Pretrained Models and Transfer Learning 101

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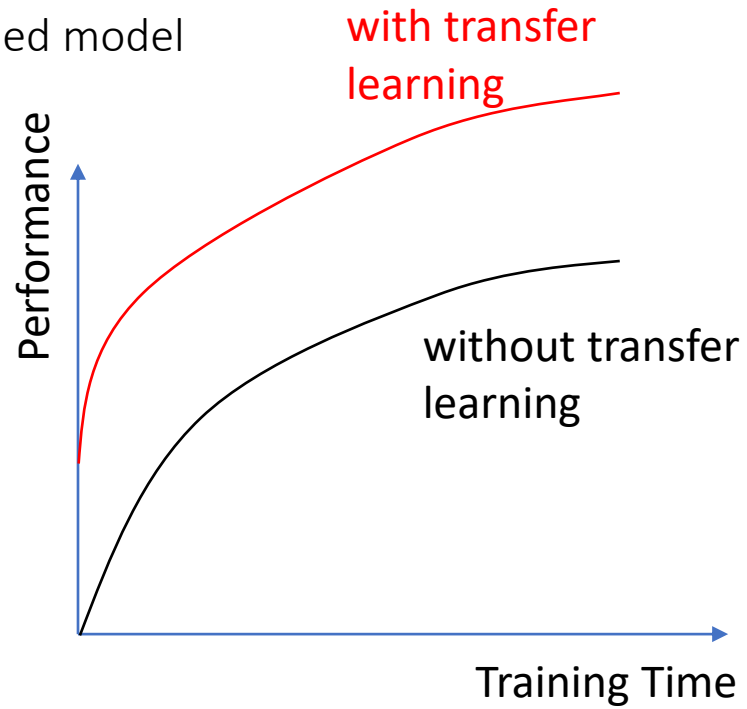
Pretrained Models and Transfer Learning

Introduction

- Problem: only small number of images for training
- Solution: don‘t train yourself, but use an already trained model
- Why?
  - Existing weights can be used
  - Use existing features for other classes
  - Better performance
  - Save time
  - Tested architecture



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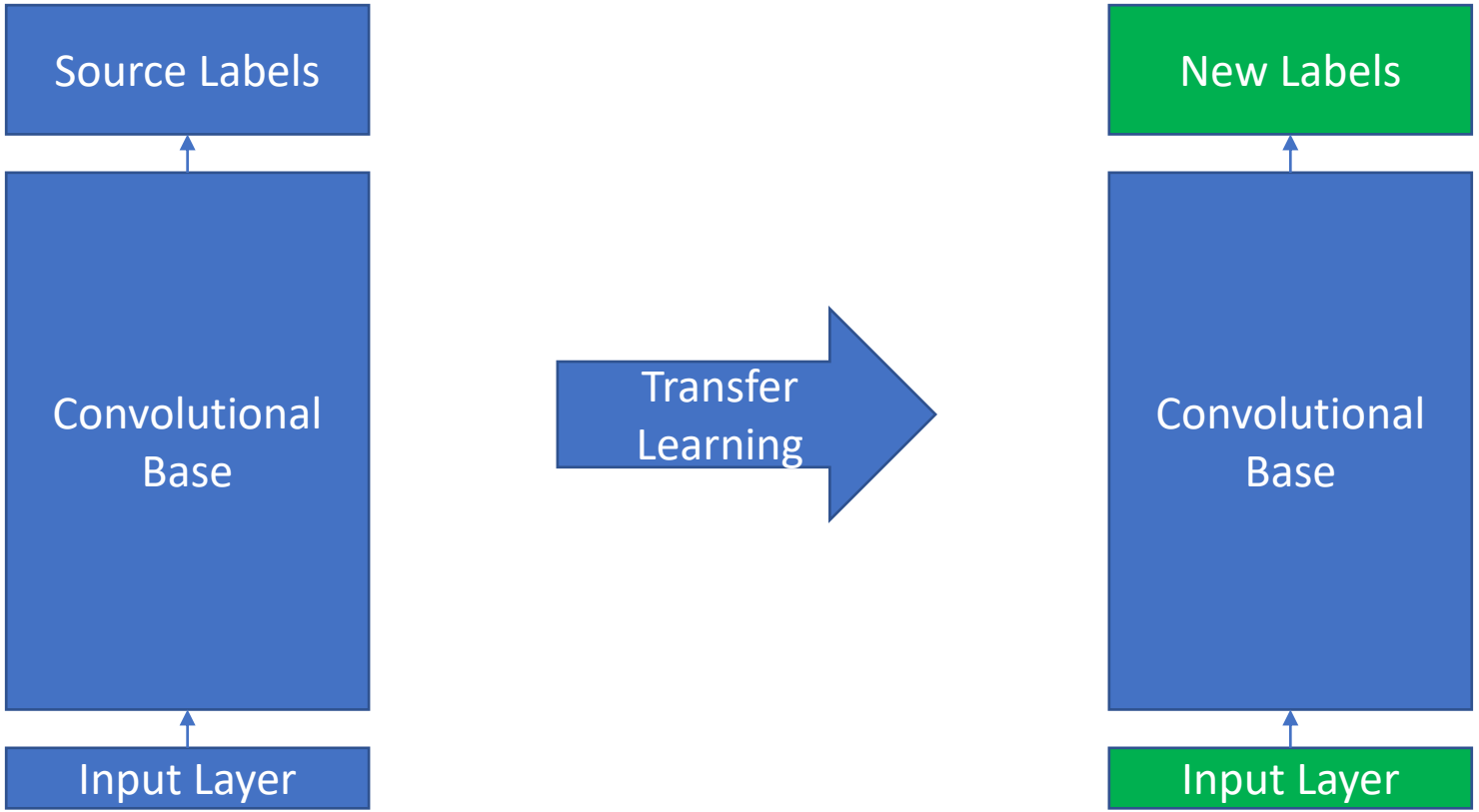
Usage



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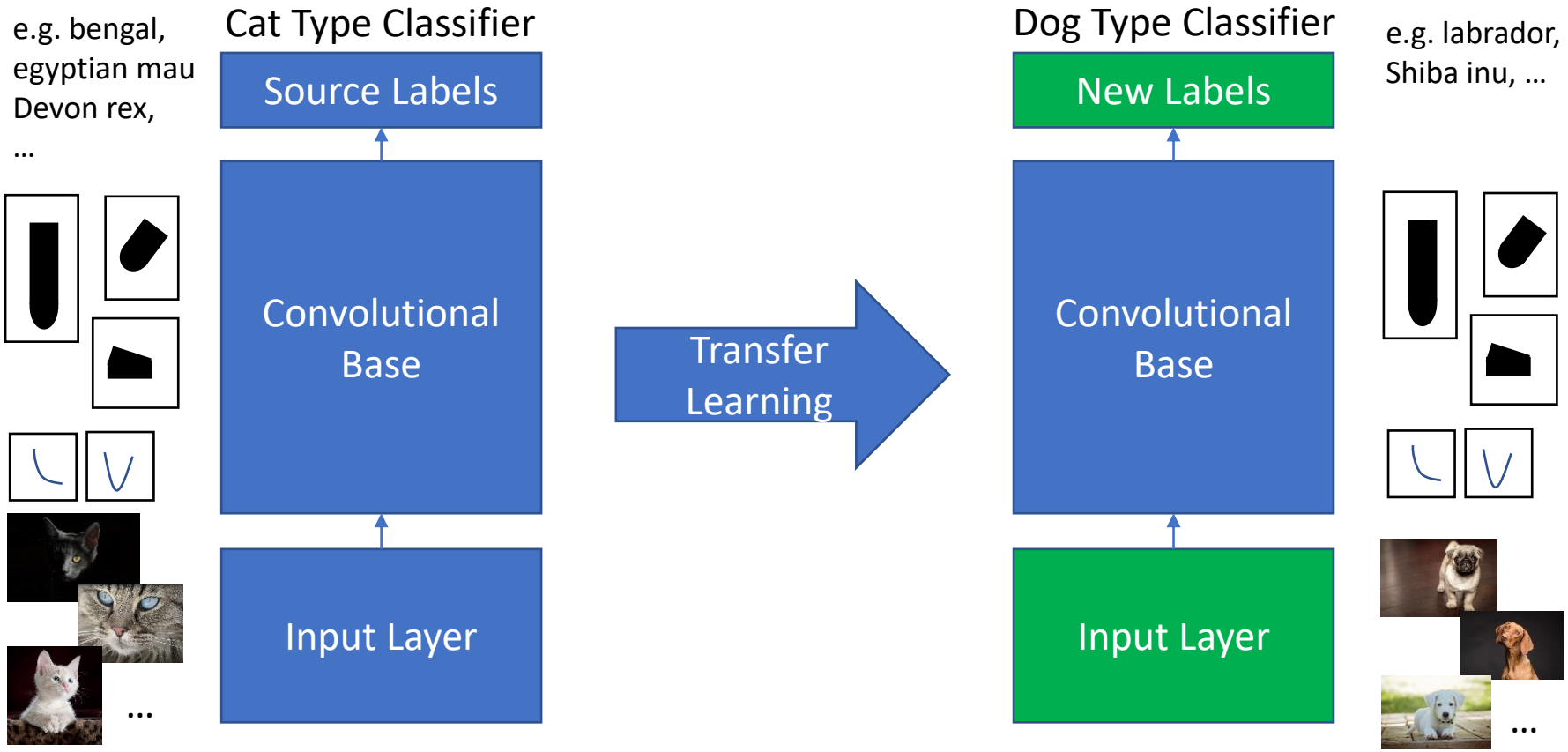
Example



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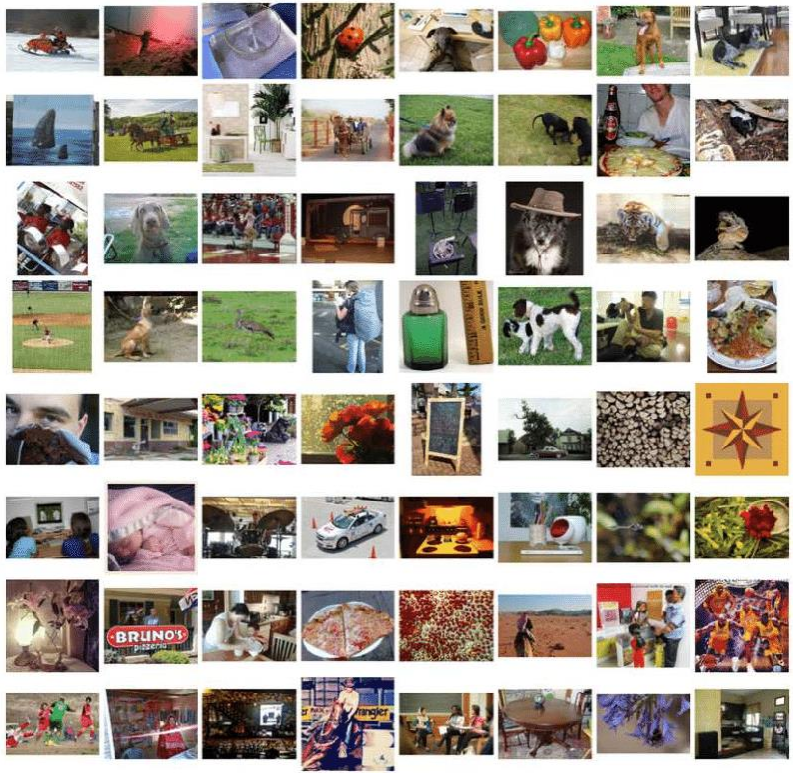
Imagenet

- Imagenet challenge for Large Scale Recognition
  - Available since 2010
  - updated every year
  - 1000 categories
  - > 1 million images



Source: https://www.researchgate.net/figure/Examples-in-the-ImageNet-dataset_fig7_314646236

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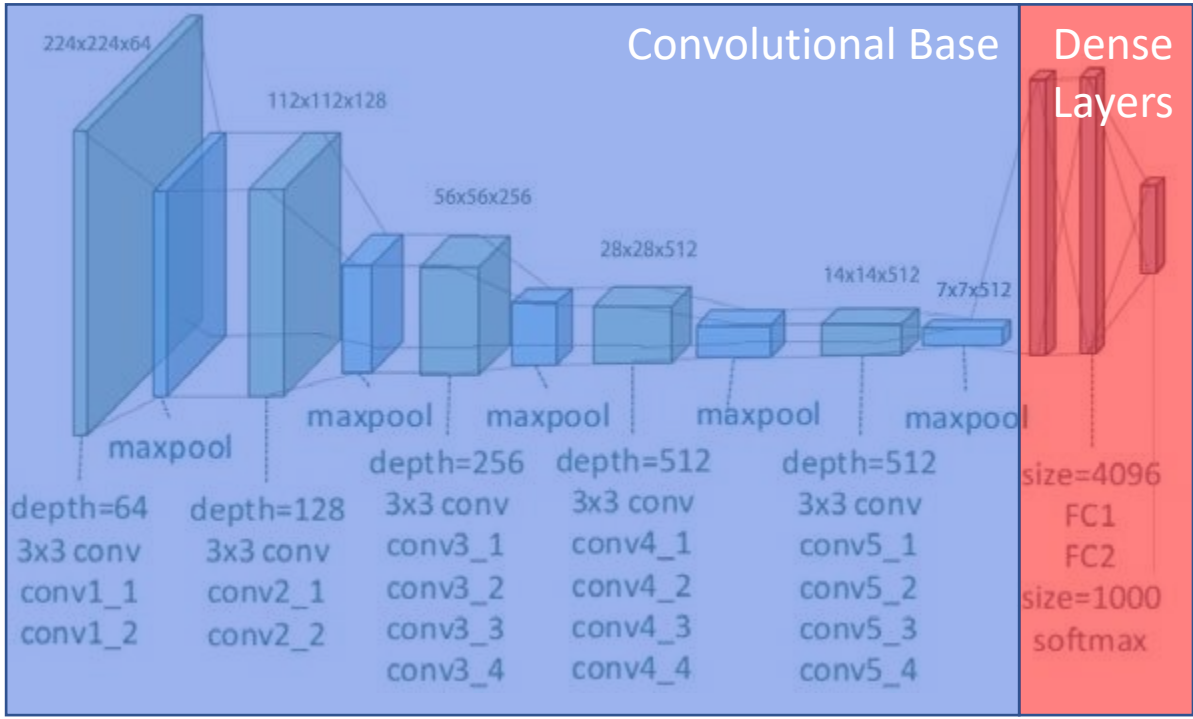
VGG19

- Deep Convolutional Network for large-scale image recognition
- Developed for ImageNet challenge



Model Architecture

Source: https://www.researchgate.net/figure/llustration-of-the-network-architecture-of-VGG-19-model-conv-means-convolution-FC-means_fig2_325137356