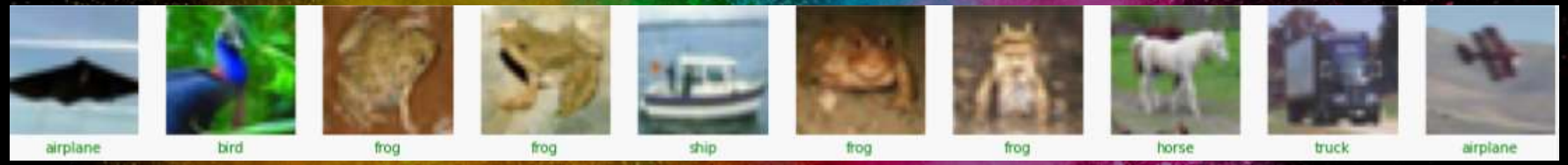
Transfer learning
cifar10

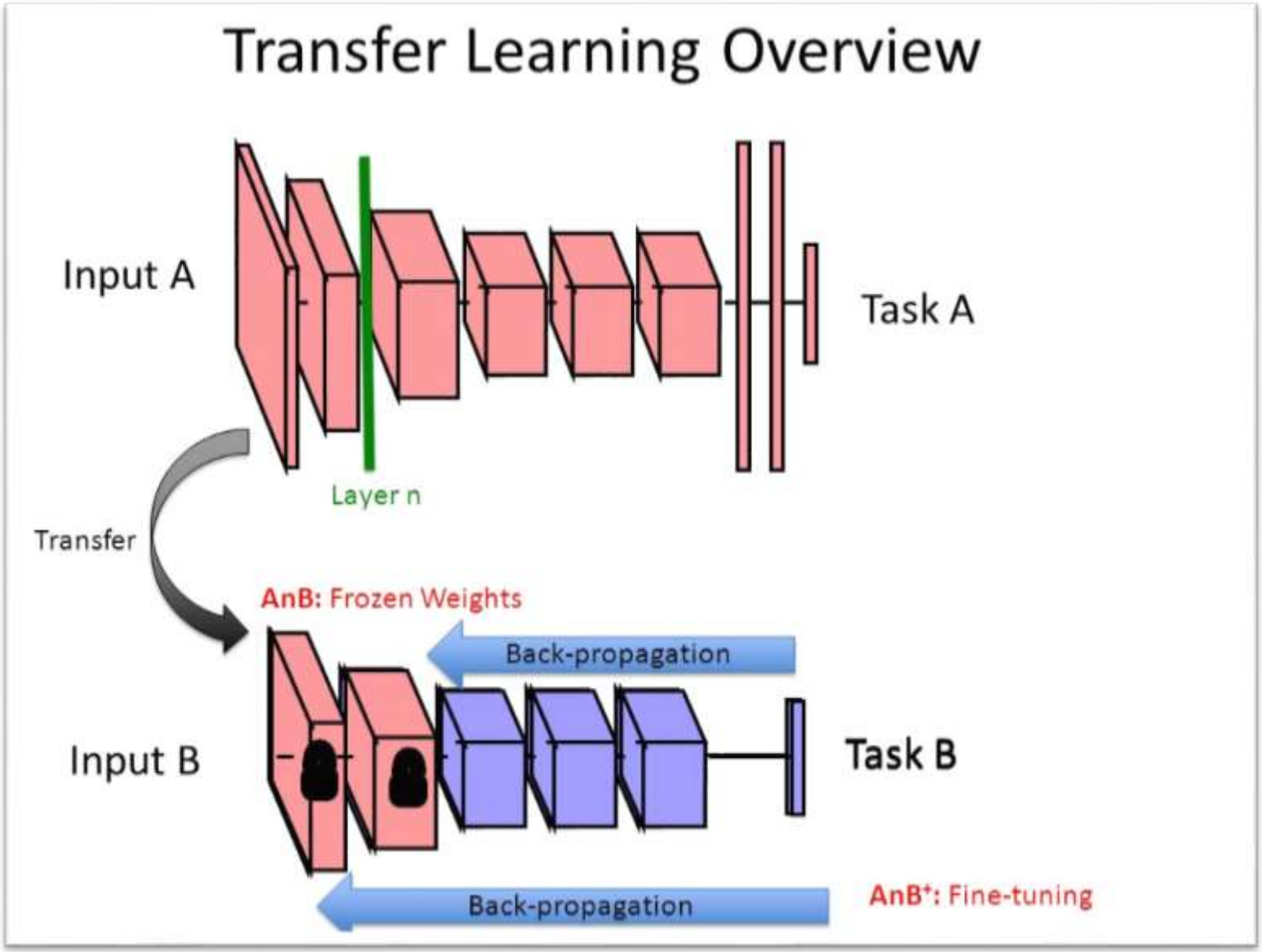


cifar10 데이터의 100%, 10%를 이용한 전이(전환) 학습

cifar10 전이(전환) 학습

DL			DL with Daug		TL with Fine Tuning			
Models			Models		Resnet-S	Resnet-F	MobileNetV2-S	MobileNetV3-F
C2F2	C2F3	C4F5	C4F5	C6F2	TLF3	TLF3	TLF3	TLF3
72.3	71.6	74.5	78.9	81.4	91	91	89	89

Transfer Learning (전환학습/전이학습)

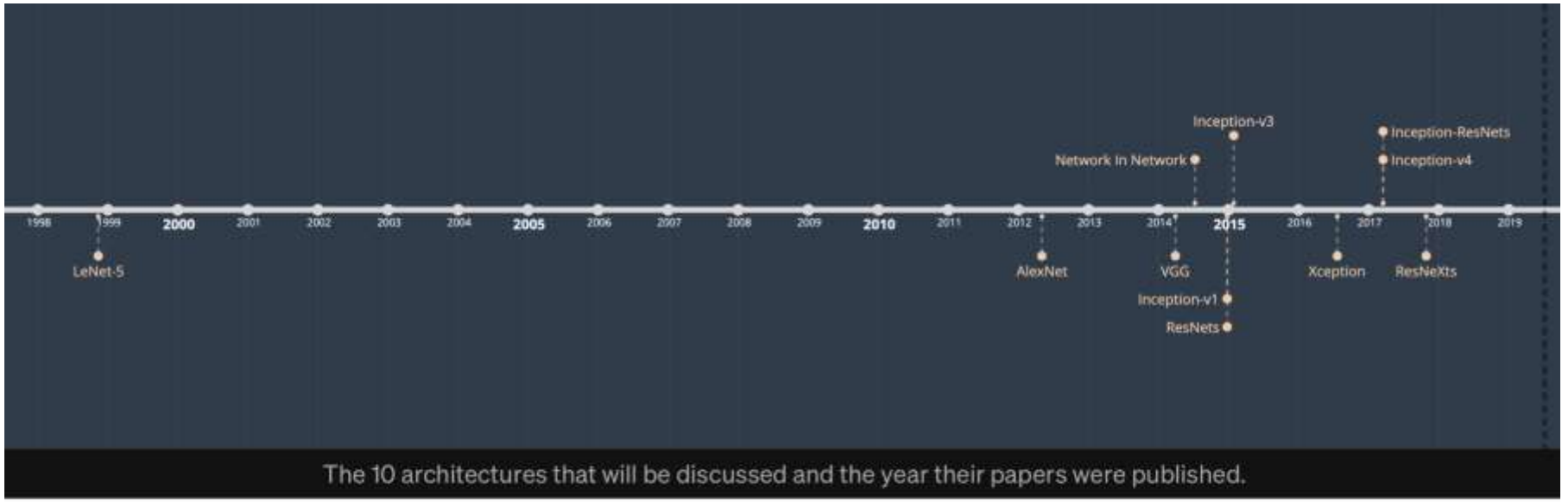


https://lisaong.github.io/mldds-courseware/03_TextImage/assets/transfer/Transfer+Learning+Overview.jpg

Transfer Learning

ImageNet dataset

- 1.4 million labeled images
- 1,000 different classes



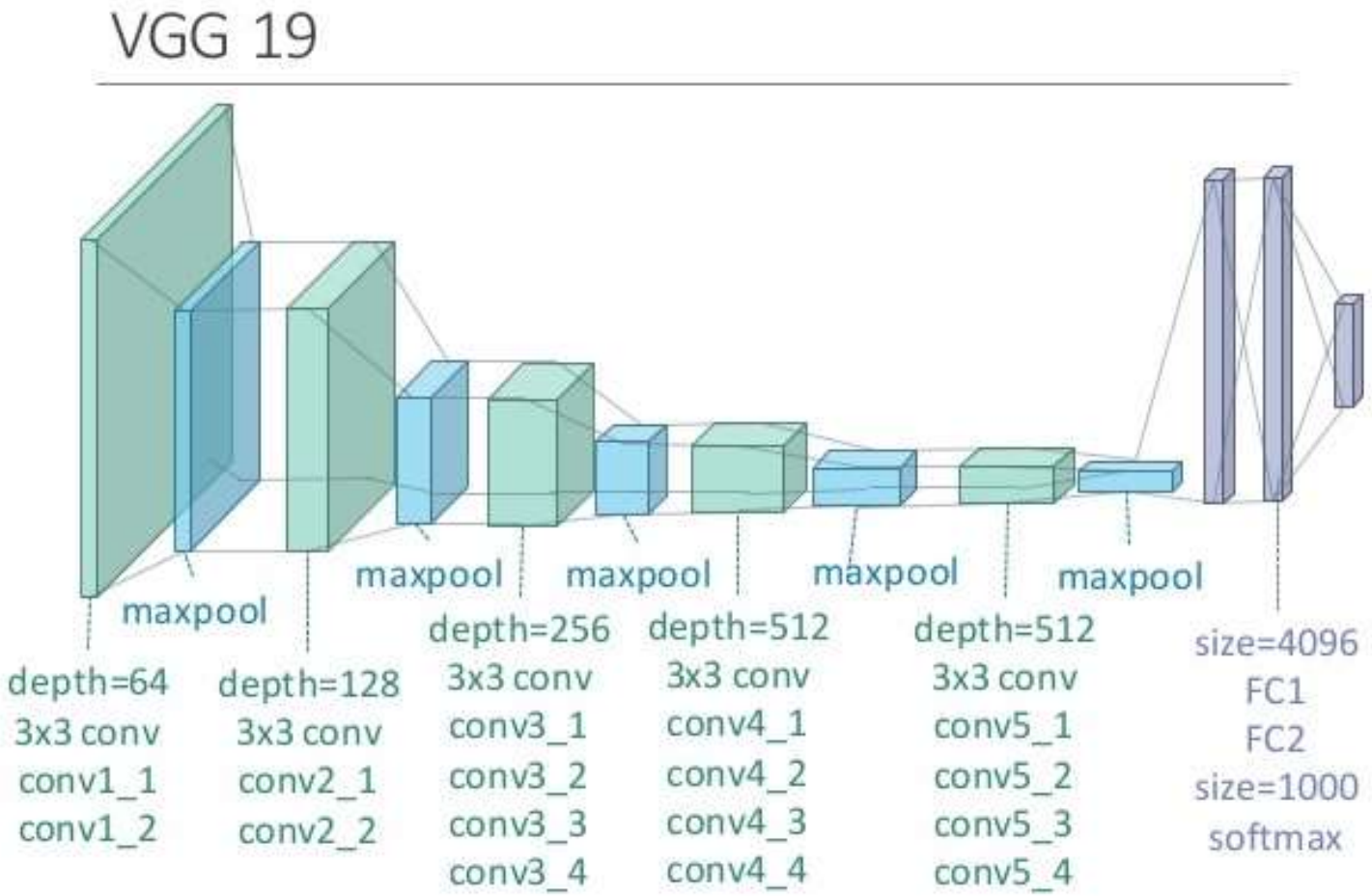
The 10 architectures that will be discussed and the year their papers were published.

Model	Size	Top-1 Accuracy	Top-5 Accuracy	Parameters	Depth
VGG16	528 MB	0.713	0.901	138,357,544	23
InceptionV3	92 MB	0.779	0.937	23,851,784	159
ResNet50	98 MB	0.749	0.921	25,636,712	-
Xception	88 MB	0.790	0.945	22,910,480	126
InceptionResNetV2	215 MB	0.803	0.953	55,873,736	572
ResNeXt50	96 MB	0.777	0.938	25,097,128	-

The top-1 and top-5 accuracy refers to the model's performance on the ImageNet validation dataset.

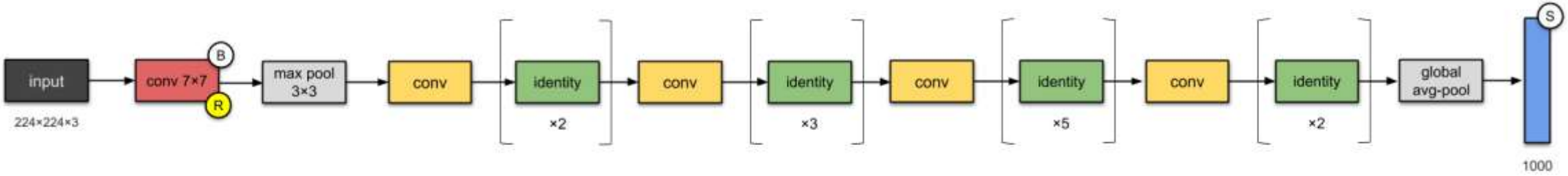
https://towardsdatascience.com/illustrated-10-cnn-architectures-95d78ace614d

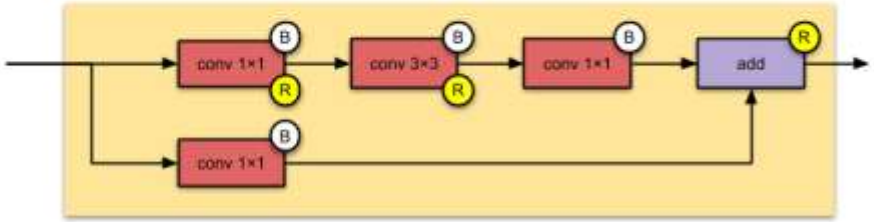
Transfer Learning: VGG19(2014)



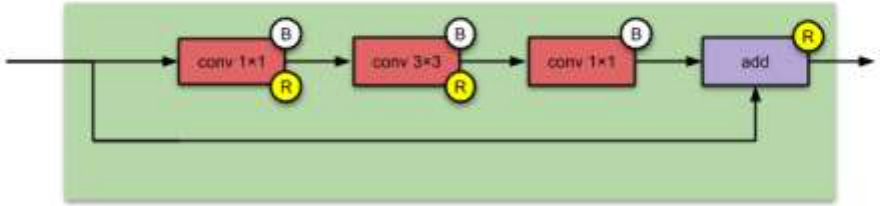
https://towardsdatascience.com/illustrated-10-cnn-architectures-95d78ace614d

Transfer Learning: ResNet(2015)





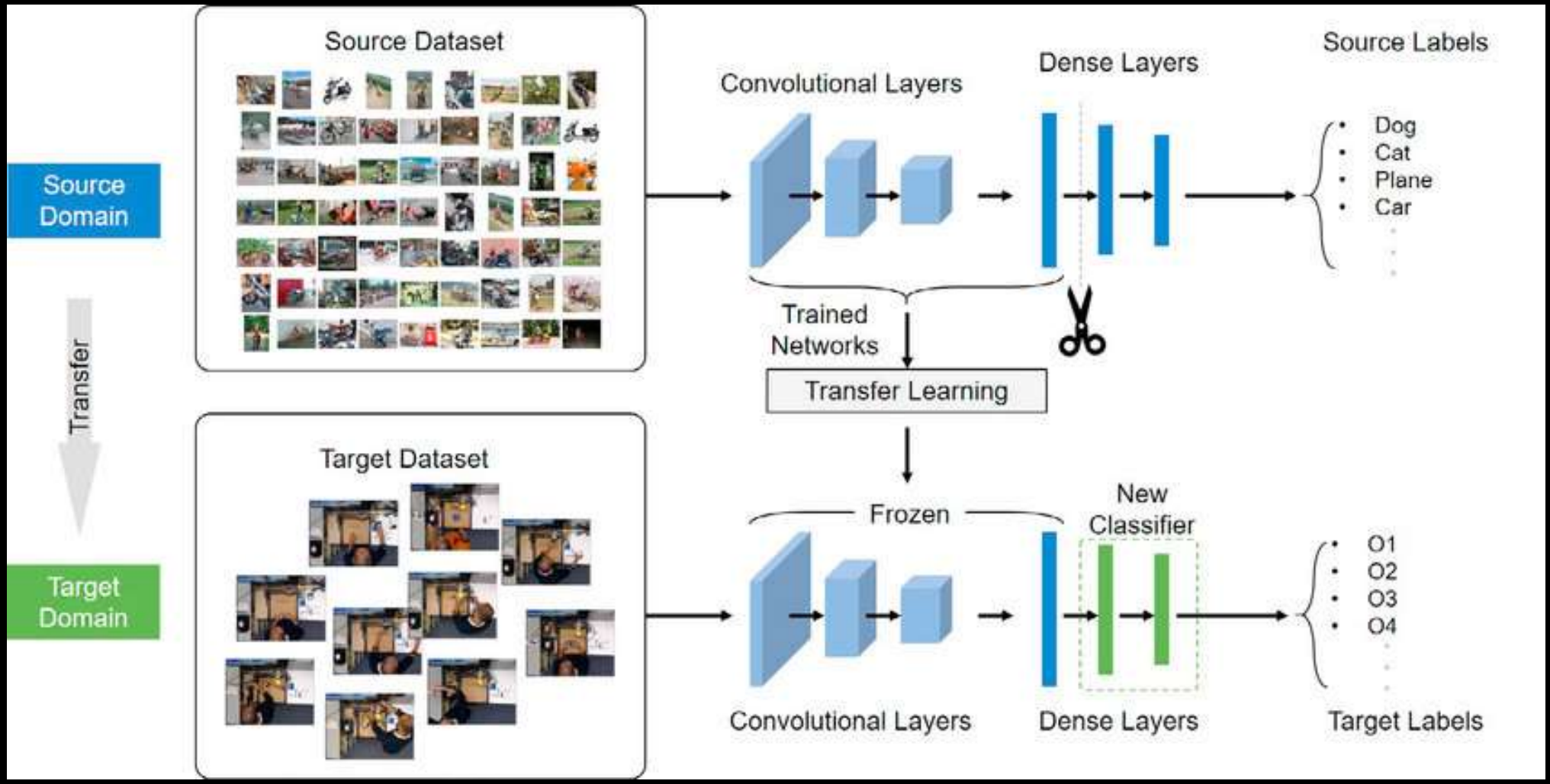
Conv block



Identity block

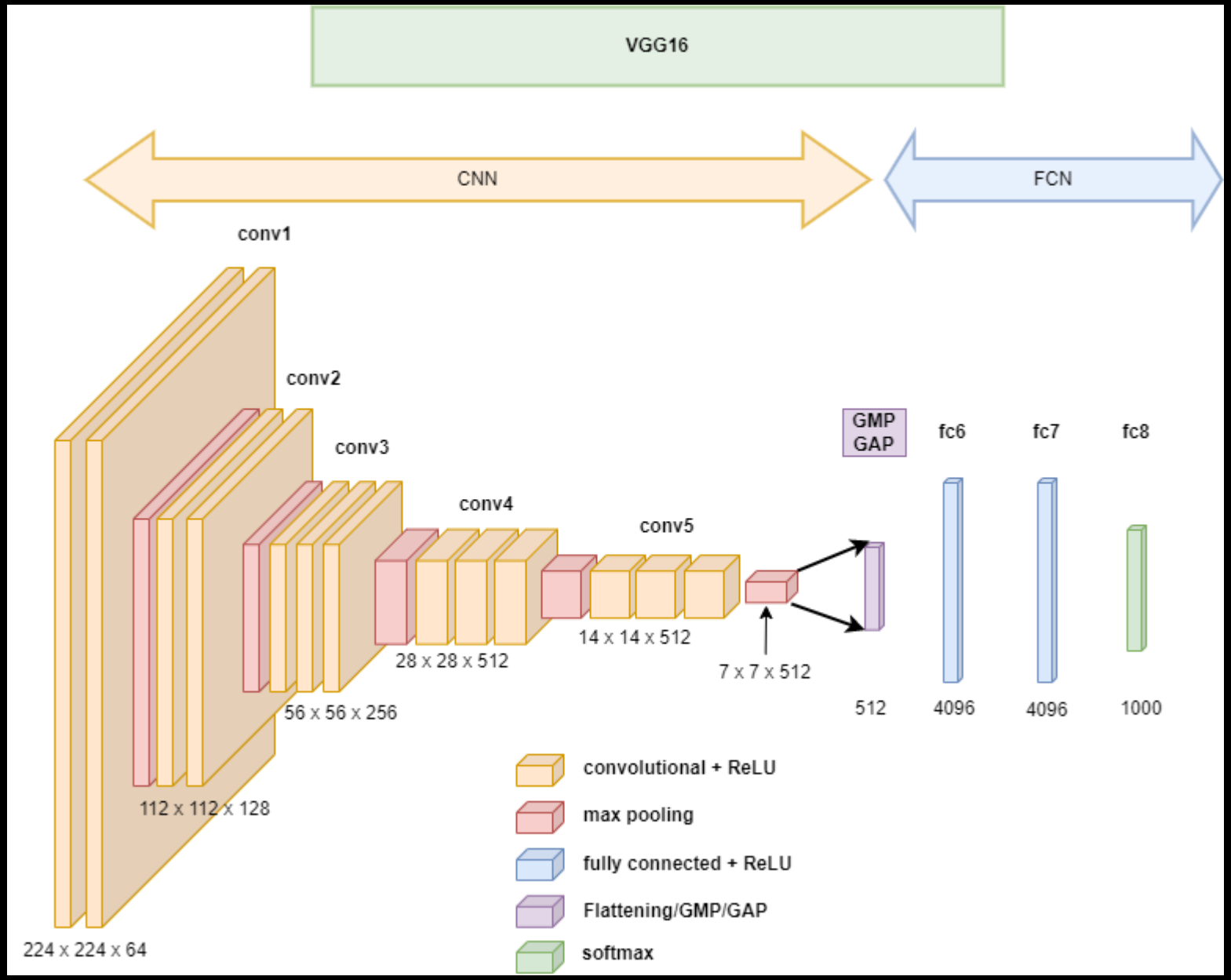
https://towardsdatascience.com/illustrated-10-cnn-architectures-95d78ace614d

전이(전환) 학습 : ConvNet + FCN



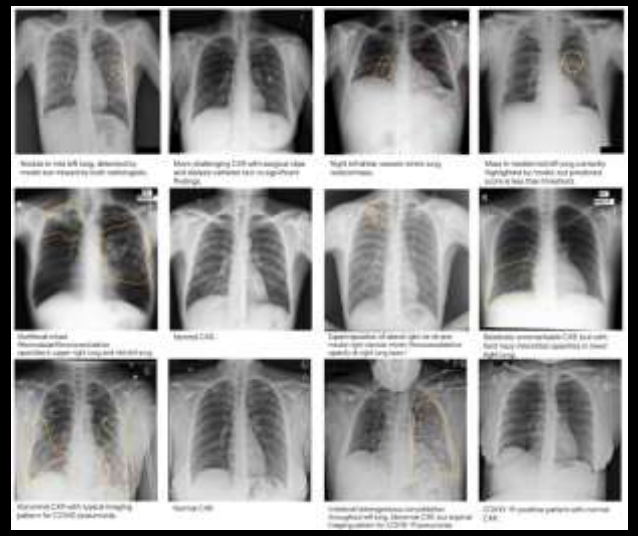
ConvNet– Very deep neural network models

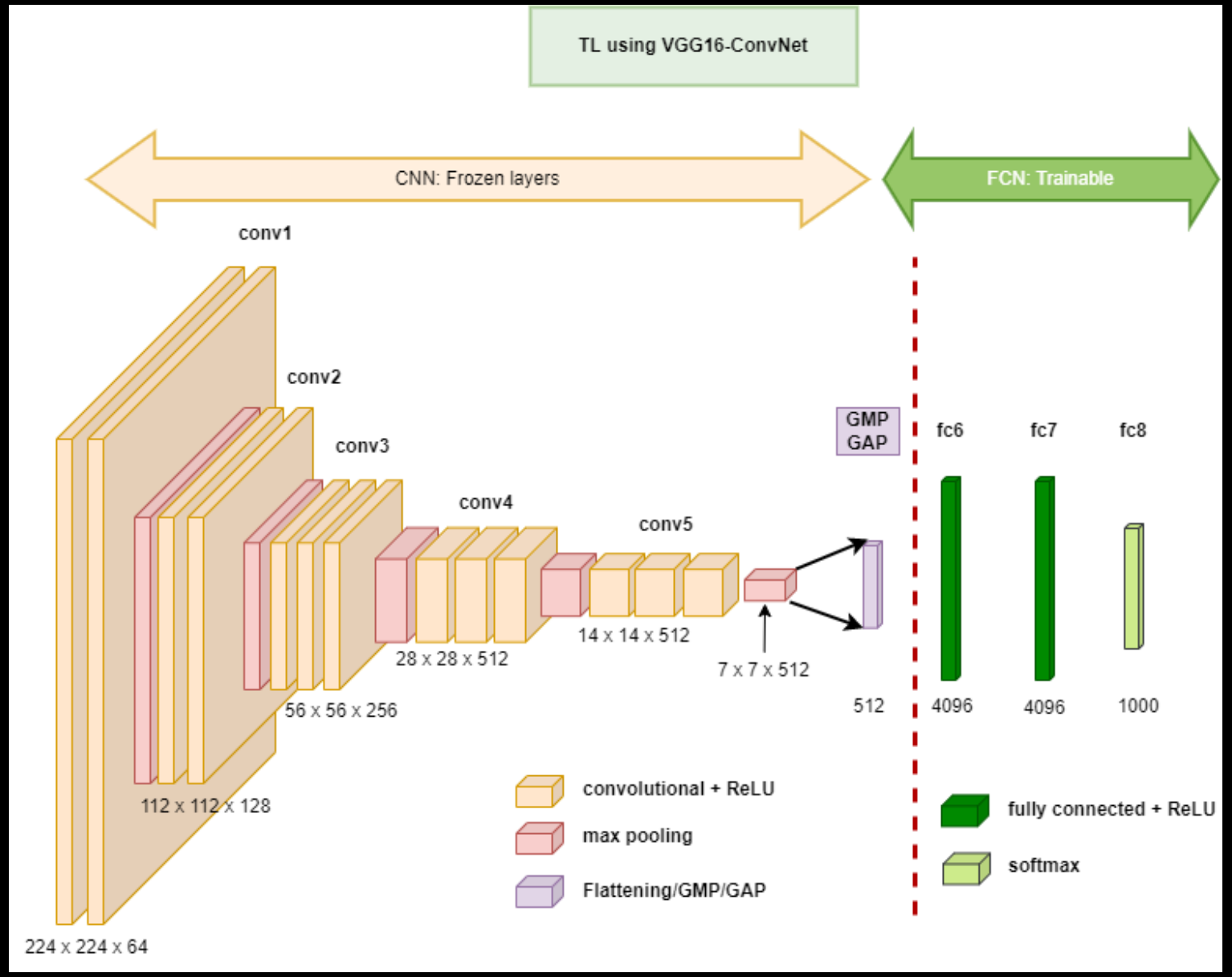
ImageNet



전이(전환) 학습 – Using ConvNet & training FCN

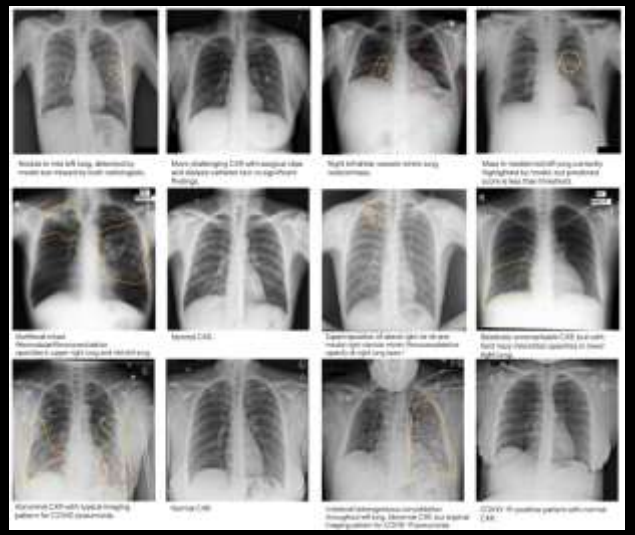
My small dataset

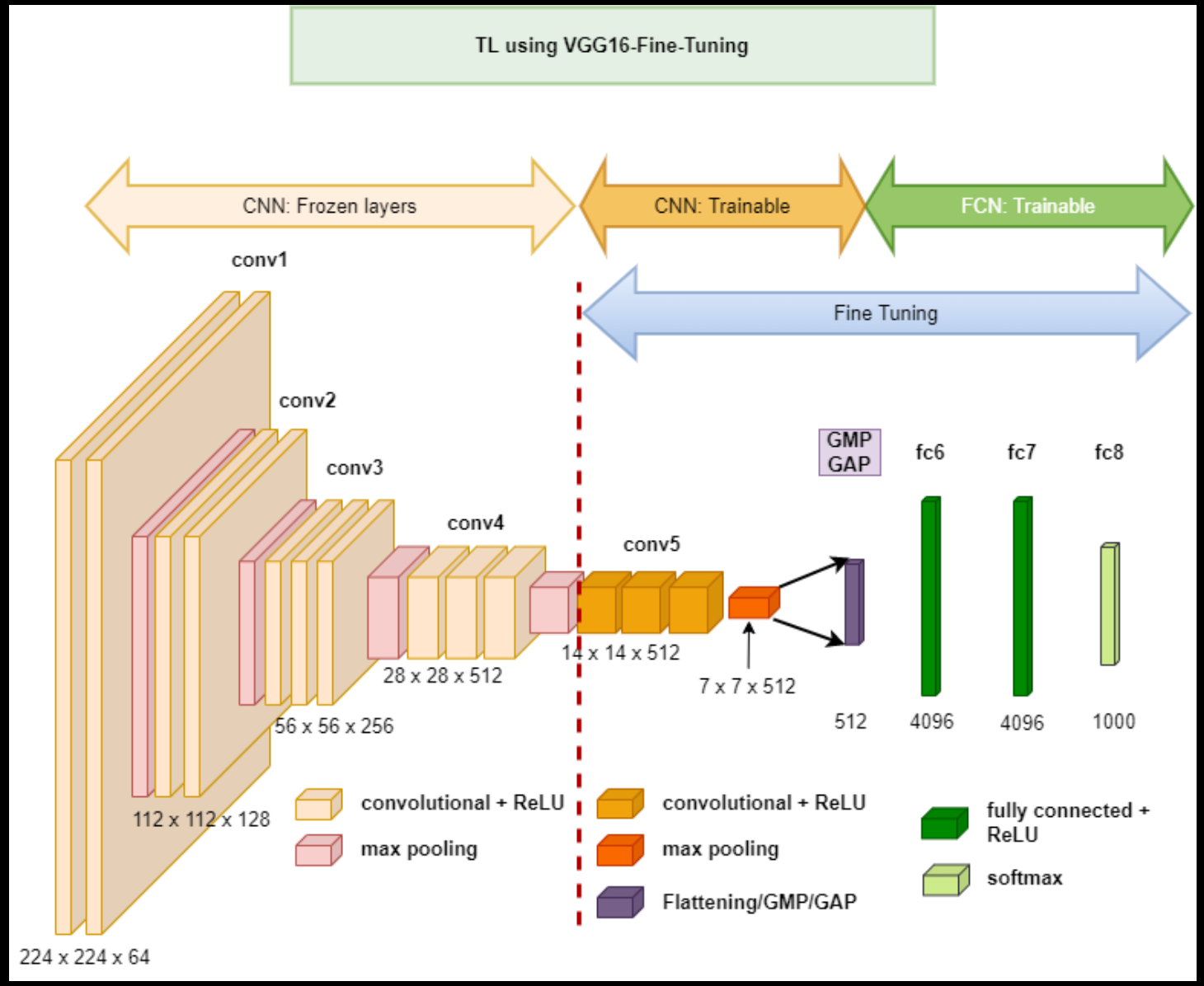




전이(전환) – Fine Tuning of ConvNet & FCN

My small dataset





Transfer learning cifar10

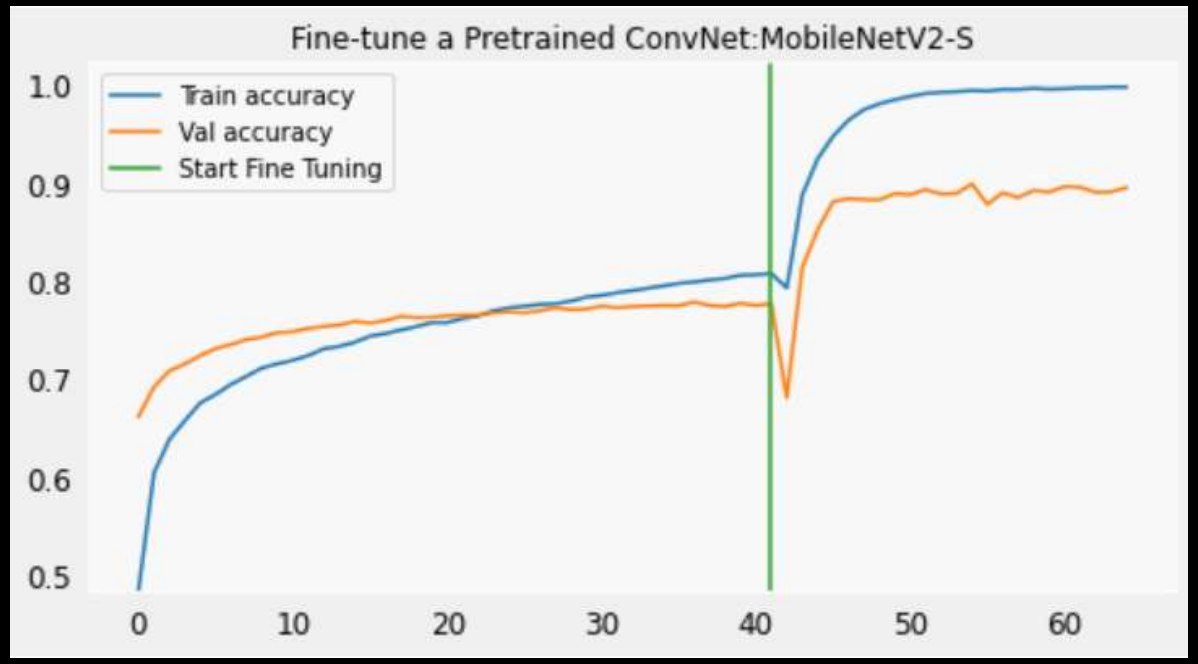
cifar10 데이터의 100%를 이용한 전이(전환) 학습

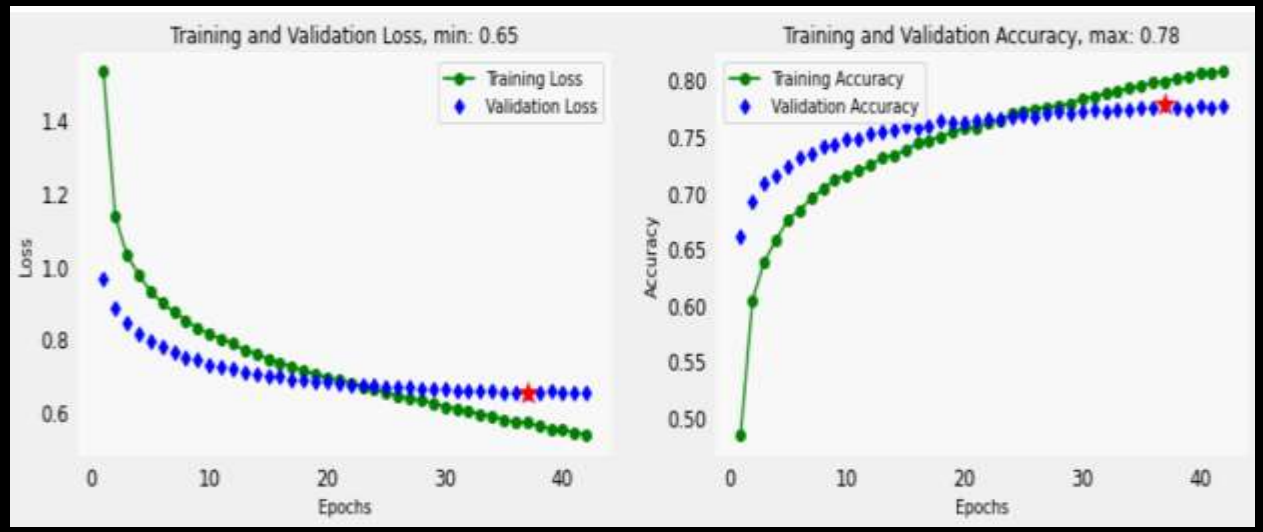
cifar10 데이터의 100%를 이용한 전이(전환) 학습

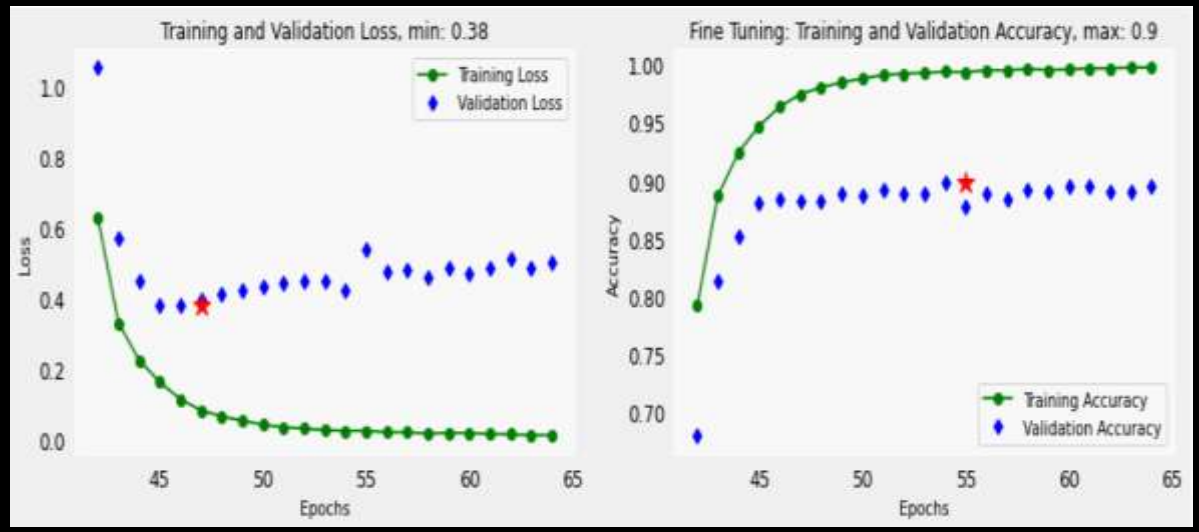
MobilenetV2-Sequential-Model

Fine Tuning Layers: 107~154

```
Total params: 4,110,922
Trainable params: 3,646,922
Non-trainable params: 464,000
```







cifar10 데이터의 100%를 이용한 전이(전환) 학습

MobilenetV2-Functional-Model

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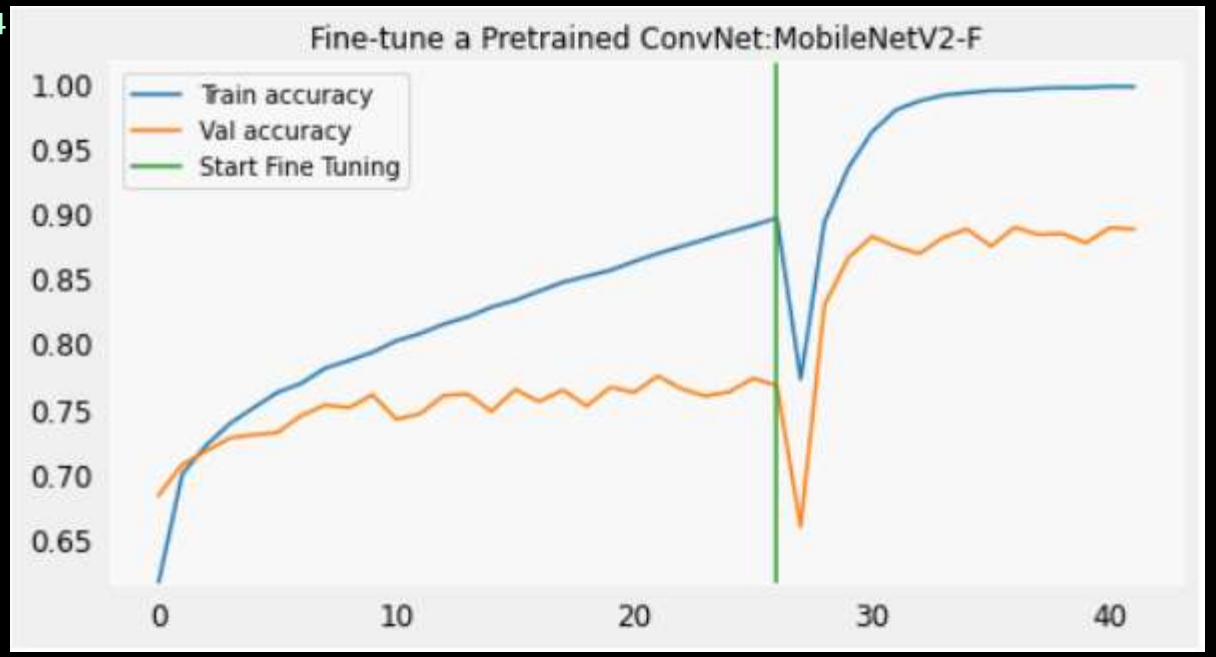
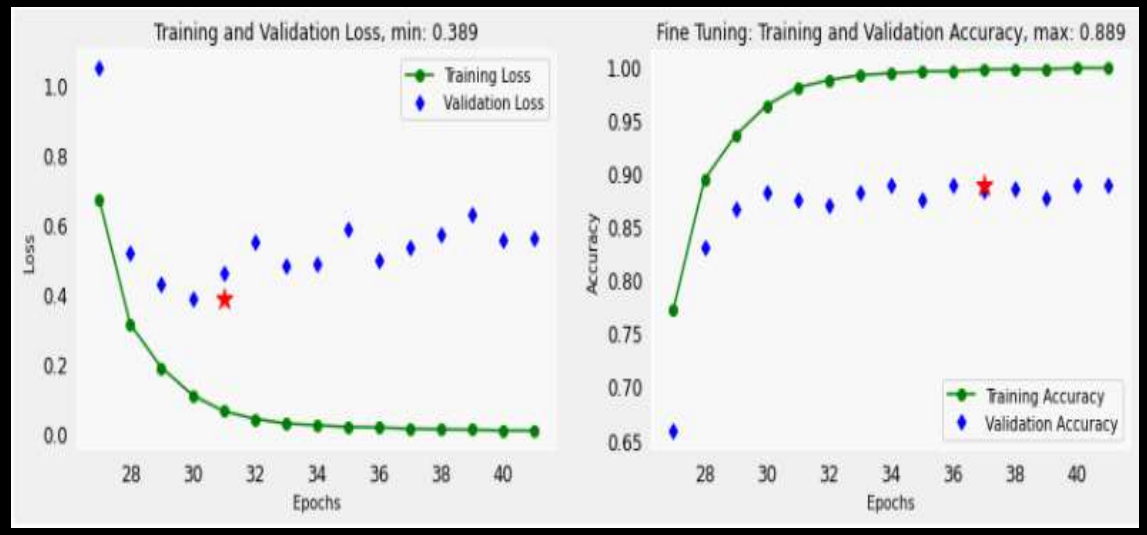


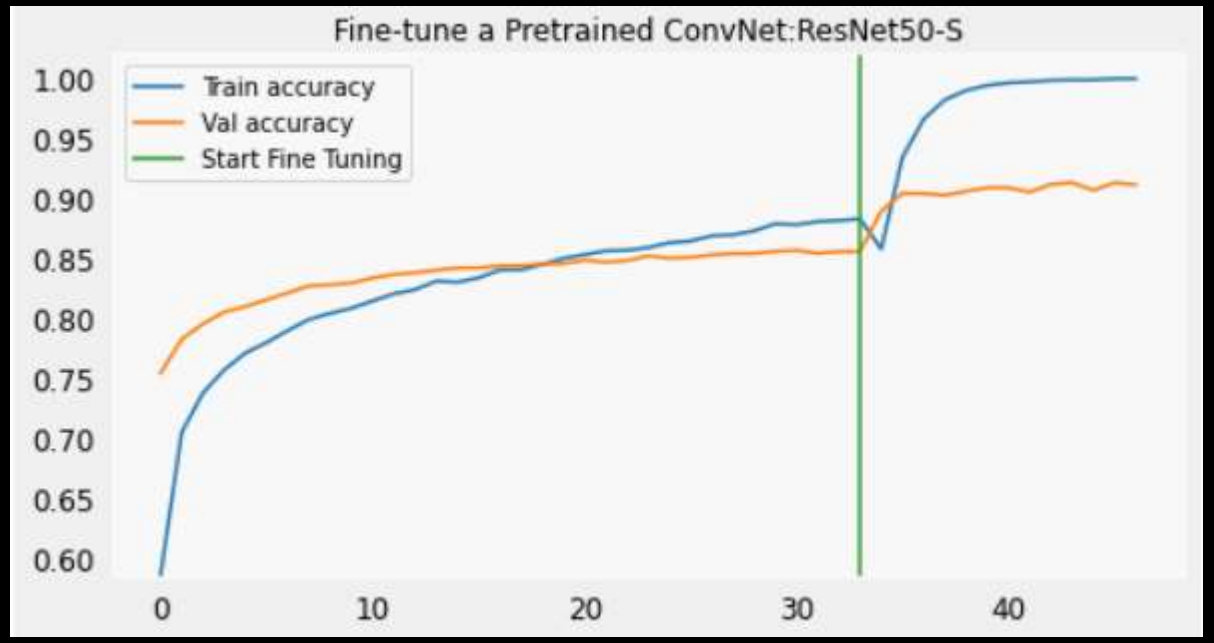


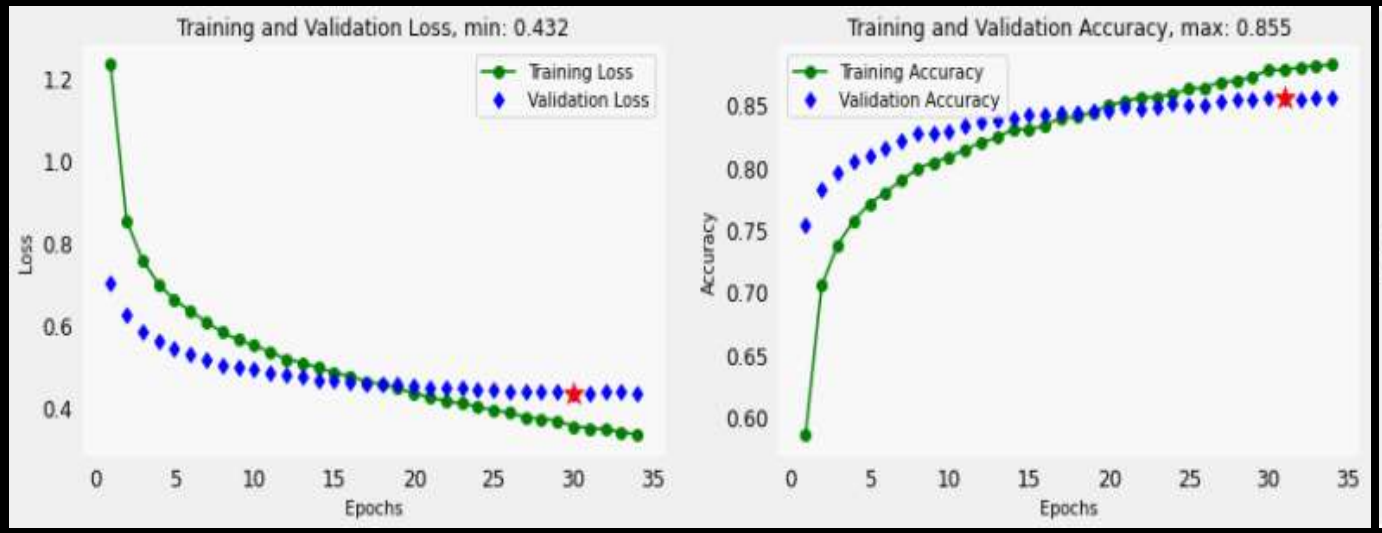
cifar10 데이터의 100%를 이용한 전이(전환) 학습

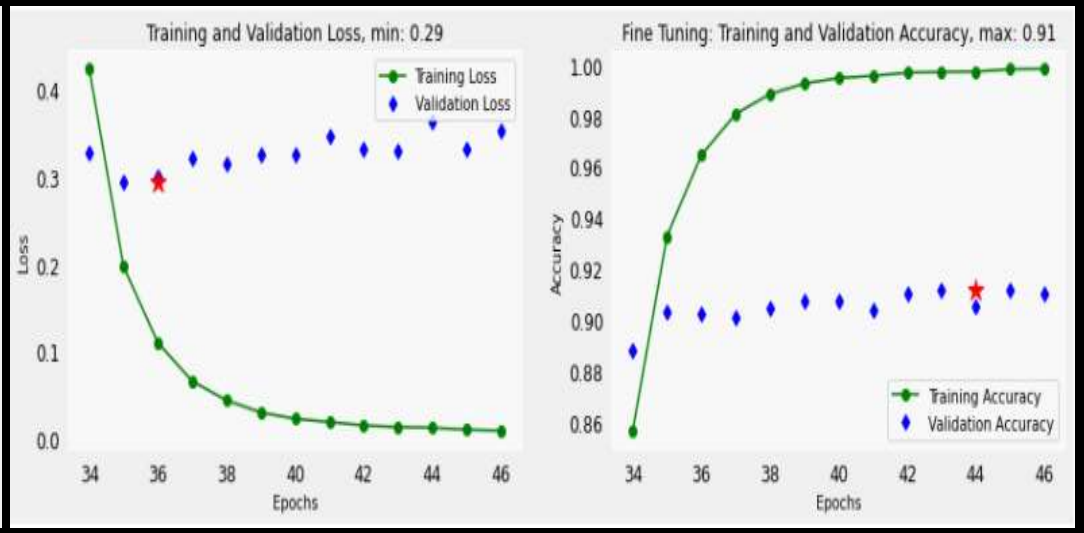
Resnet50-Sequential-Model

Fine Tuning Layers: 143~175

```
Total params: 26,230,154
Trainable params: 2,635,274
Non-trainable params: 23,594,880
```







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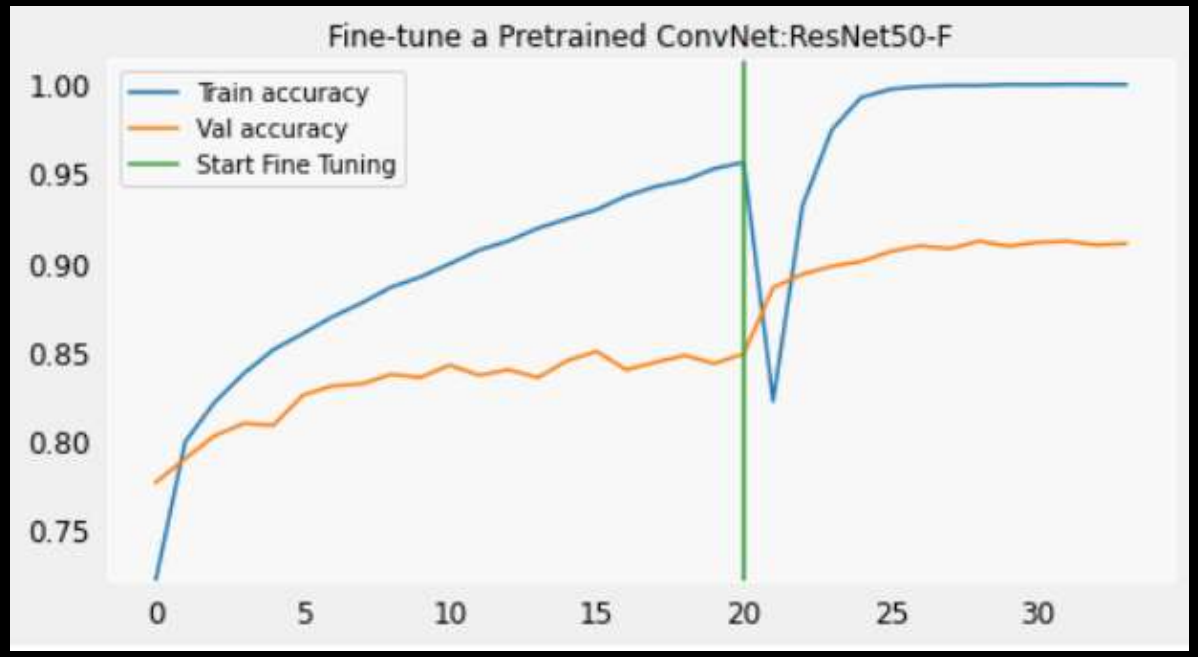

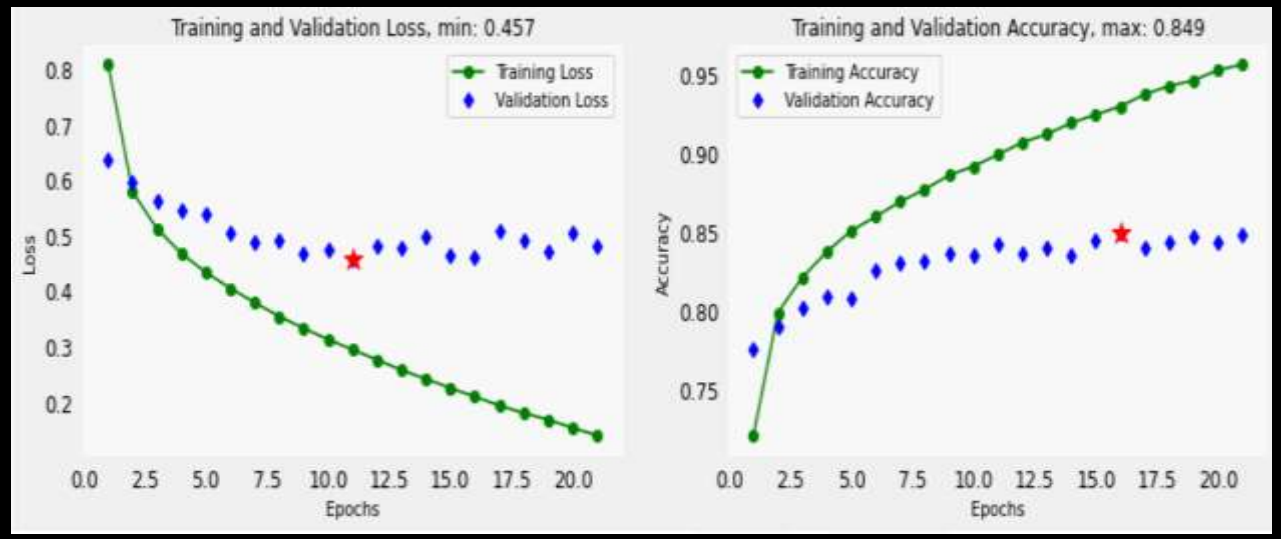

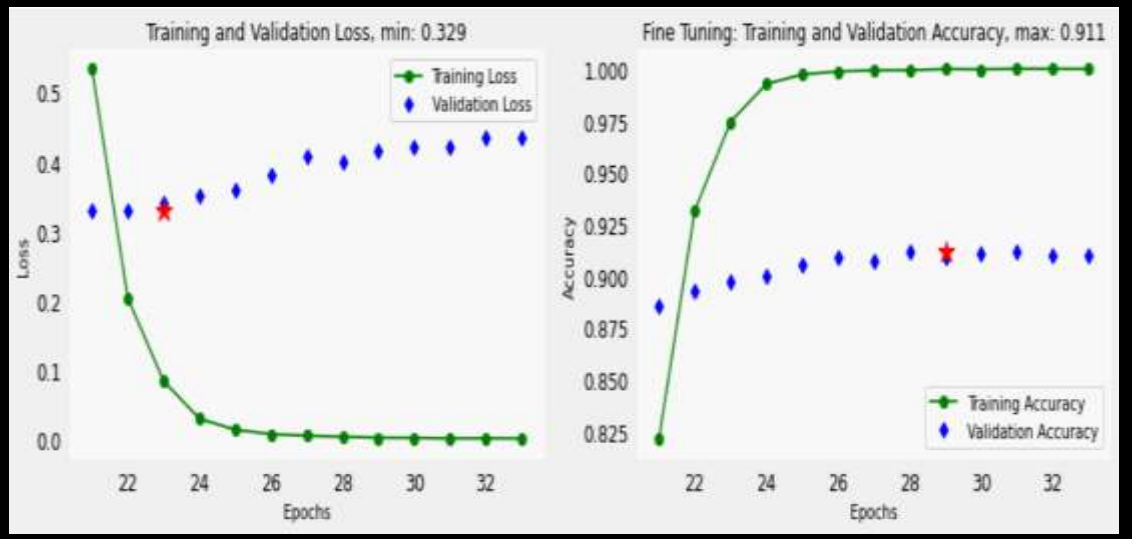

Transfer learning
cifar10

cifar10 데이터의 10%를 이용한 전이(전환) 학습

cifar10 데이터의 10%를 이용한 전이(전환) 학습

Resnet50-Sequential-Model

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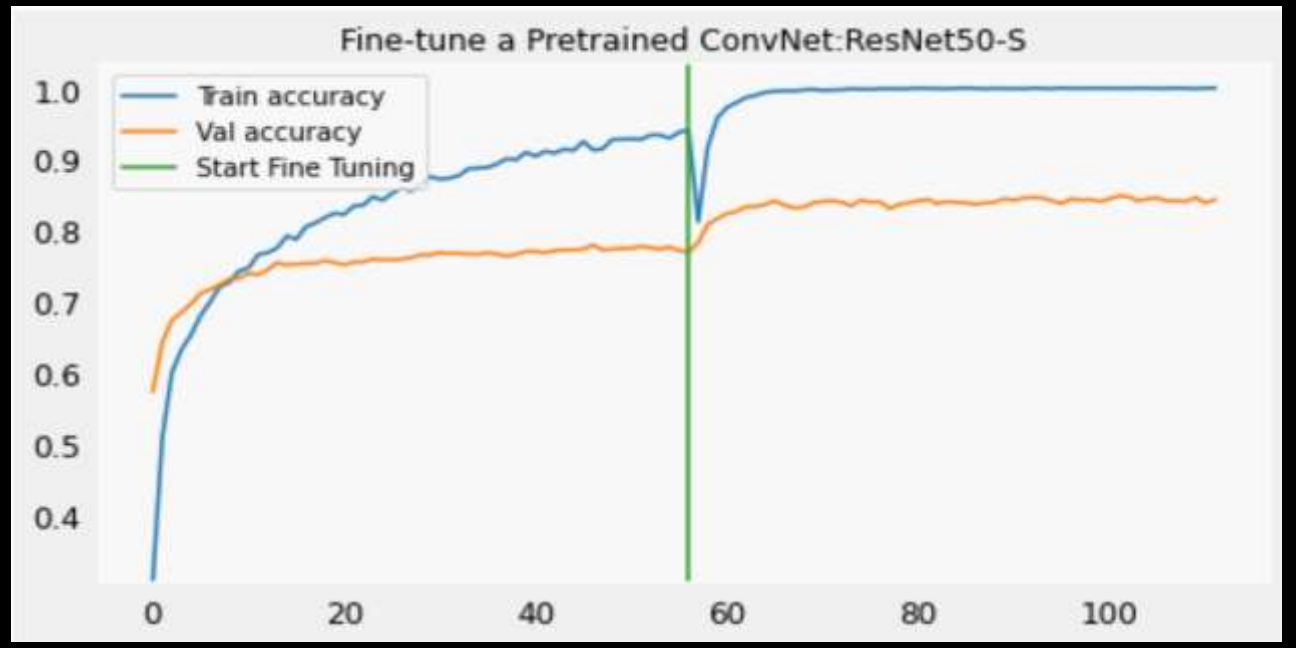

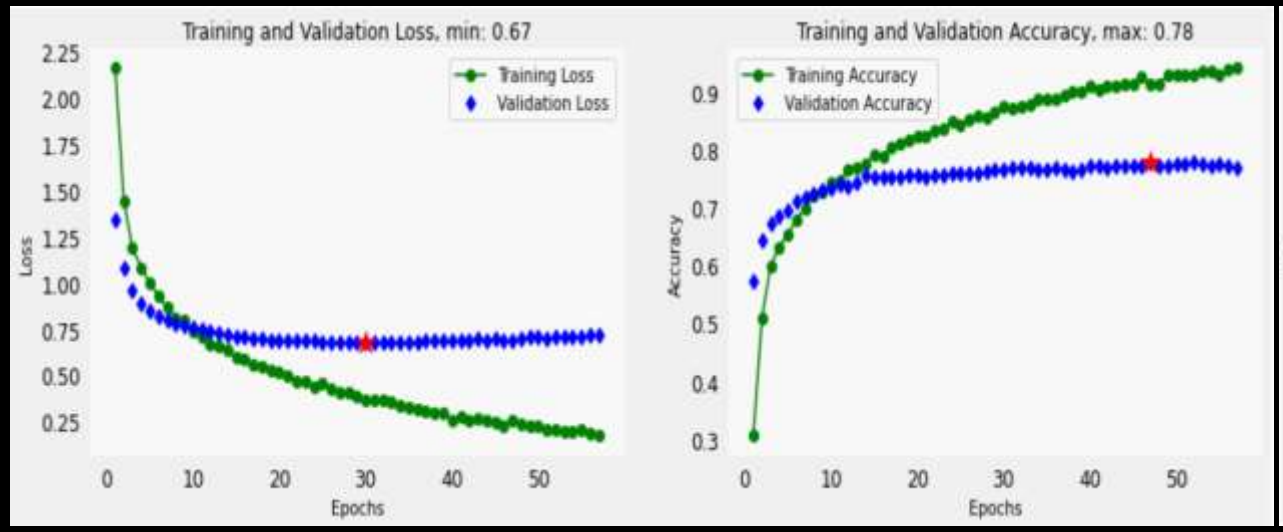

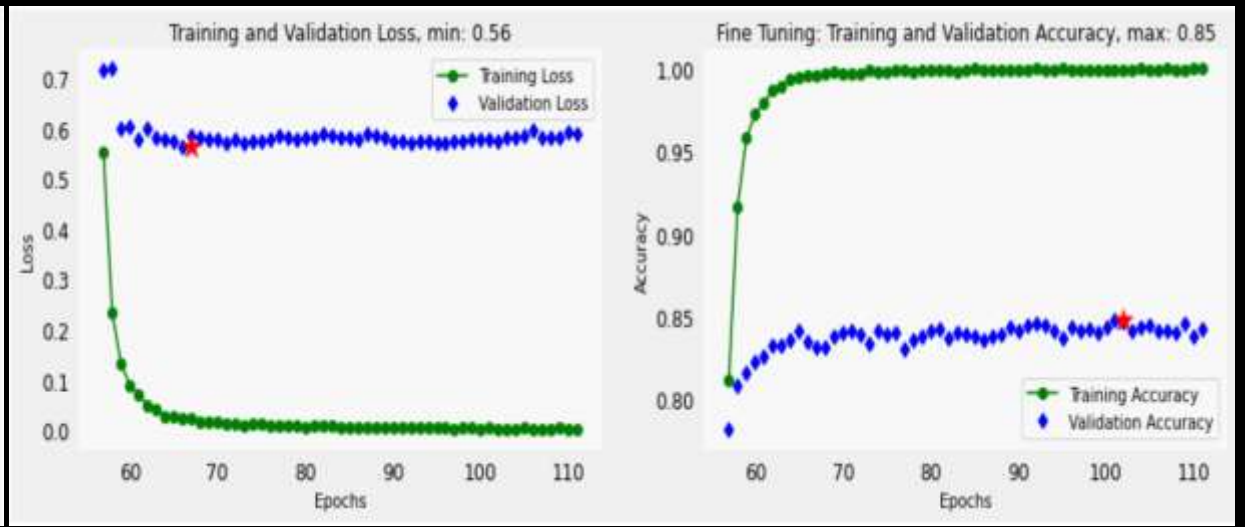

cifar10 데이터의 10%를 이용한 전이(전환) 학습

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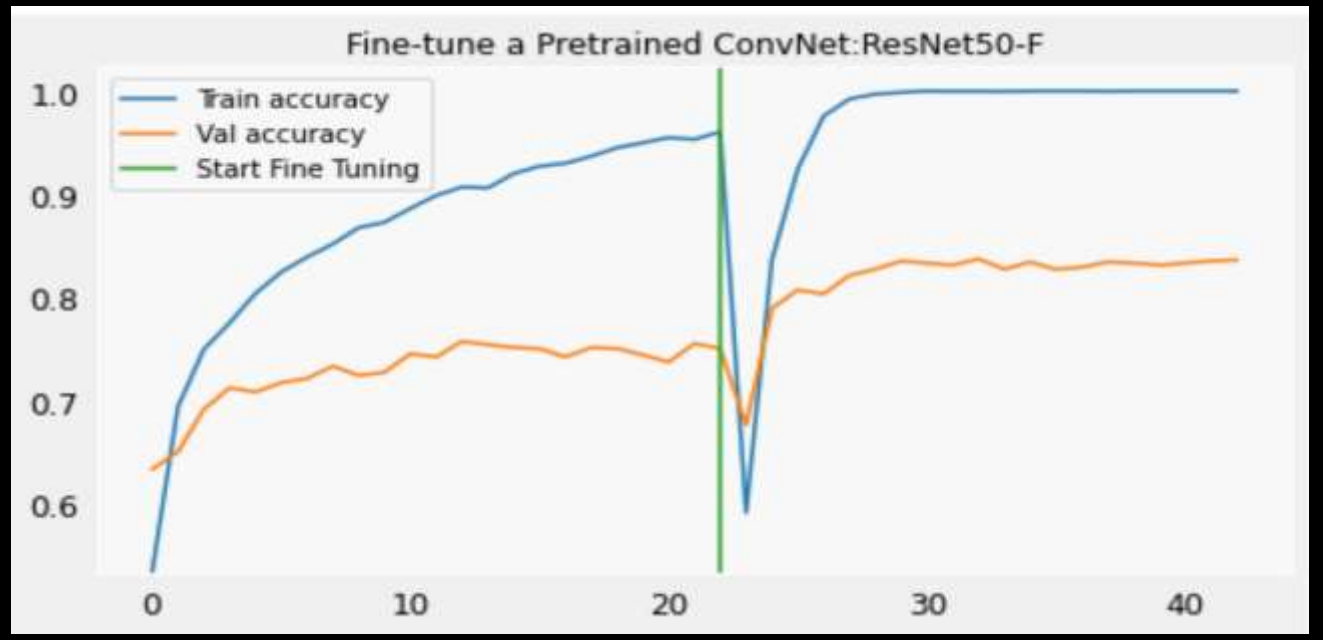

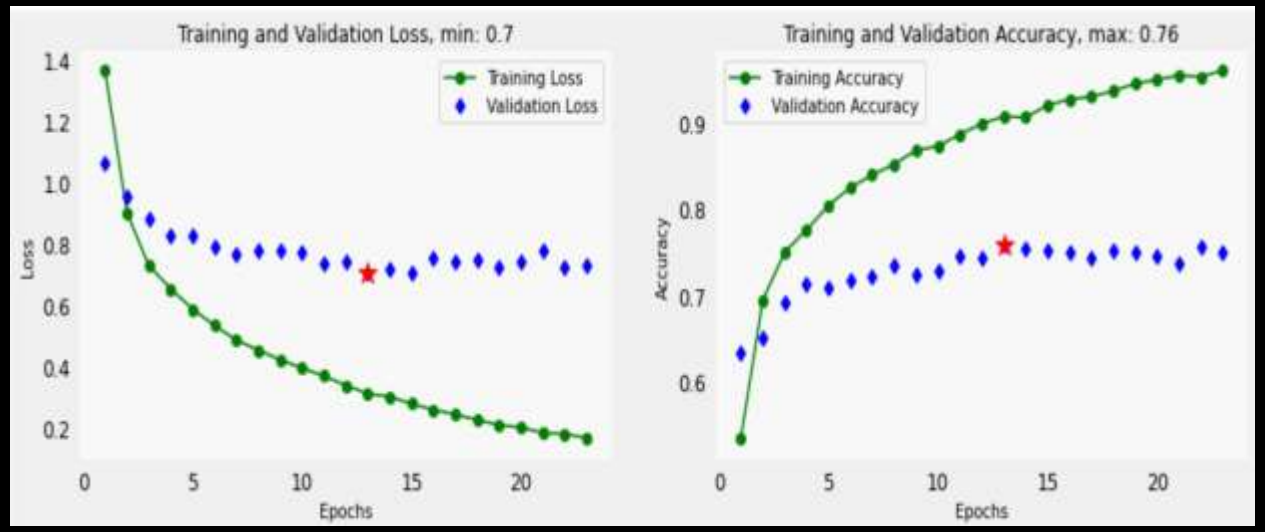

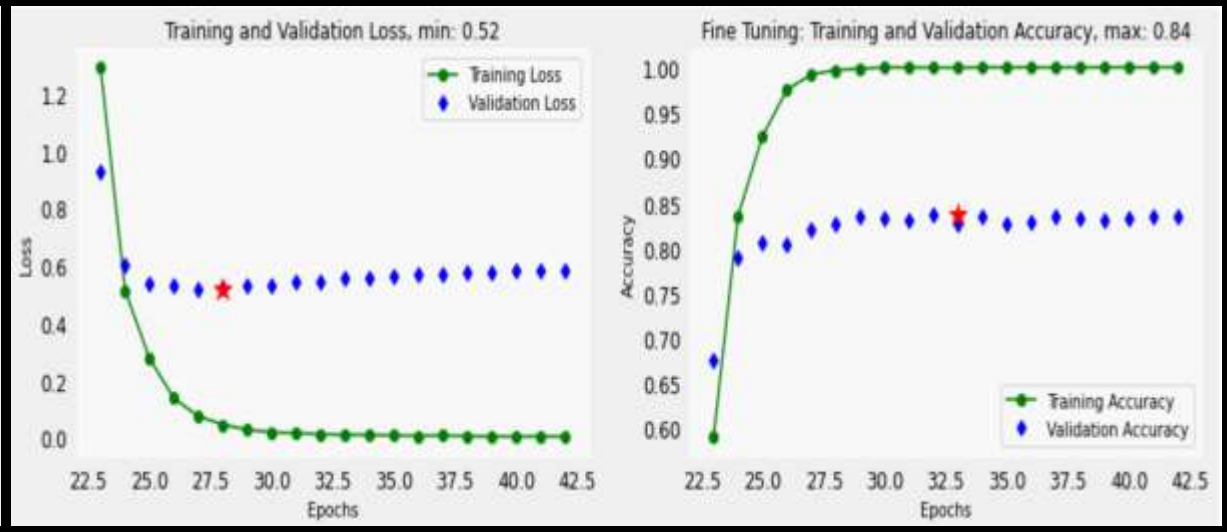

cifar10 데이터의 10%를 이용한 전이(전환) 학습

MobilenetV2-Sequential-Model

Fine Tuning Layers: 107~154

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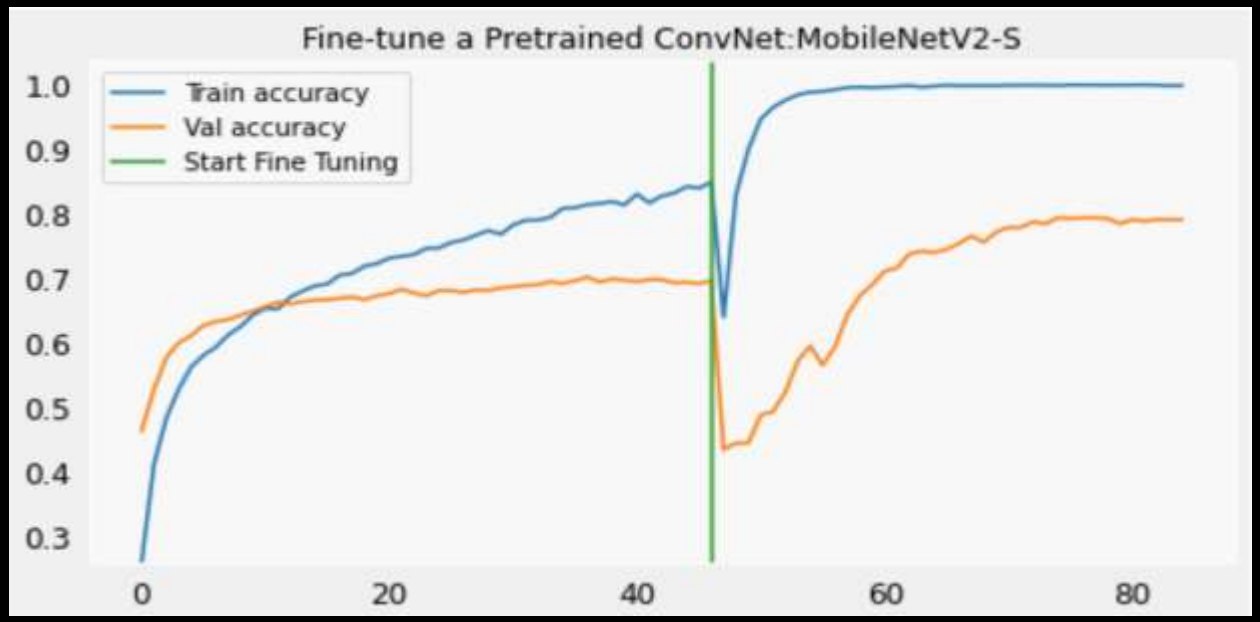

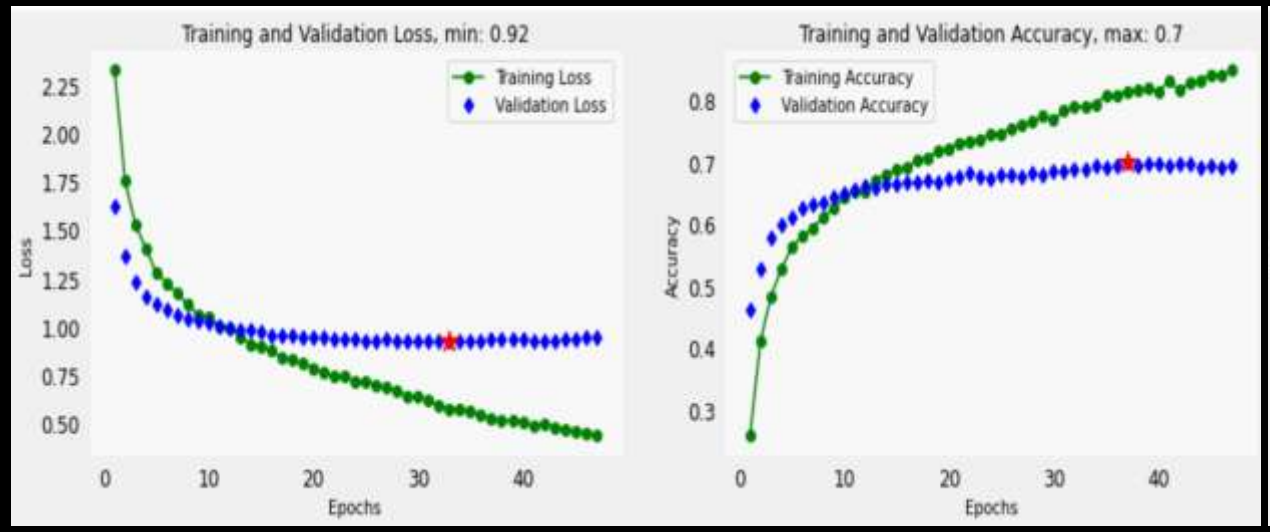

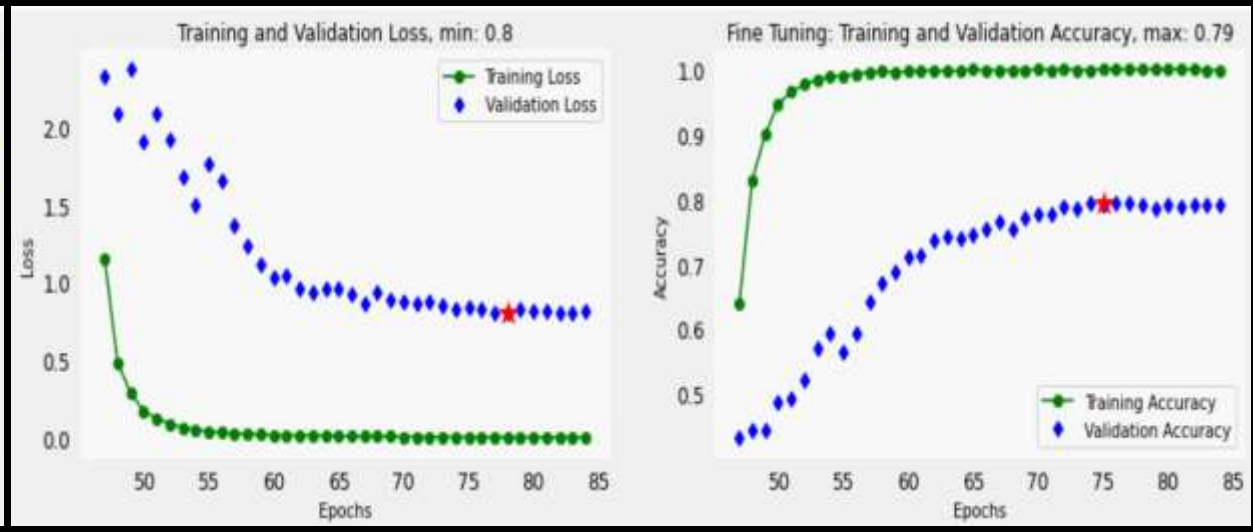

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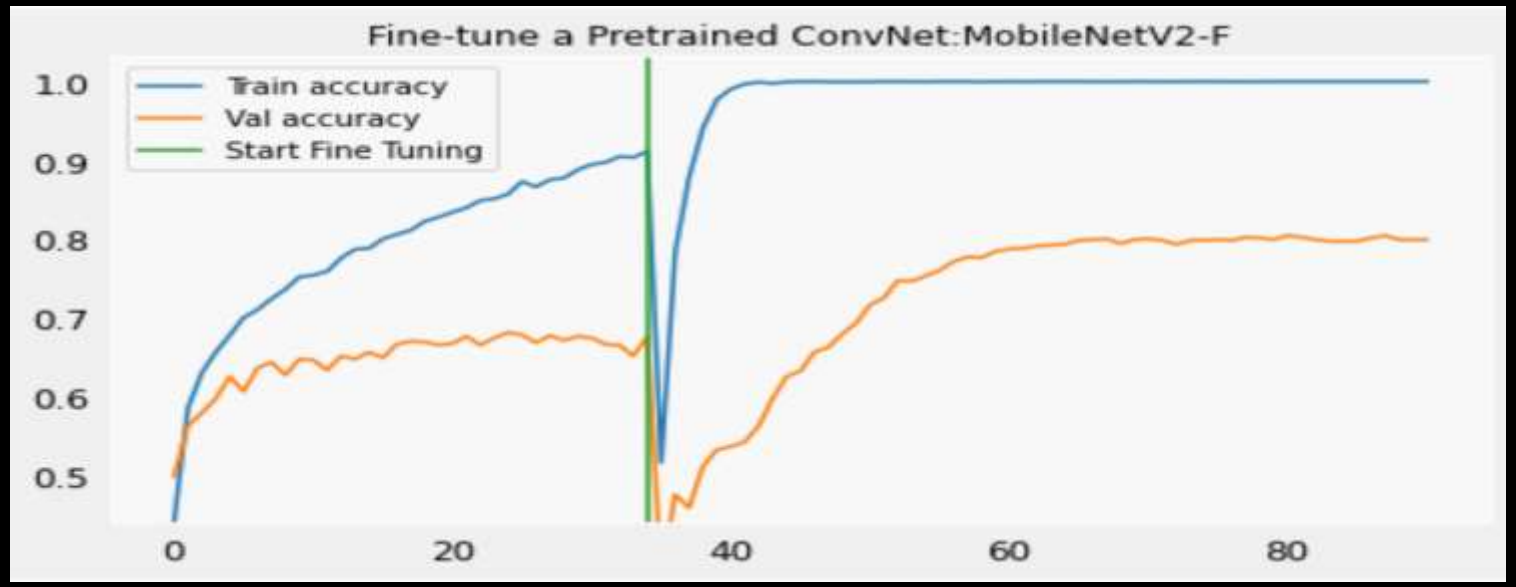

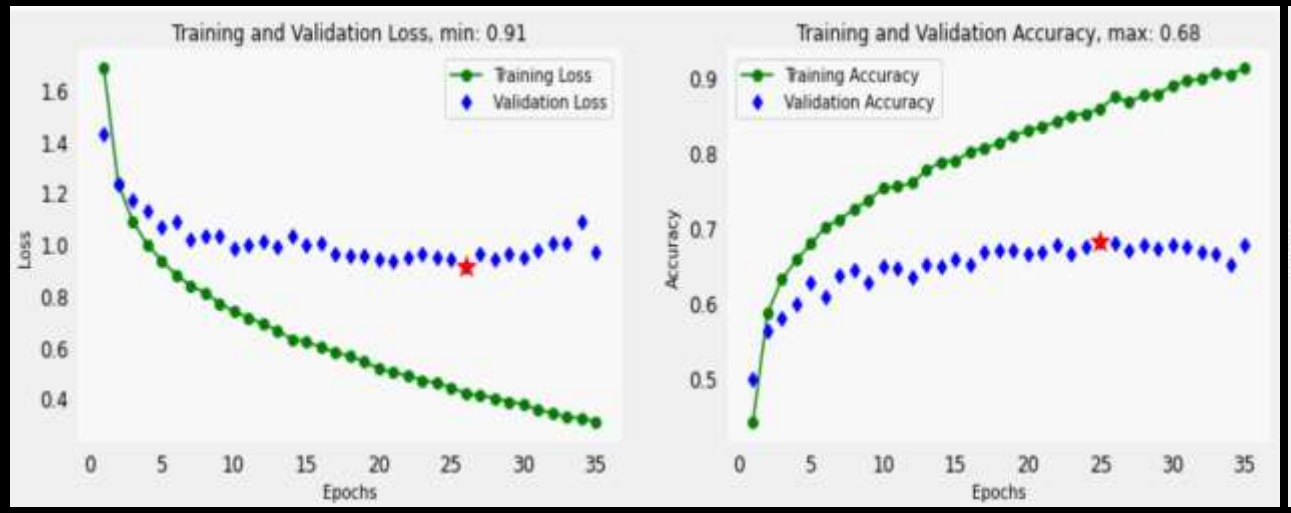

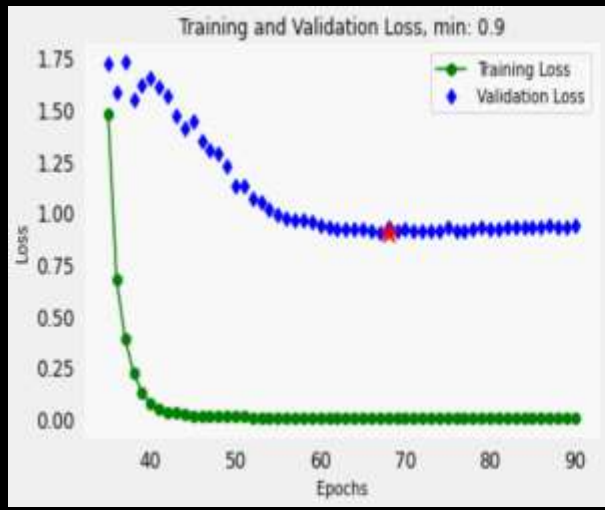

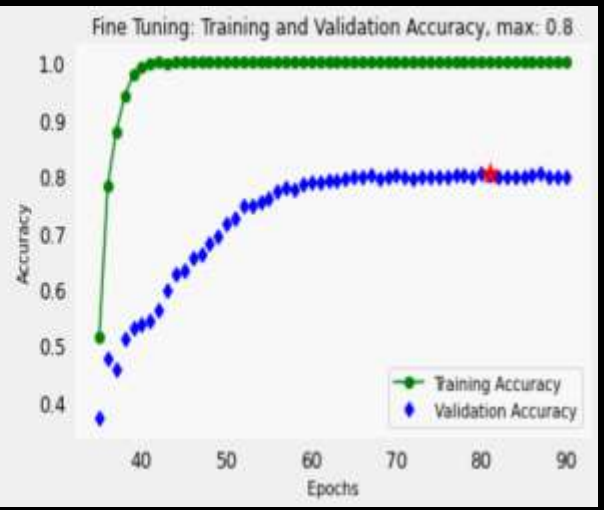

Transfer learning cifar10

[기말 시험 실기] cifar10 데이터의 10%를 이용한 전이(전환) 학습

기말 실기

0. Data : 10 % cifar10
1. TL_base: MobileNetV2
2. Data augmentation and Network architecture
3. Fine Tuning
4. + alpha (Your attempt and idea)

장소 : E531

시간: 12월13일(월) 오후 2시~3시30분

방식: Full Open Resource

평가: accuracy of test data and idea