

Network 종류 변경하여 비교해보기

2021. 07. 29

길다영

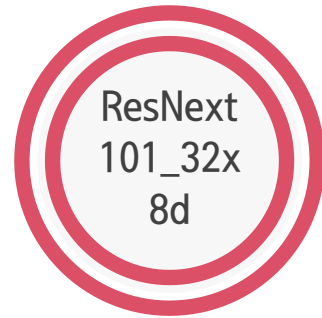
Contents

- 1 Network 종류
- 2 ResNet
 - ResNet50
 - ResNet101
 - ResNet34
 - ResNet152
 - 분석
- 3 제목을 입력해 주세요.
- 4 제목을 입력해 주세요.



1 Network 종류

1 Network 종류

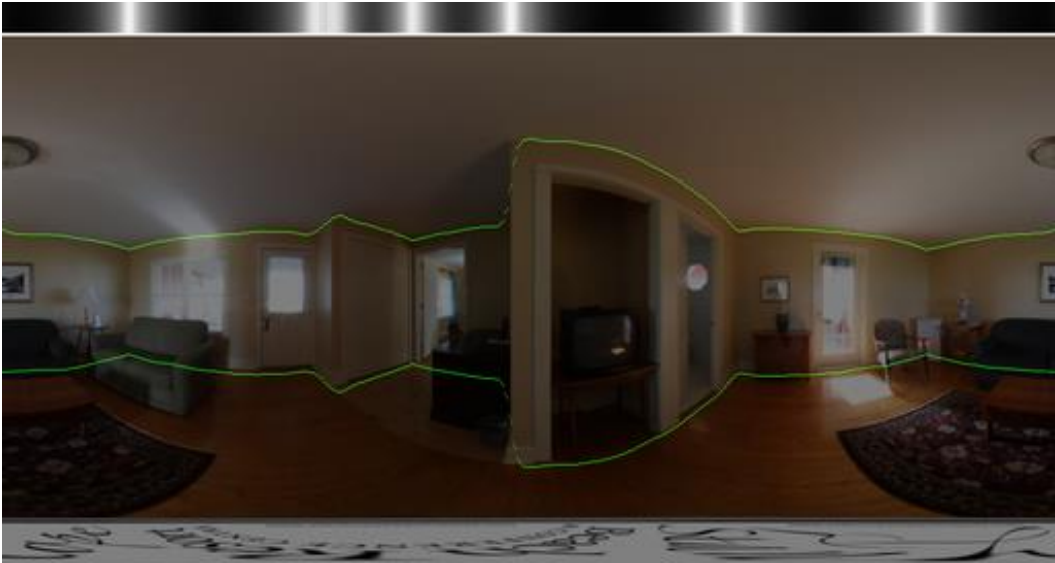







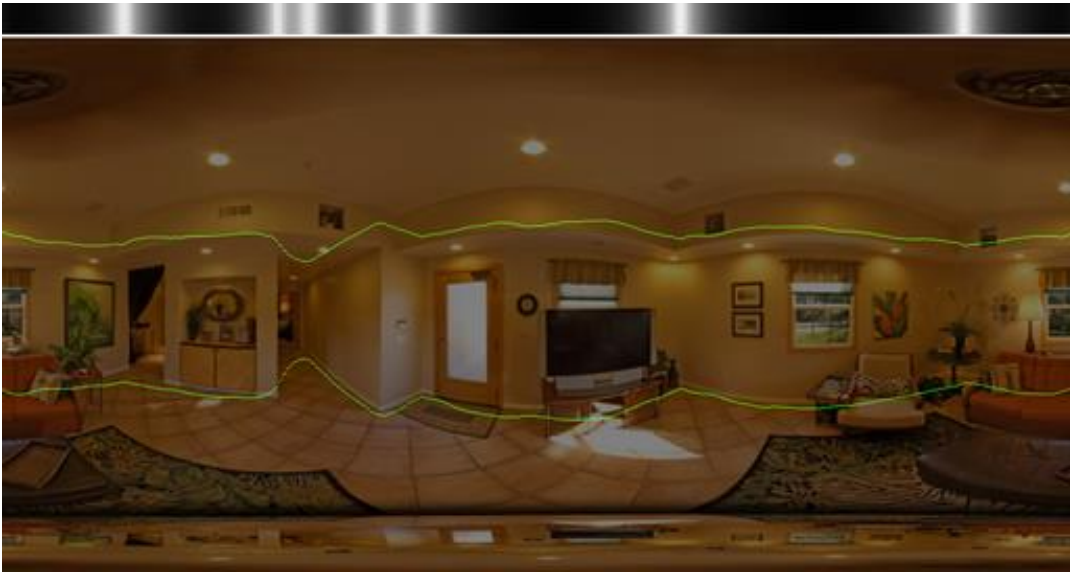



2 ResNet

- ResNet50
 - ResNet101
 - ResNet34
 - ResNet152
- 분석

2 ResNet - resnet50

Img_name	Estimating layout	결과
Pano_01	 A panoramic view of a living room with wooden floors, a patterned rug, and a fireplace. Green lines are overlaid on the image, indicating the estimated layout of the room.	 A 3D floor plan visualization of the living room, showing the layout of the furniture and the room's structure. The visualization is rendered in a perspective view, showing the room's depth and the placement of the furniture.
Pano_07	 A panoramic view of a large hall with a high ceiling and large windows. Green lines are overlaid on the image, indicating the estimated layout of the room.	 A 3D floor plan visualization of the large hall, showing the layout of the furniture and the room's structure. The visualization is rendered in a perspective view, showing the room's depth and the placement of the furniture.

2 ResNet - resnet50

Img_name	Estimating layout	결과
Pano_13		
Pano_15		

2 ResNet - resnet50

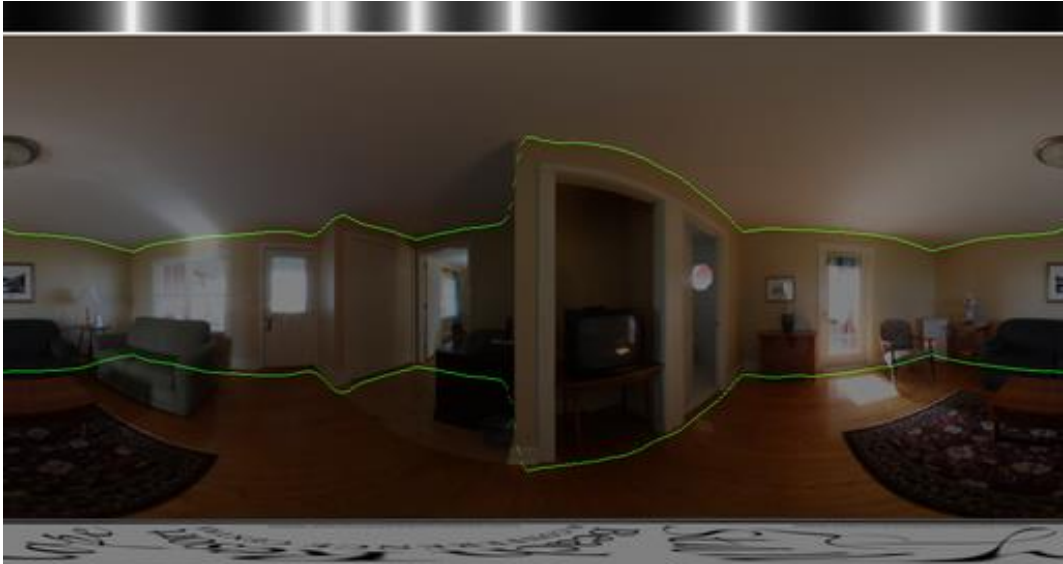

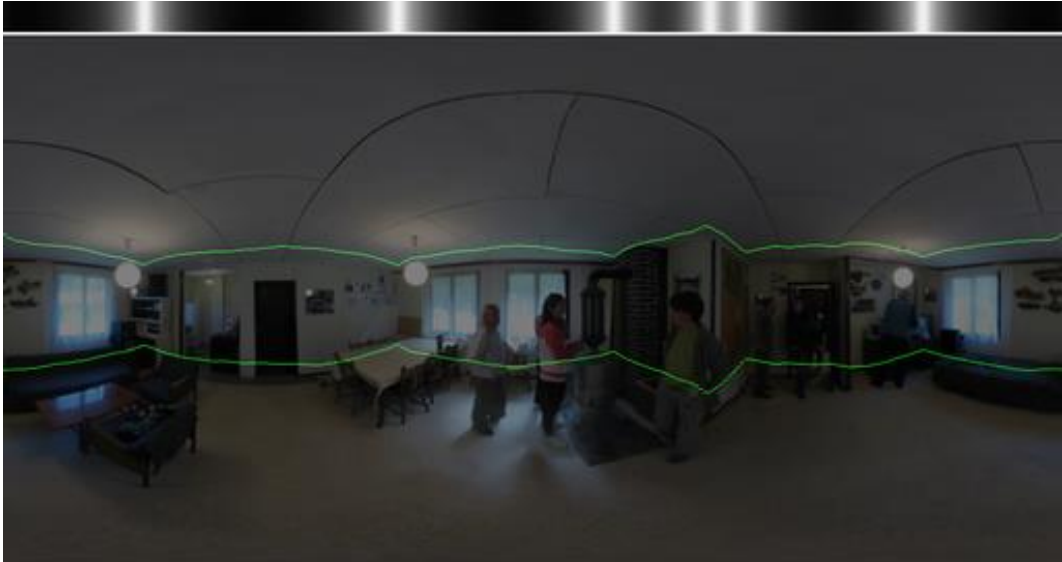

Img_name	Estimating layout	결과
Pano_18		
Pano_20		



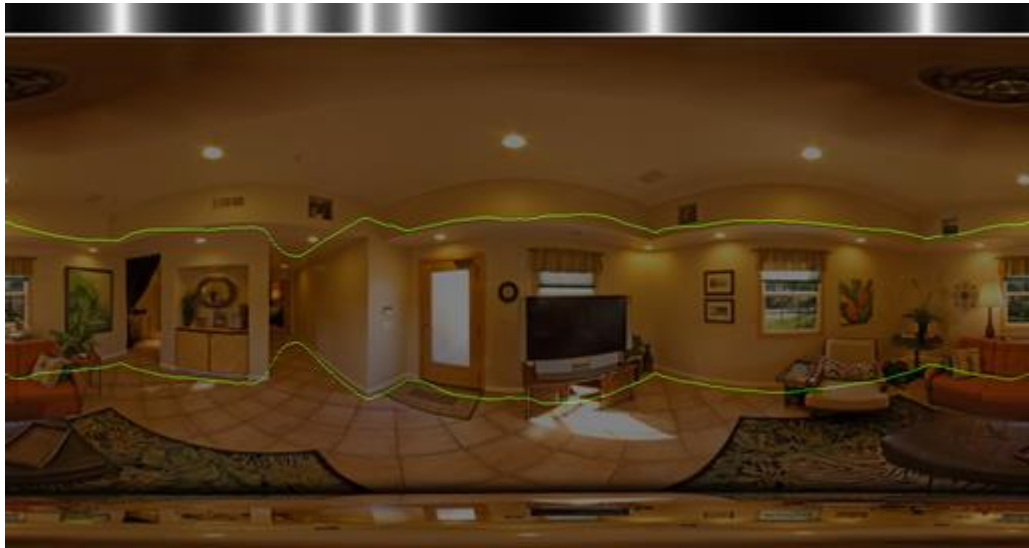



2 ResNet

- ResNet50
 - **ResNet101**
 - ResNet34
 - ResNet152
- 분석





2 ResNet - resnet101

Img_name	Estimating layout	결과
Pano_01		
Pano_07		

2 ResNet - resnet101

Img_name	Estimating layout	결과
Pano_13		
Pano_15		

2 ResNet - resnet101

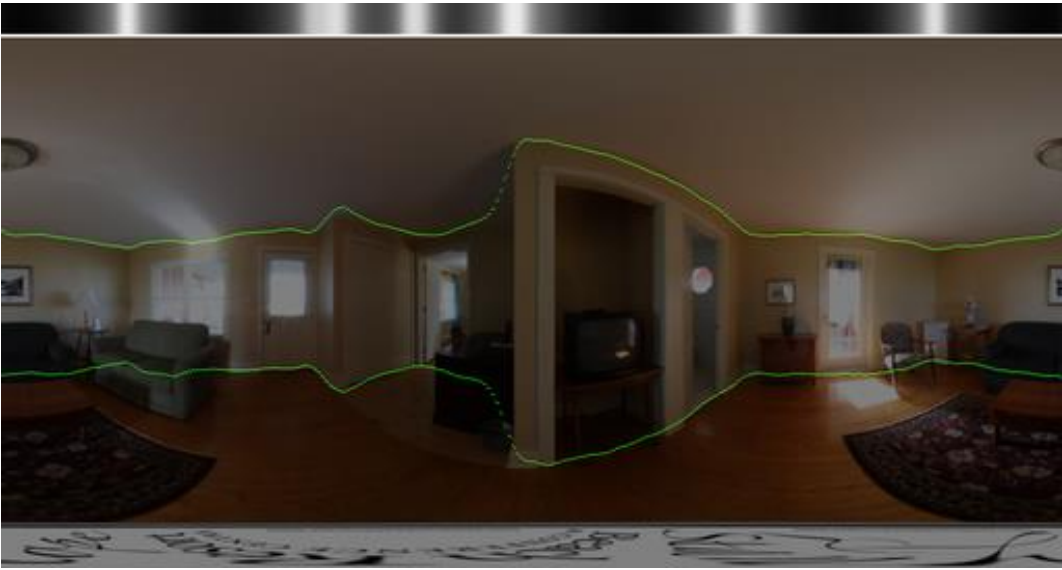

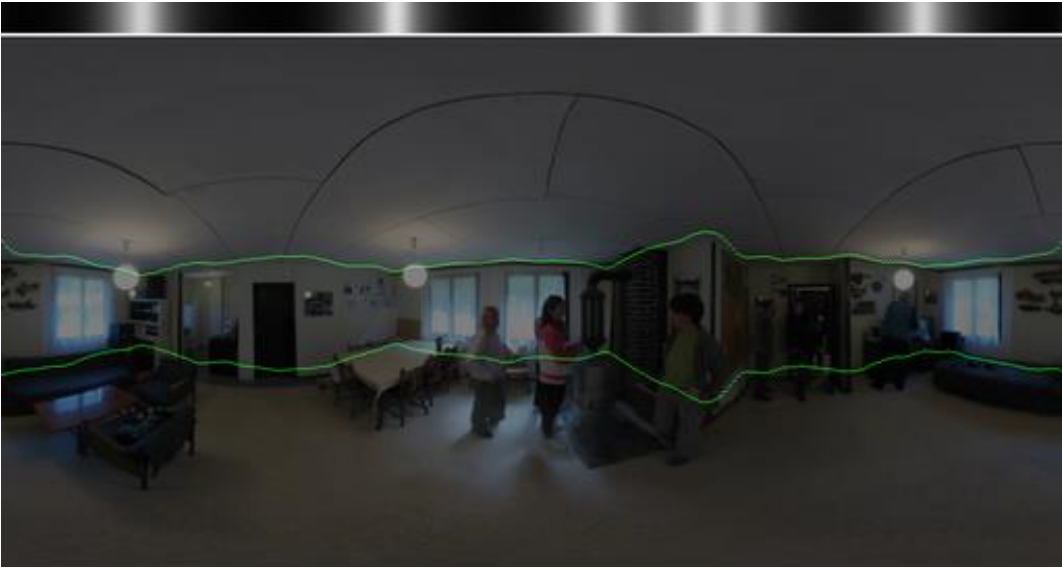

Img_name	Estimating layout	결과
Pano_18		
Pano_20		



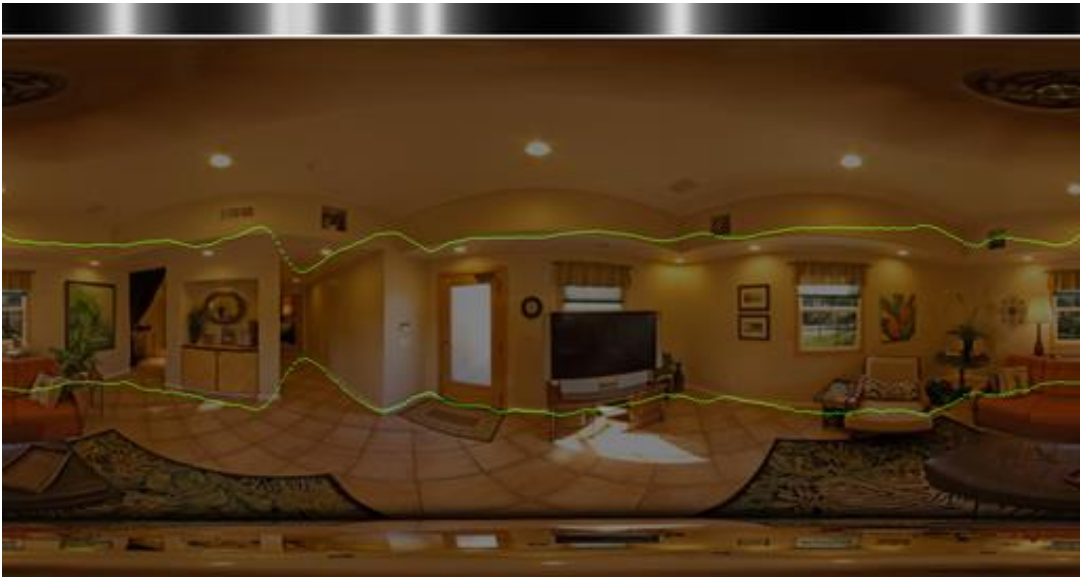
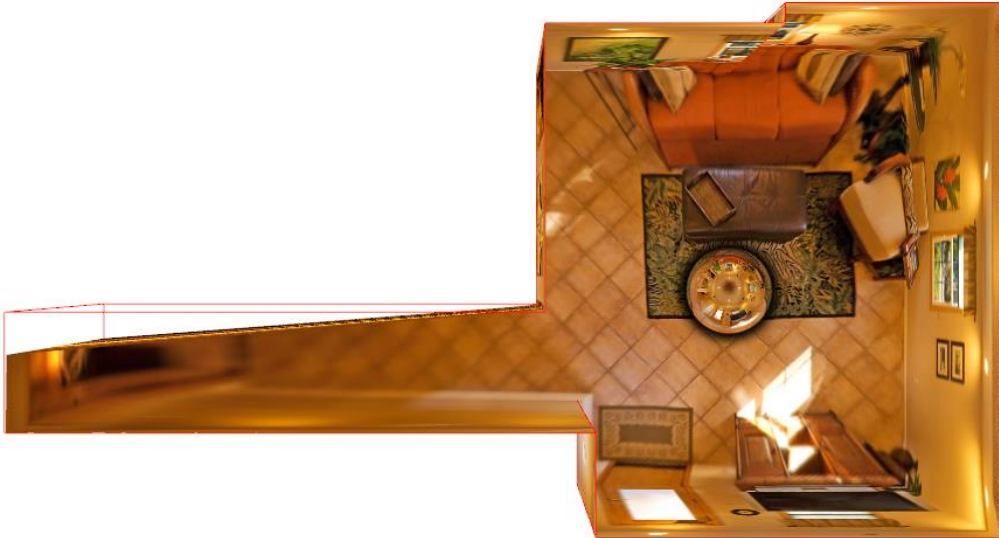


2 ResNet

- ResNet50
 - ResNet101
 - **ResNet34**
 - ResNet152
- 분석


2 ResNet - resnet34

Img_name	Estimating layout	결과
Pano_01		
Pano_07		

2 ResNet - resnet34

Img_name	Estimating layout	결과
Pano_13		
Pano_15		

2 ResNet - resnet34

Img_name	Estimating layout	결과
Pano_18		
Pano_20		



2 ResNet

- ResNet50
 - ResNet101
 - ResNet34
 - **ResNet152**
- 분석

2 ResNet - resnet152

- 다음의 에러가 발생하여 진행하지 못함. 메모리 문제인가..? 😞

```
C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\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 ..\c10\core\TensorImpl.h:1156.)
  return torch.max_pool2d(input, kernel_size, stride, padding, dilation, ceil_mode)

Epoch:  0% | 0/500 [00:01<?, ?ep/s]
Traceback (most recent call last):
  File "train.py", line 190, in <module>
    losses = feed_forward(net, x, y_bon, y_cor)
  File "train.py", line 26, in feed_forward
    y_bon_, y_cor_ = net(x)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\module.py", line 1051, in _call_impl
    return forward_call(*input, **kwargs)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\HorizonNet\model.py", line 242, in forward
    feature = self.reduce_height_module(conv_list, x.shape[3]//self.step_cols)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\module.py", line 1051, in _call_impl
    return forward_call(*input, **kwargs)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\HorizonNet\model.py", line 164, in forward
    feature = torch.cat([
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\HorizonNet\model.py", line 165, in <listcomp>
    f(x, out_w).reshape(bs, -1, out_w)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\module.py", line 1051, in _call_impl
    return forward_call(*input, **kwargs)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\HorizonNet\model.py", line 138, in forward
    x = self.layer(x)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\module.py", line 1051, in _call_impl
    return forward_call(*input, **kwargs)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\container.py", line 139, in forward
    input = module(input)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\module.py", line 1051, in _call_impl
    return forward_call(*input, **kwargs)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\HorizonNet\model.py", line 124, in forward
    return self.layers(x)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\module.py", line 1051, in _call_impl
    return forward_call(*input, **kwargs)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\container.py", line 139, in forward
    input = module(input)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\venv\lib\site-packages\torch\nn\modules\module.py", line 1051, in _call_impl
    return forward_call(*input, **kwargs)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\HorizonNet\model.py", line 31, in forward
    return lr_pad(x, self.padding)
  File "C:\Users\user\PycharmProjects\HorizonNet-resnet152\HorizonNet\model.py", line 21, in lr_pad
    return torch.cat([x[..., -padding:], x, x[..., :padding]], dim=3)
RuntimeError: CUDA out of memory. Tried to allocate 34.00 MiB (GPU 0; 12.00 GiB total capacity; 2.33 GiB already allocated; 27.40 MiB free; 2.41 GiB reserved in total by PyTorch)
```



2 ResNet

- ResNet50
 - ResNet101
 - ResNet34
 - ResNet152
- 분석







● 설정

- Batch_size = 1, Epoch = 300으로 고정.
- Epoch를 늘리고 싶었으나, 시간이 너무 오래 걸려 하지 못함.
- resnet 50과 resnet34의 경우, 총 65개의 이미지를 학습시킴. 그러나 시간이 너무 오래 걸려 그 외 나머지는 총 20개의 이미지만 학습시킴.






● 결과 분석

- ResNet101이 대체적으로 성능이 떨어져 보임.
- ResNet50과 ResNet34는 눈으로 성능을 비교하기 어려움.
- ResNet 종류마다 사진의 가로 세로 비율이 다름.
- ResNet152의 경우, 코드가 실행되지 않음.

2 ResNet - resnet34

Img_name	resnet50	resnet101	resnet34
Pano_01	 A 360-degree panoramic view of a living room, processed by ResNet50. The image shows a green sofa, a wooden coffee table, a patterned rug, and a fireplace. The stitching is visible at the top and bottom edges.	 A 360-degree panoramic view of a living room, processed by ResNet101. The image shows a green sofa, a wooden coffee table, a patterned rug, and a fireplace. The stitching is visible at the top and bottom edges.	 A 360-degree panoramic view of a living room, processed by ResNet34. The image shows a green sofa, a wooden coffee table, a patterned rug, and a fireplace. The stitching is visible at the top and bottom edges.
Pano_07	 A 360-degree panoramic view of a library or study, processed by ResNet50. The image shows bookshelves, a desk, and a person standing in the center. The stitching is visible at the top and bottom edges.	 A 360-degree panoramic view of a library or study, processed by ResNet101. The image shows bookshelves, a desk, and a person standing in the center. The stitching is visible at the top and bottom edges.	 A 360-degree panoramic view of a library or study, processed by ResNet34. The image shows bookshelves, a desk, and a person standing in the center. The stitching is visible at the top and bottom edges.

2 ResNet - resnet34

Img_name	resnet50	resnet101	resnet34
Pano_13	 A 360-degree panoramic view of a living room. The room features a large orange sofa, a dark wood coffee table, and a patterned rug. The floor is covered in light-colored tiles. The walls are decorated with several framed pictures. The lighting is warm and comes from a central ceiling light.	 A 360-degree panoramic view of a living room, identical to the one in the resnet50 column. The room features a large orange sofa, a dark wood coffee table, and a patterned rug. The floor is covered in light-colored tiles. The walls are decorated with several framed pictures. The lighting is warm and comes from a central ceiling light.	 A 360-degree panoramic view of a living room, identical to the one in the resnet50 column. The room features a large orange sofa, a dark wood coffee table, and a patterned rug. The floor is covered in light-colored tiles. The walls are decorated with several framed pictures. The lighting is warm and comes from a central ceiling light.
Pano_15	 A 360-degree panoramic view of a bedroom. The room features a large bed with a patterned headboard and a patterned blanket. The floor is covered in light-colored tiles. The walls are decorated with several framed pictures. The lighting is warm and comes from a central ceiling light.	 A 360-degree panoramic view of a bedroom, identical to the one in the resnet50 column. The room features a large bed with a patterned headboard and a patterned blanket. The floor is covered in light-colored tiles. The walls are decorated with several framed pictures. The lighting is warm and comes from a central ceiling light.	 A 360-degree panoramic view of a bedroom, identical to the one in the resnet50 column. The room features a large bed with a patterned headboard and a patterned blanket. The floor is covered in light-colored tiles. The walls are decorated with several framed pictures. The lighting is warm and comes from a central ceiling light.

2 ResNet - resnet34

Img_name	resnet50	resnet101	resnet34
Pano_18			
Pano_20			

THANK YOU

The End