scalar('train/lr', args.running_lr, args.cur_iter)
195         loss = losses['total']
196
197     # backprop
198     optimizer.zero_grad()
199     loss.backward()
200     nn.utils.clip_grad_norm(net.parameters(), 3.0, norm_type='inf')
201     optimizer.step()
```

2.

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```
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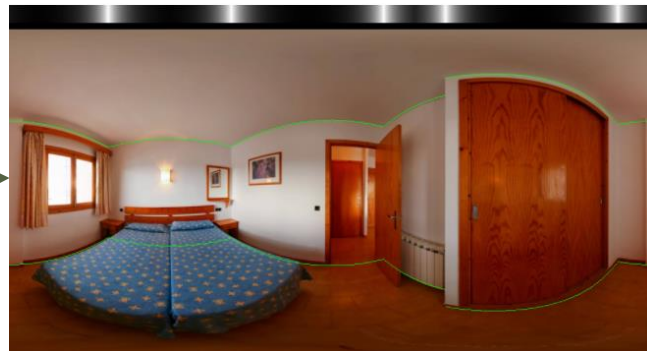
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train.py

데이터 세트에 대해 학습
Batch_size, epochs, num_workers 지정



결과

감사합니다.

The End
