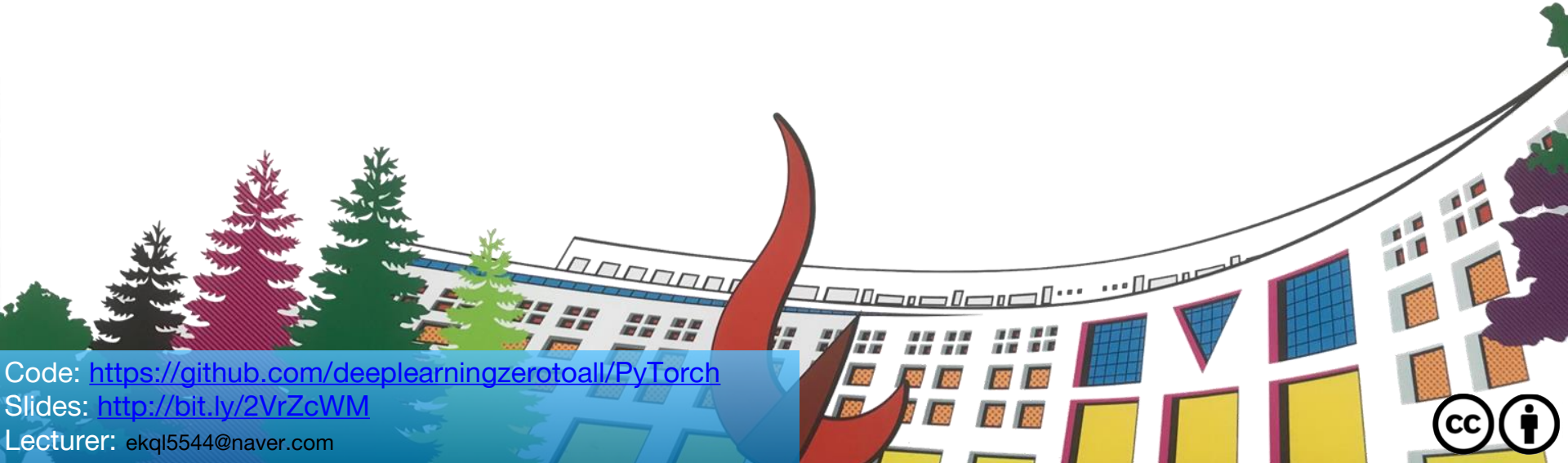
# ML/DL for Everyone Season2

with PYTORCH

## 10-5-Advanced CNN(VGG)



Code: https://github.com/deeplearningzerotoall/PyTorch
Slides: http://bit.ly/2VrZcWM
Lecturer: ekql5544@naver.com

# 지난시간까지

- ImageFolder

# 오늘은

- VGG Network 만들기

# 이론적인 설명은 어디서?

## 모두를 위한 딥러닝 시즌 1

https://www.youtube.com/watch?v=KbNbWTnlYXs&list=PLlMkM4tgfjnLSOjrEJN31gZATbcj_MpUm&index=37

## Pytorch Lecture 11:  Advanced CNN

https://www.youtube.com/watch?v=hqYfqNAQljE

# VGG-net

- Oxford VGG(Visual Geometry Group) 에서 만든 Network

| ConvNet Configuration | | | | | |
|---|---|---|---|---|---|
| A | A-LRN | B | C | D | E |
| 11 weight layers | 11 weight layers | 13 weight layers | 16 weight layers | 16 weight layers | 19 weight layers |
| input (224 × 224 RGB image) | | | | | |
| conv3-64 | conv3-64<br>**LRN** | conv3-64<br>**conv3-64** | conv3-64<br>conv3-64 | conv3-64<br>conv3-64 | conv3-64<br>conv3-64 |
| maxpool | | | | | |
| conv3-128 | conv3-128 | conv3-128<br>**conv3-128** | conv3-128<br>conv3-128 | conv3-128<br>conv3-128 | conv3-128<br>conv3-128 |
| maxpool | | | | | |
| conv3-256<br>conv3-256 | conv3-256<br>conv3-256 | conv3-256<br>conv3-256 | conv3-256<br>conv3-256<br>**conv1-256** | conv3-256<br>conv3-256<br>**conv3-256** | conv3-256<br>conv3-256<br>conv3-256<br>**conv3-256** |
| maxpool | | | | | |
| conv3-512<br>conv3-512 | conv3-512<br>conv3-512 | conv3-512<br>conv3-512 | conv3-512<br>conv3-512<br>**conv1-512** | conv3-512<br>conv3-512<br>**conv3-512** | conv3-512<br>conv3-512<br>conv3-512<br>**conv3-512** |
| maxpool | | | | | |
| conv3-512<br>conv3-512 | conv3-512<br>conv3-512 | conv3-512<br>conv3-512 | conv3-512<br>conv3-512<br>**conv1-512** | conv3-512<br>conv3-512<br>**conv3-512** | conv3-512<br>conv3-512<br>conv3-512<br>**conv3-512** |
| maxpool | | | | | |
| FC-4096 | | | | | |
| FC-4096 | | | | | |
| FC-1000 | | | | | |
| soft-max | | | | | |

# VGG 16


3x3 conv, 64
3x3 conv, 64
3x3 conv, 128
3x3 conv, 128
3x3 conv, 256
3x3 conv, 256
3x3 conv, 256
3x3 conv, 512
3x3 conv, 512
3x3 conv, 512
3x3 conv, 512
3x3 conv, 512
3x3 conv, 512
fc 4096
fc 4096
fc 1000

# torchvision.models.vgg

- vgg11 ~ vgg19 까지 만들 수 있도록 되어있음
- 3x224x224 입력을 기준으로 만들도록 되어 있음
- input size가 다른 경우 VGG를 적용하려면 어떻게 해야 할까?

# 직접 해보기

# 오늘 같이 해본 것들은?

VGG Network를 직접 만들어 봤습니다.

# What’s Next?

- ResNet을 만들어 봅시다 .