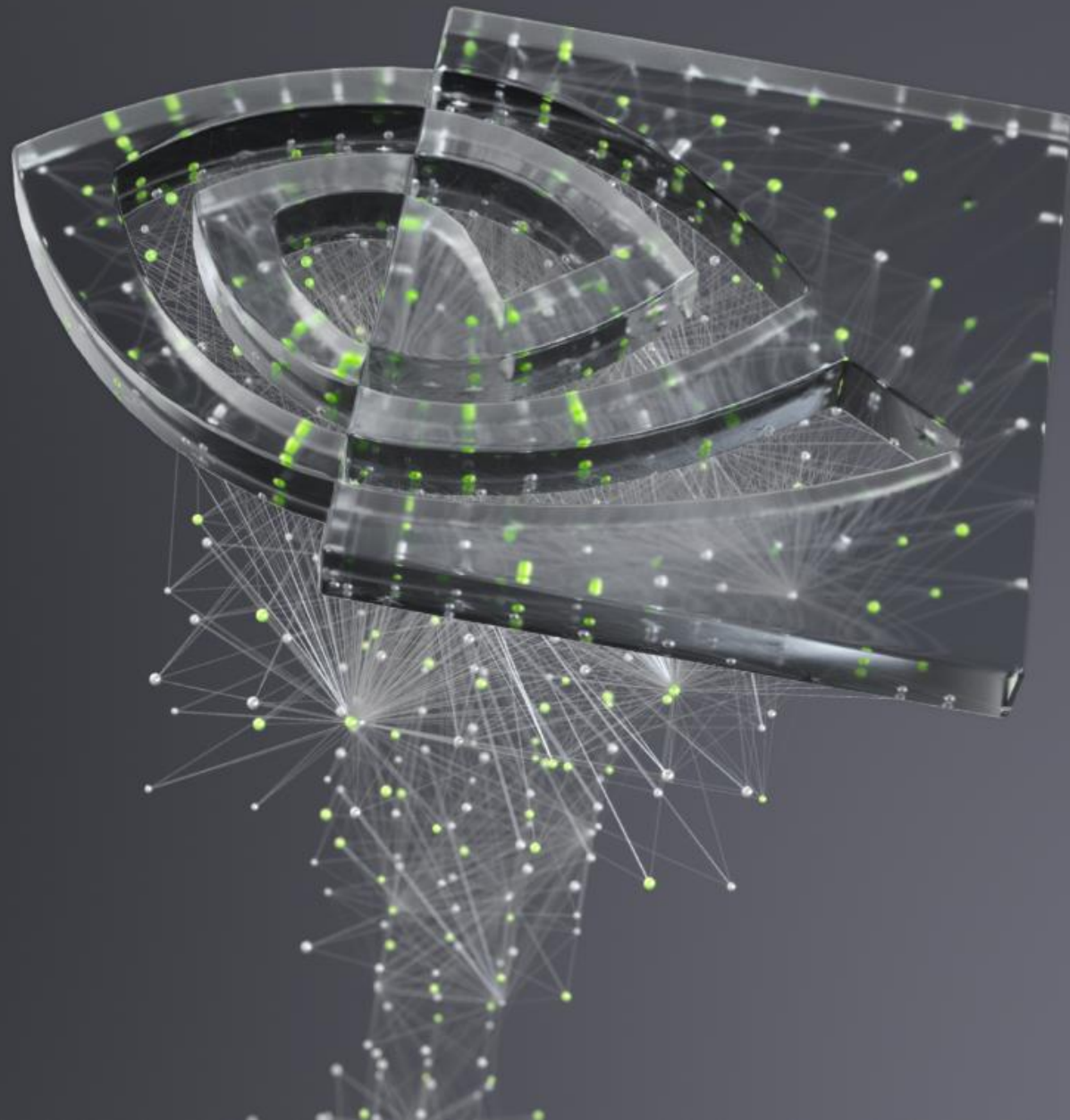




DEEP  
LEARNING  
INSTITUTE

# FUNDAMENTALS OF DEEP LEARNING

Part 5: Pre-trained Models



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# AGENDA

Part 1: 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

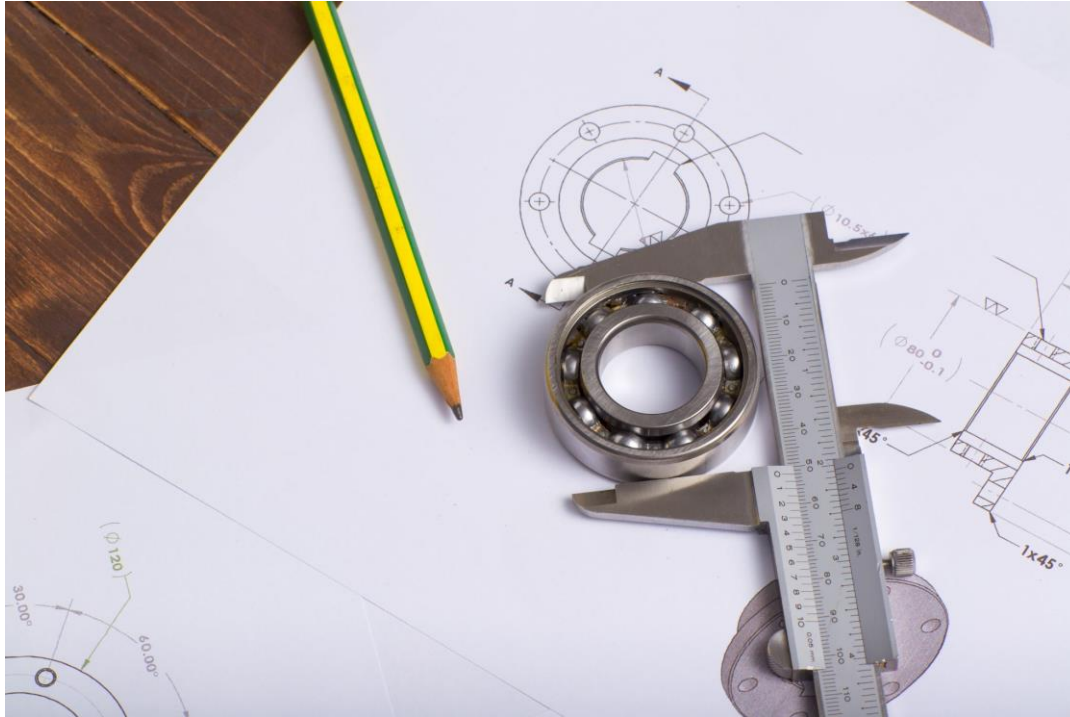
# AGENDA – PART 5

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



REVIEW SO FAR

# REVIEW SO FAR



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





PRE-TRAINED MODELS

# PRE-TRAINED MODELS

TensorFlow Hub

 Keras



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





# TRANSFER LEARNING

# THE CHALLENGE AFTER

## An Automated Doggy Door

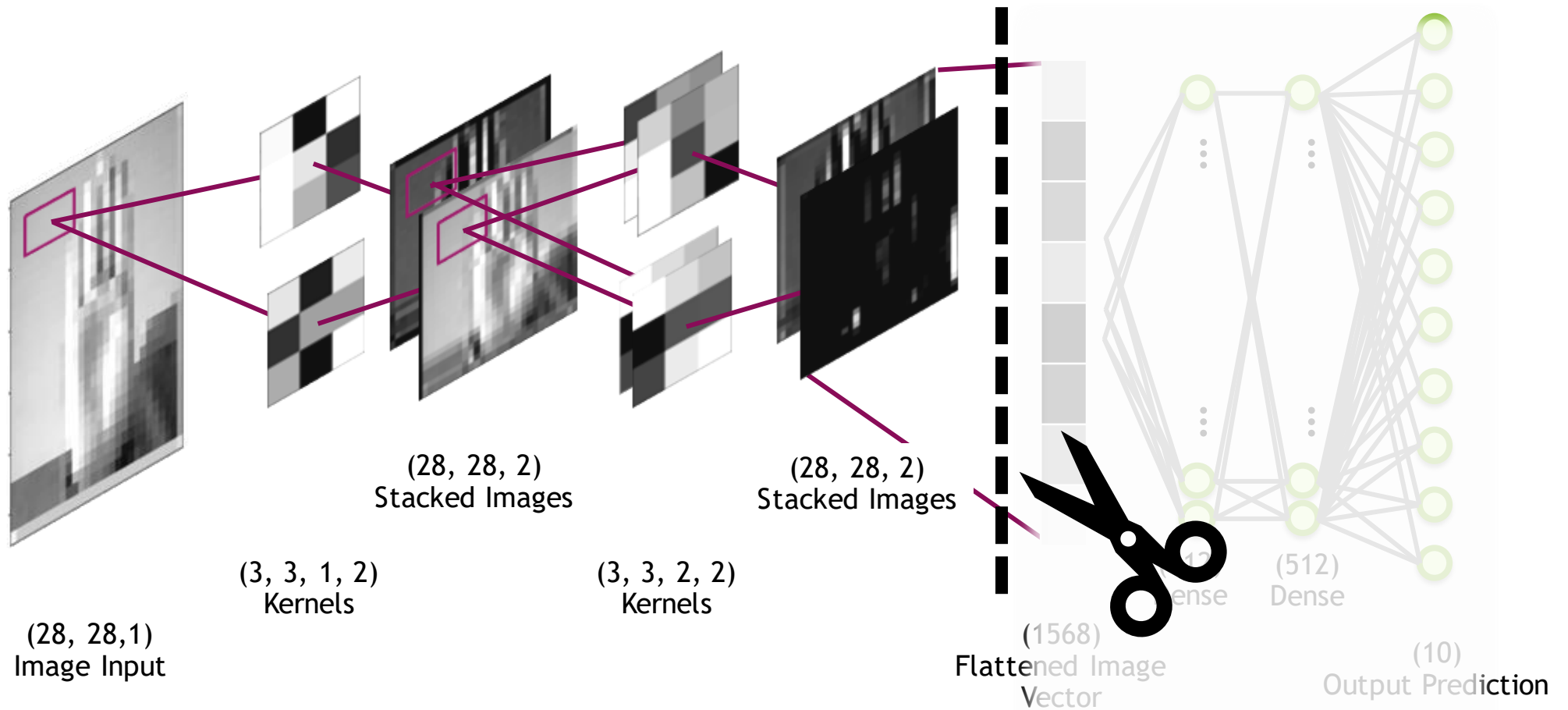




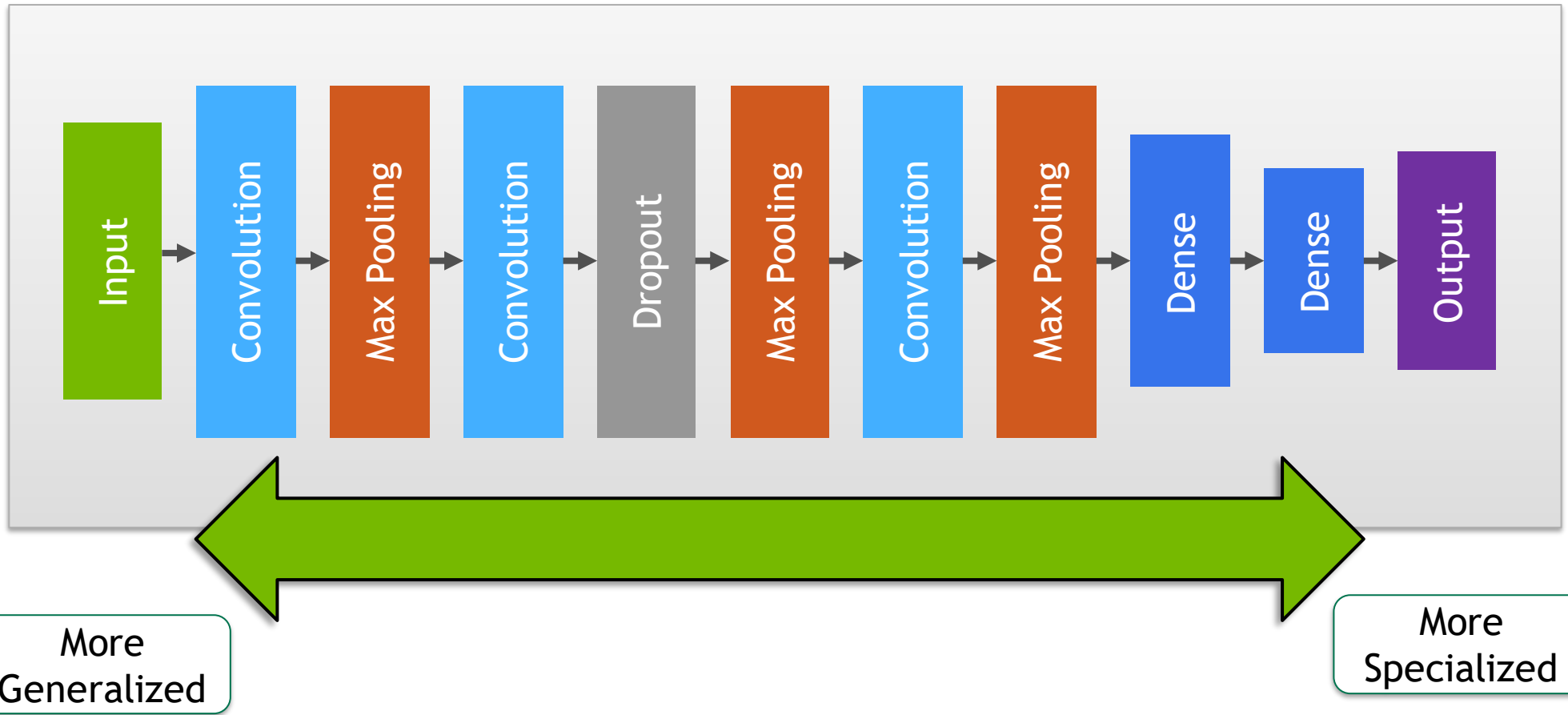
# TRANSFER LEARNING



# TRANSFER LEARNING



# TRANSFER LEARNING



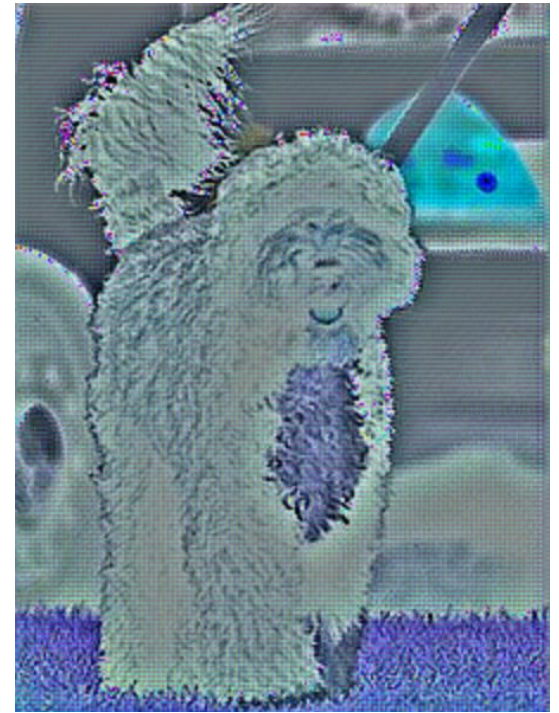
# TRANSFER LEARNING

Freezing the Model?





# TRANSFER LEARNING





LET'S GET STARTED!



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