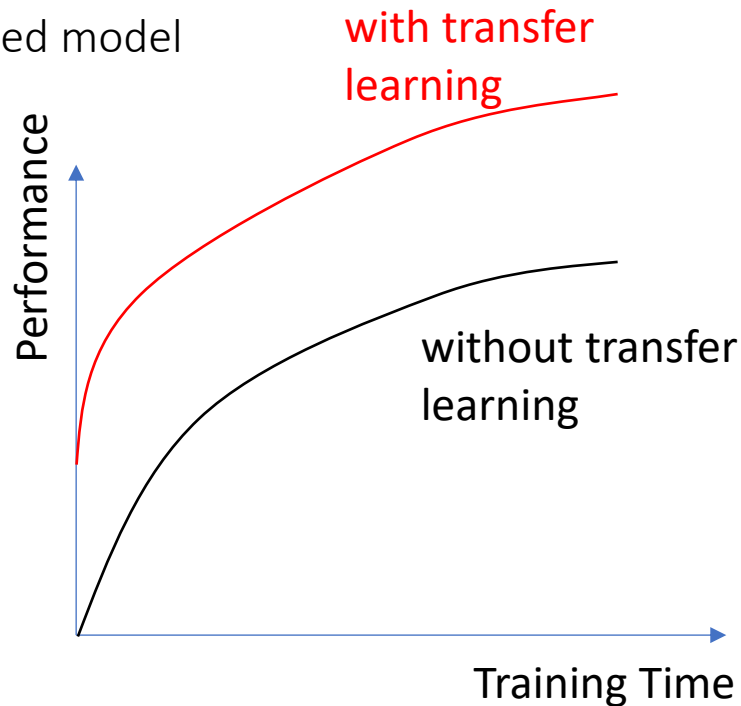


# Pretrained Models and Transfer Learning 101

# Pretrained Models and Transfer Learning

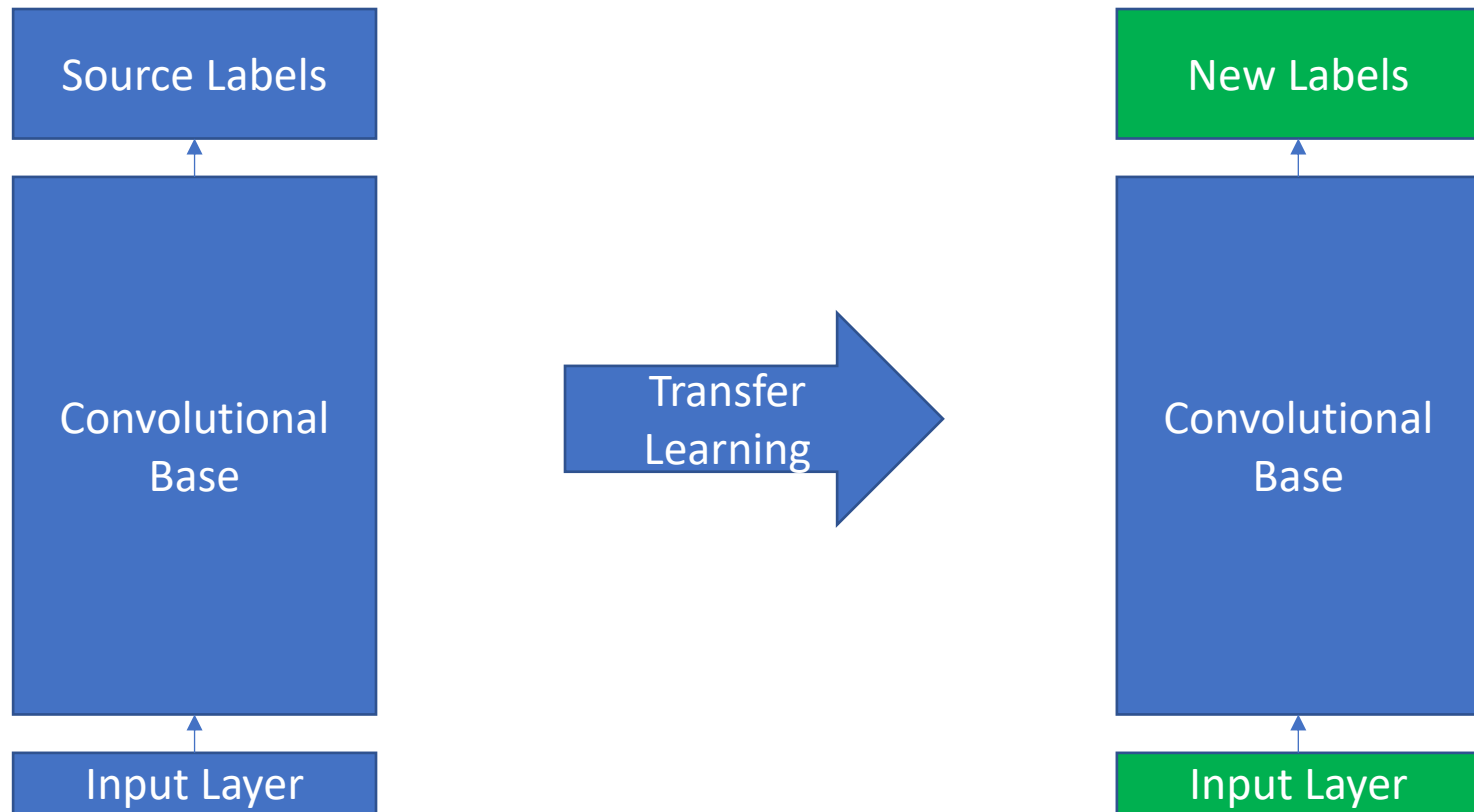
## Introduction

- 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



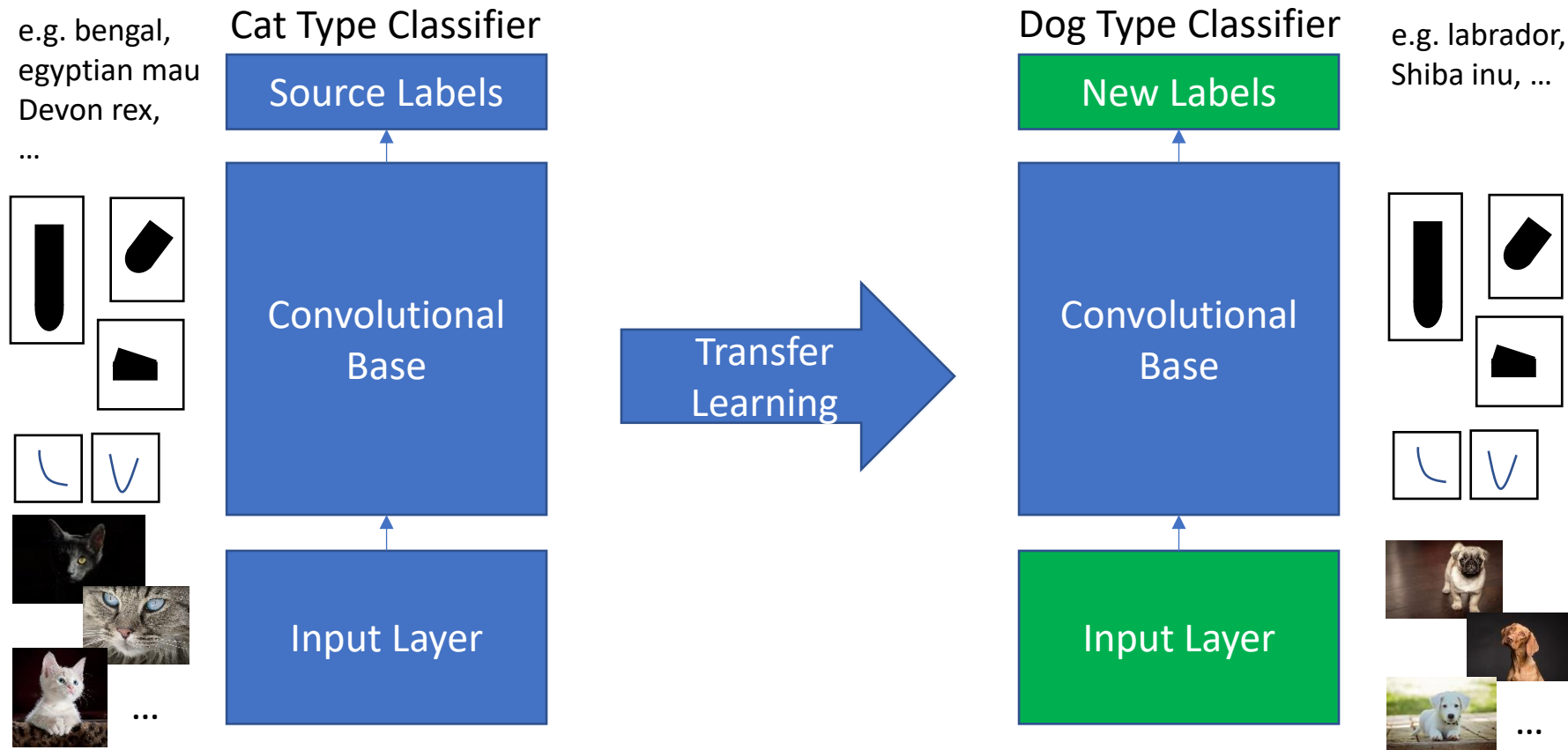
# Pretrained Models and Transfer Learning

Usage



# Pretrained Models and Transfer Learning

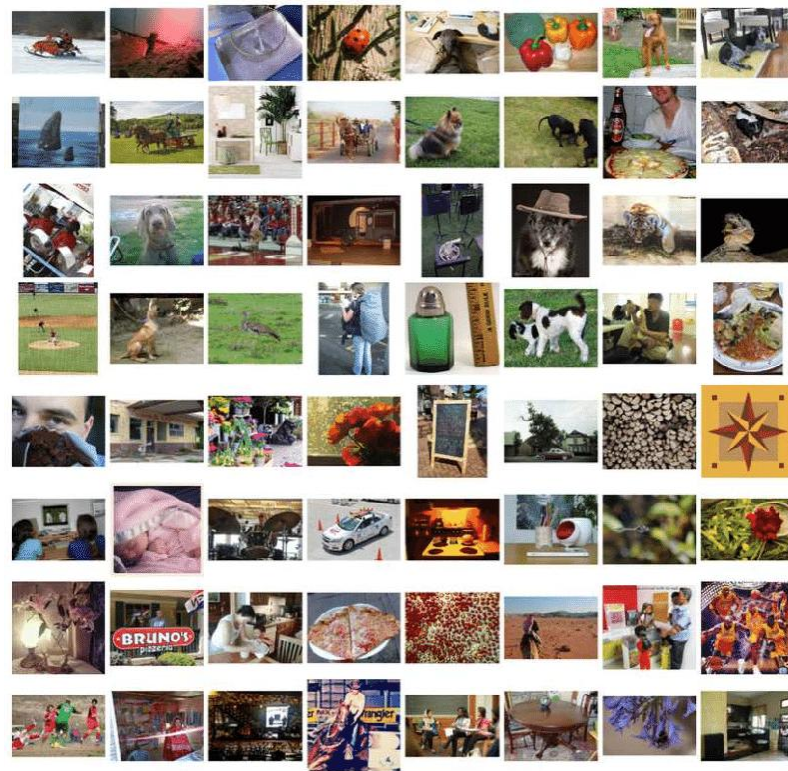
## Example



# Pretrained Models and Transfer Learning

## Imagenet

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

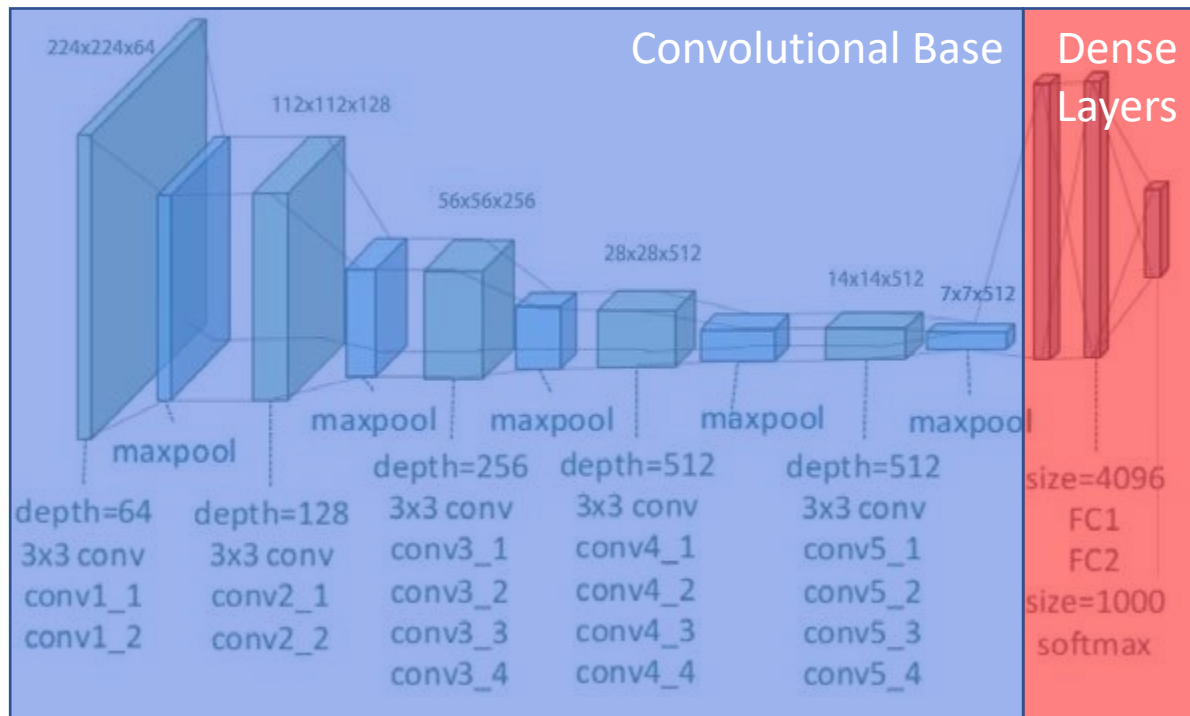


Source: [https://www.researchgate.net/figure/Examples-in-the-ImageNet-dataset\\_fig7\\_314646236](https://www.researchgate.net/figure/Examples-in-the-ImageNet-dataset_fig7_314646236)

# Pretrained Models and Transfer Learning

VGG19

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



## Model Architecture

Source: [https://www.researchgate.net/figure/Illustration-of-the-network-architecture-of-VGG-19-model-conv-means-convolution-FC-means\\_fig2\\_325137356](https://www.researchgate.net/figure/Illustration-of-the-network-architecture-of-VGG-19-model-conv-means-convolution-FC-means_fig2_325137356)