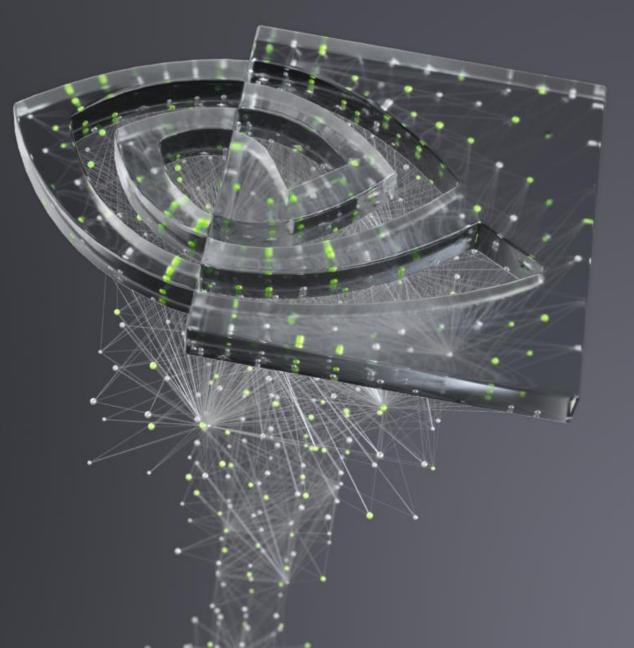


# FUNDAMENTALS OF DEEP LEARNING

Part 5: Pre-trained Models

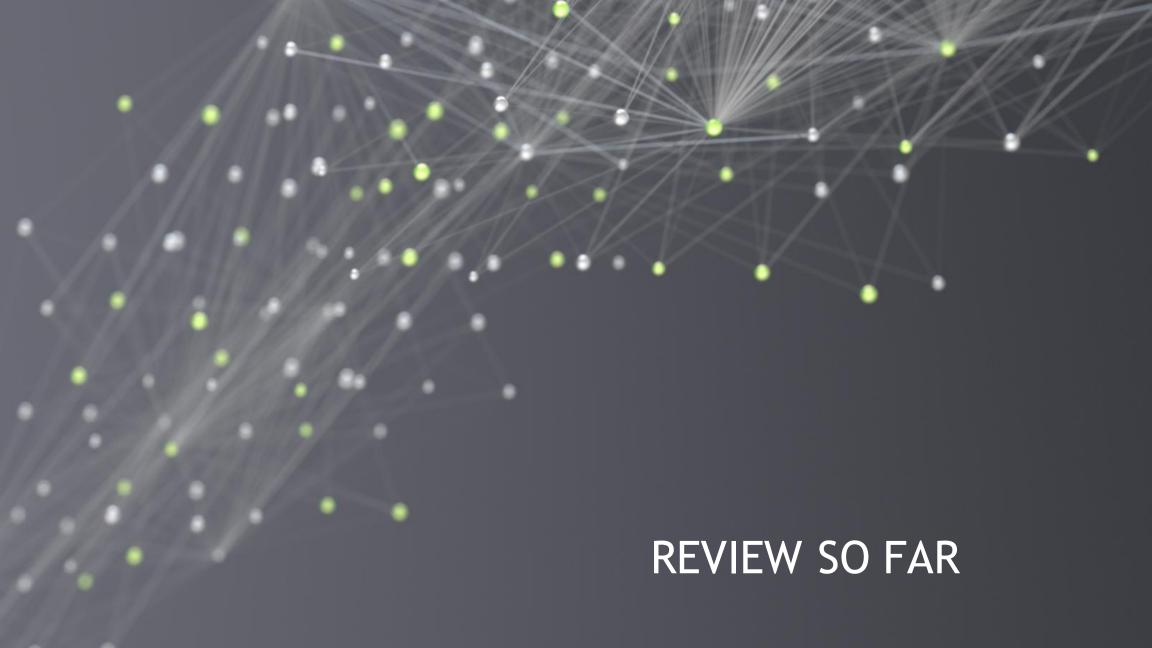


#### AGENDA

Part I: An Introduction to Deep Learning Part 2: How a Neural Network Trains Part 3: Convolutional Neural Networks Part 4: Data Augmentation and Deployment Part 5: Pre-trained Models Part 6: Advanced Architectures

#### AGENDA – PART 5

- Review so far
- Pre-trained Models
- Transfer Learning



#### **REVIEW SO FAR**



- Learning Rate
- Number of Layers
- Neurons per Layer
- Activation Functions
- Dropout
- Data



#### PRE-TRAINED MODELS

# TensorFlow Hub





PYTORCH HUB

#### PRE-TRAINED MODELS

# VERY DEEP CONVOLUTIONAL NETWORKS FOR LARGE-SCALE IMAGE RECOGNITION

#### Karen Simonyan\* & Andrew Zisserman<sup>+</sup>

Visual Geometry Group, Department of Engineering Science, University of Oxford {karen, az}@robots.ox.ac.uk



#### THE NEXT CHALLENGE

# An Automated Doggy Door











#### THE CHALLENGE AFTER

# An Automated Presidential Doggy Door

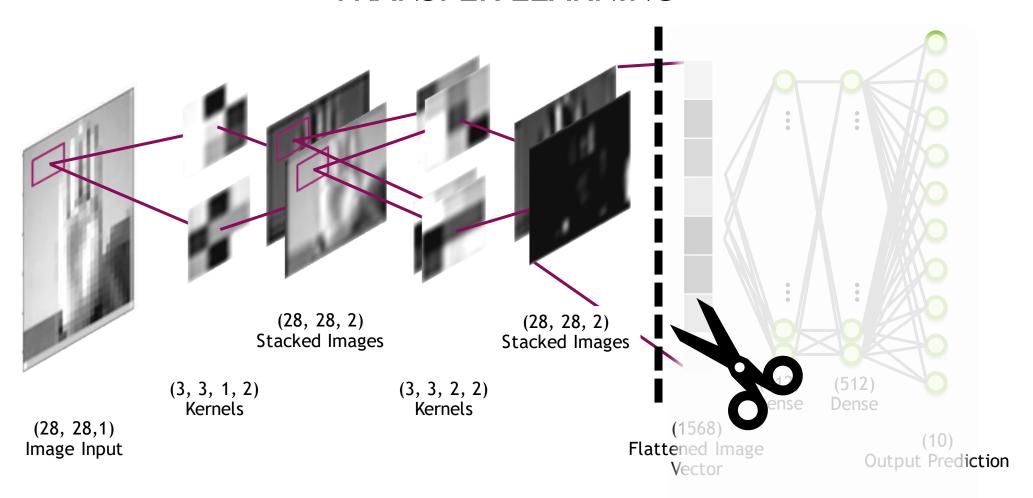


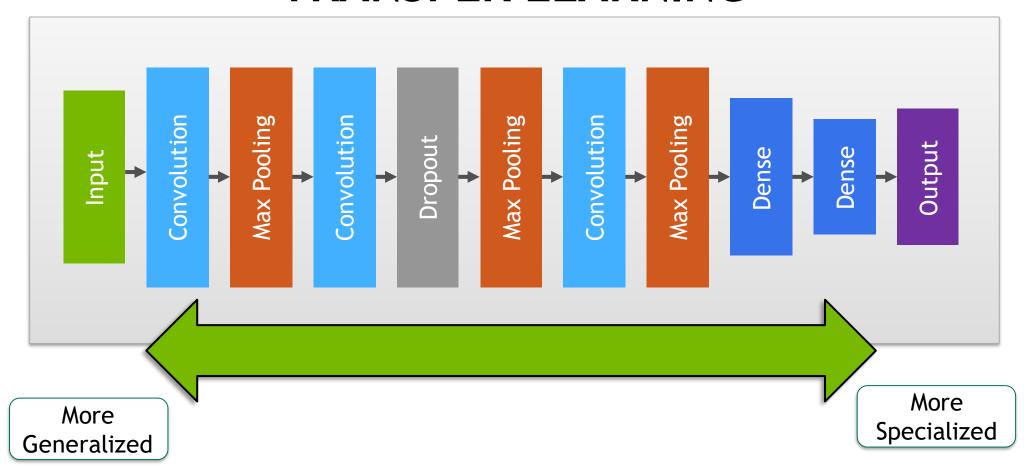












Freezing the Model?











