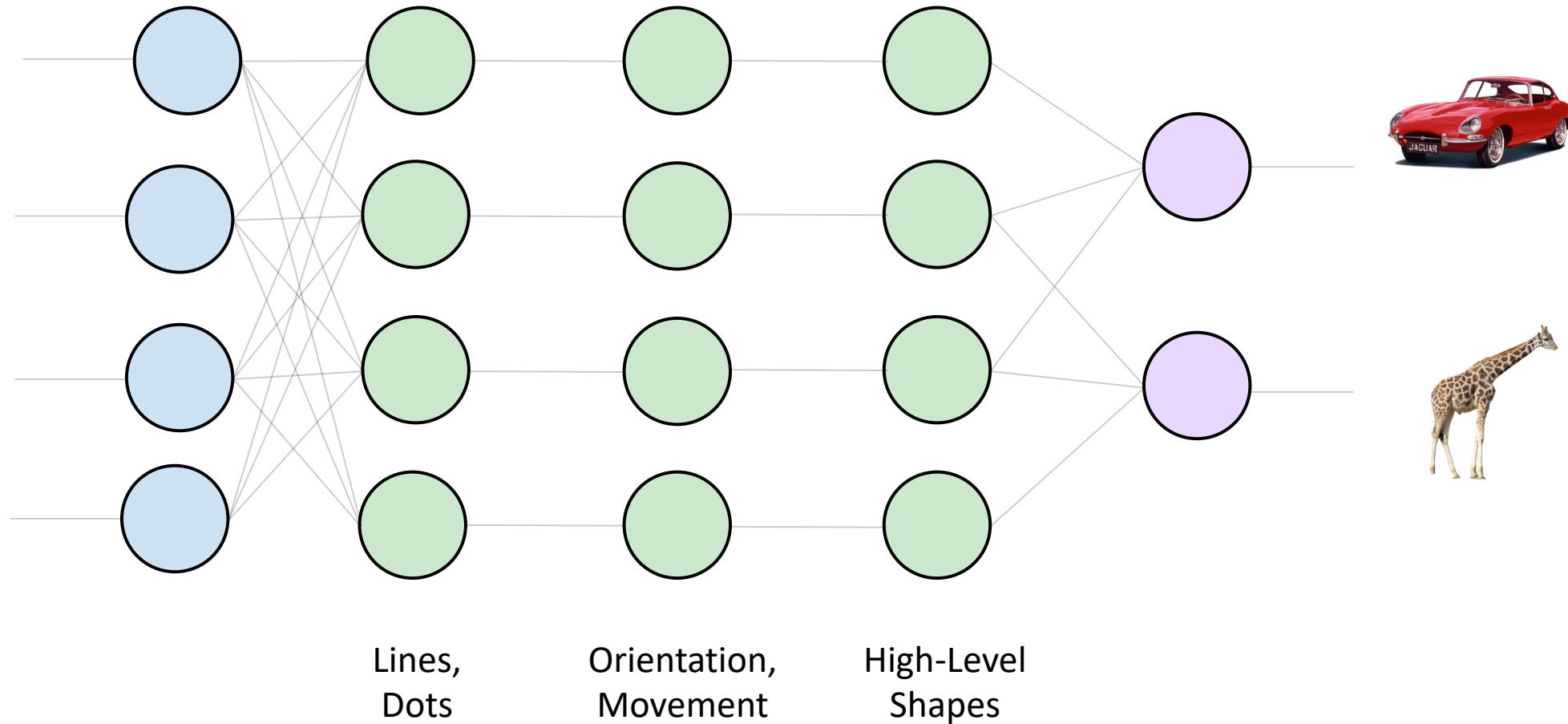


# Transfer Learning with Spark and BigDL

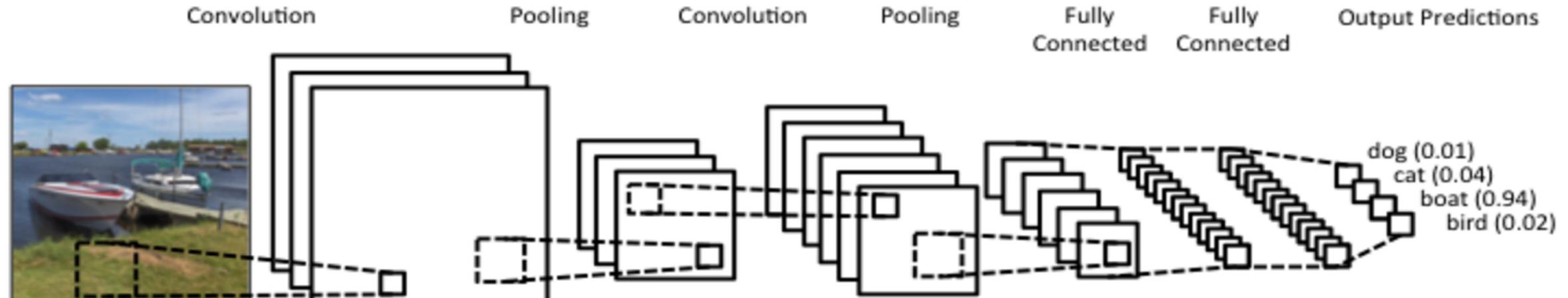
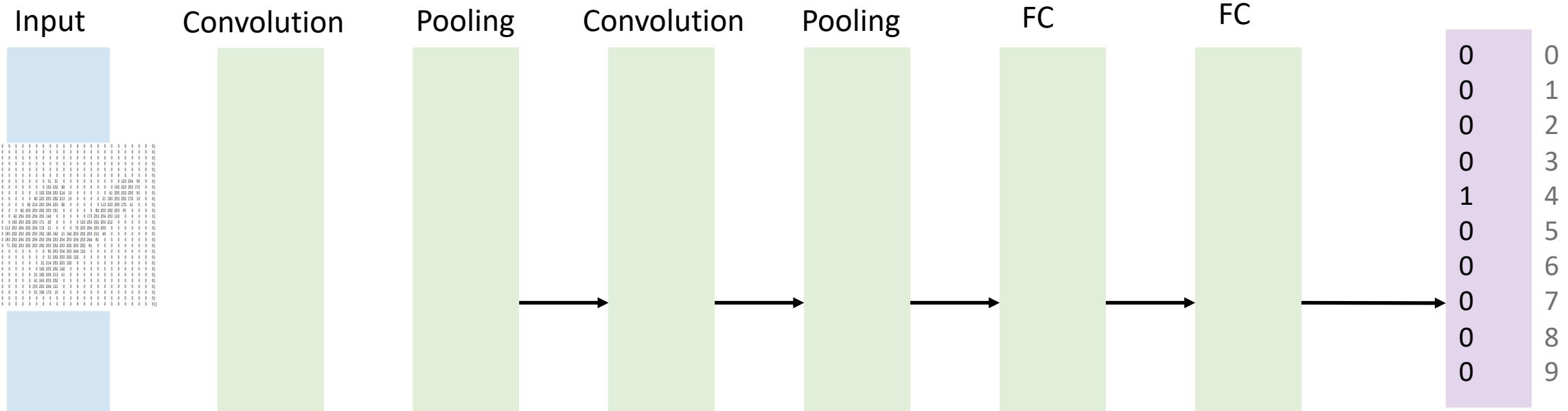
Alex Kalinin | VP, AI/Machine Learning | Sizmek

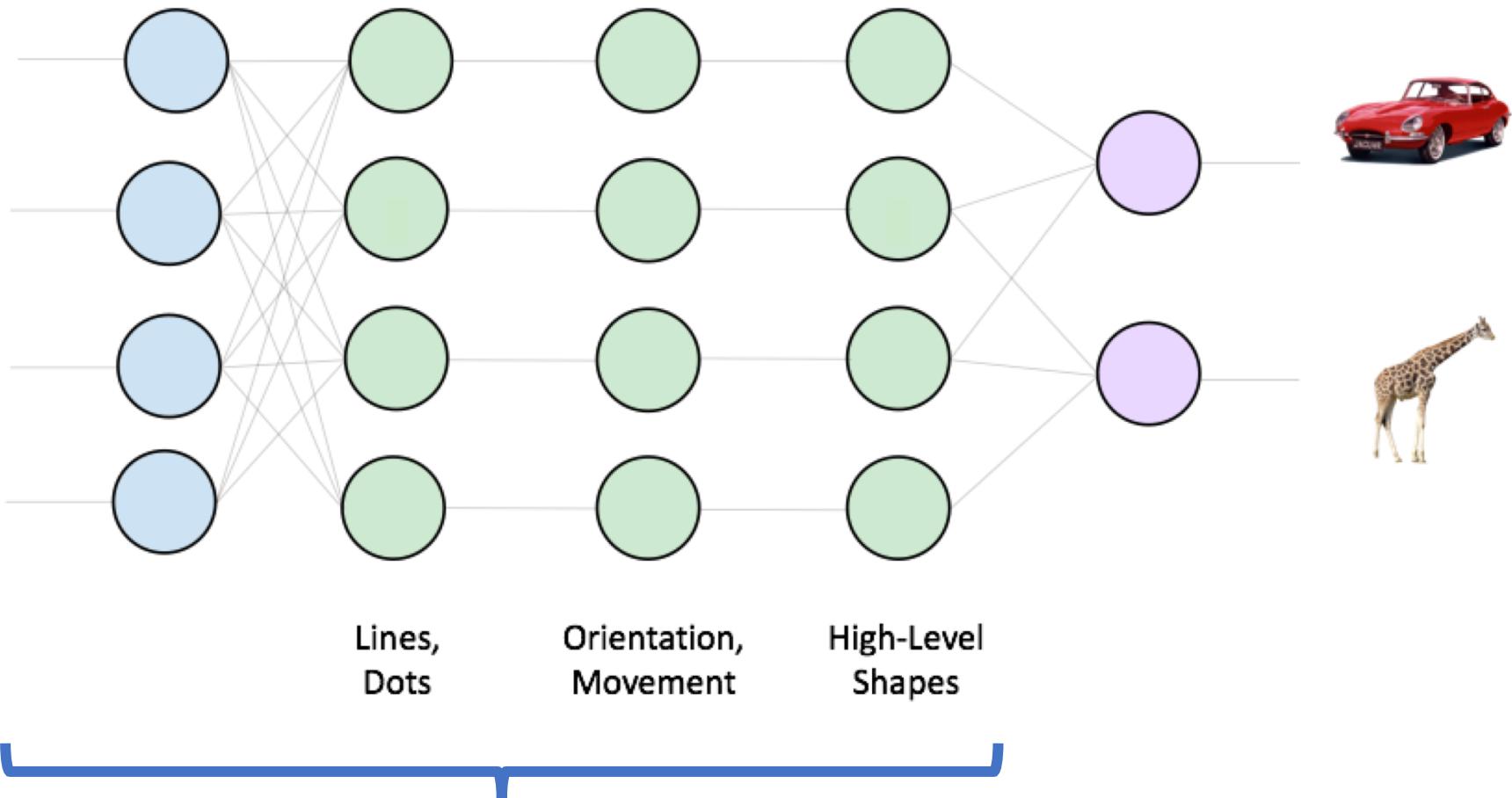
<https://www.linkedin.com/in/alexkalinin/>  
<http://alexkalinin.com>

# Hierarchical Visual Cortex

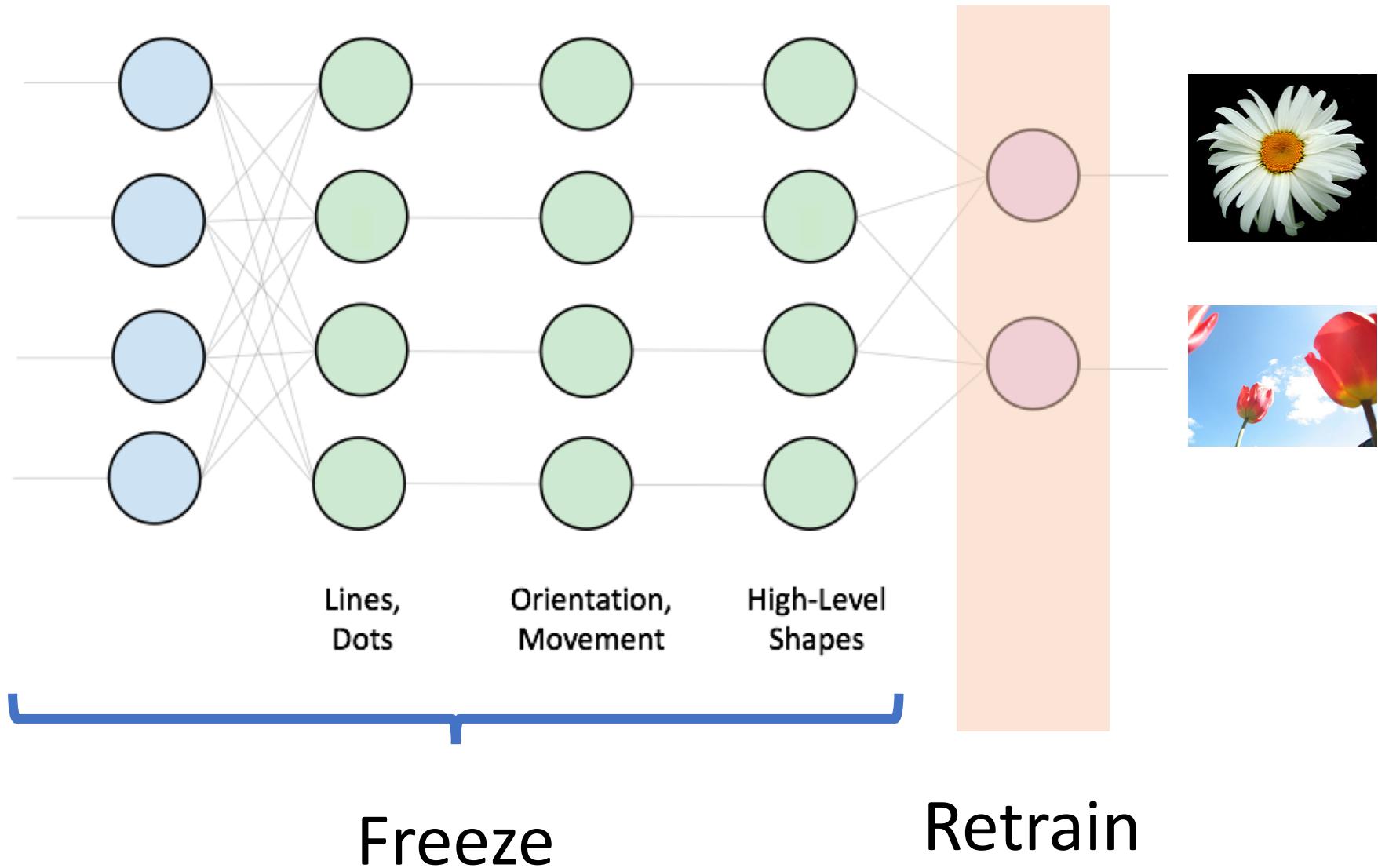


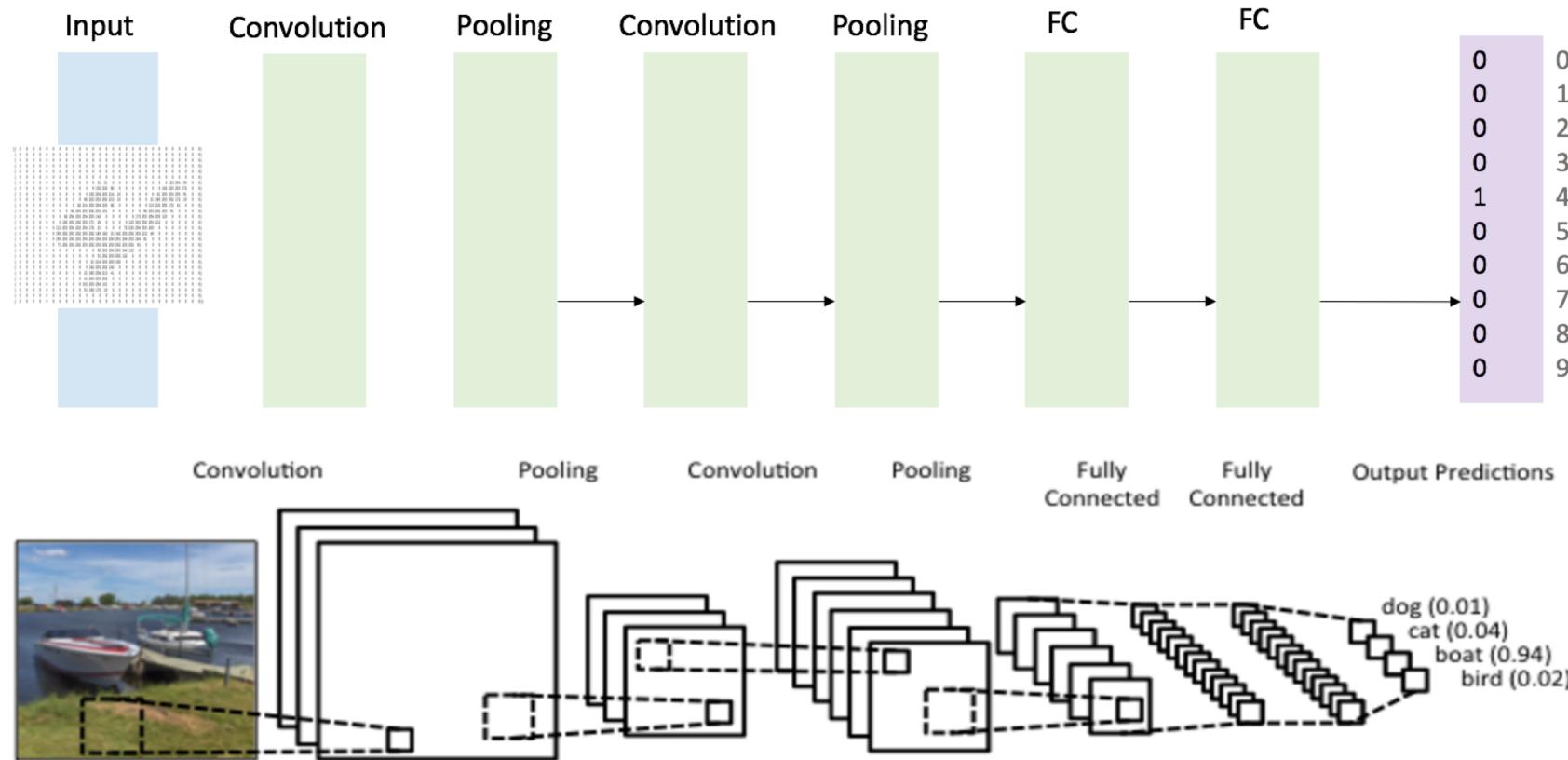
# Convolutional Network

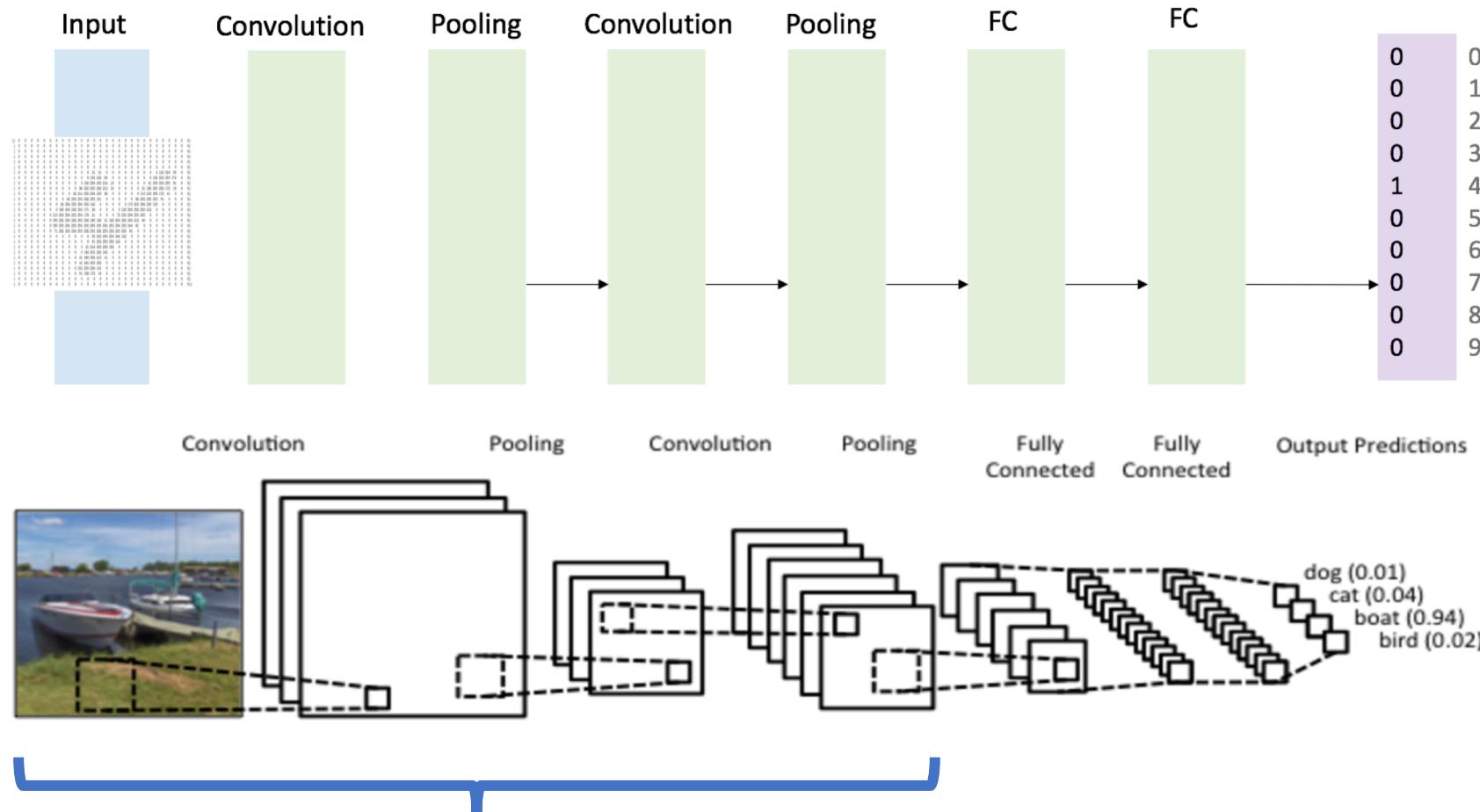




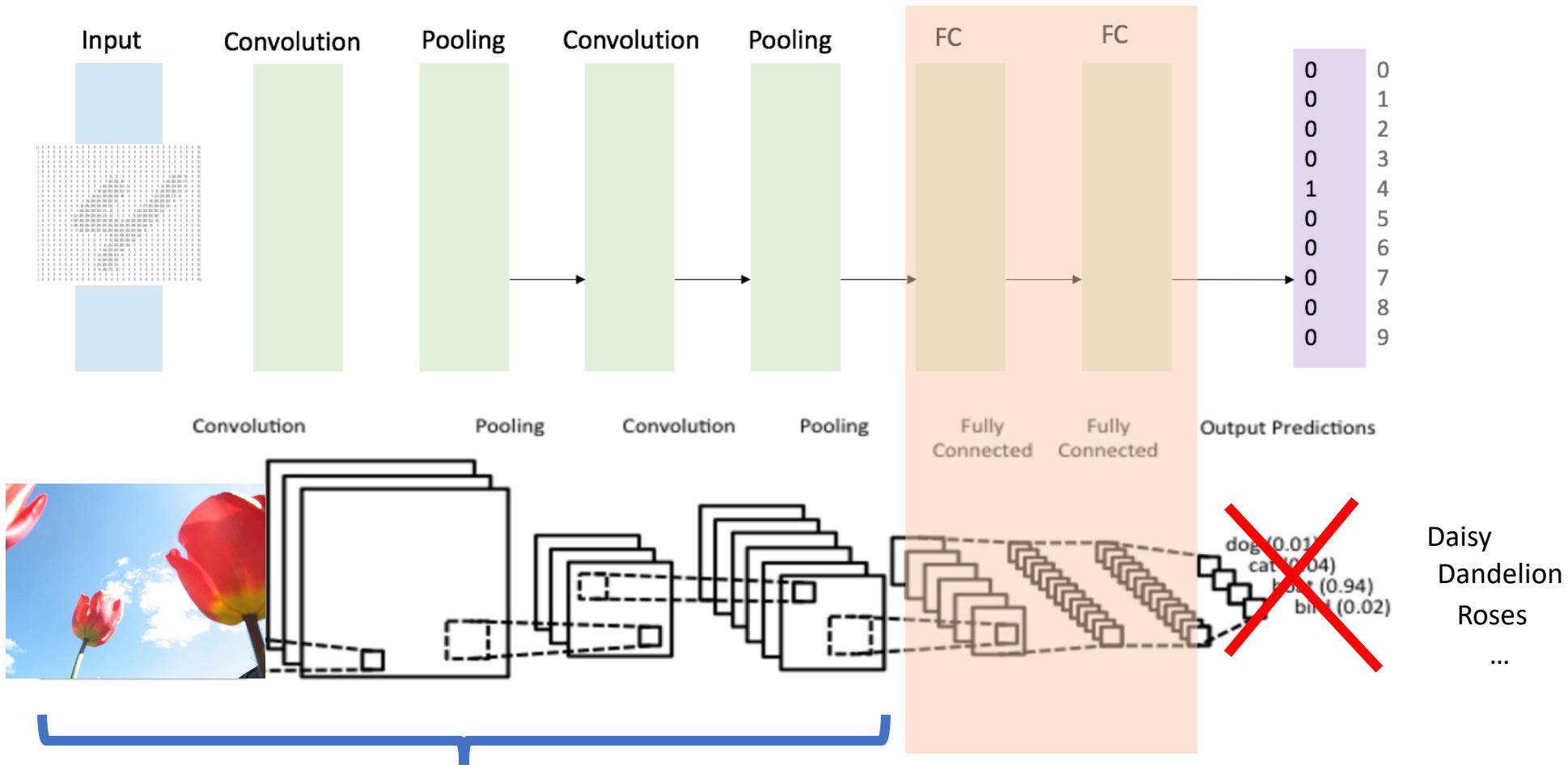
# Freeze





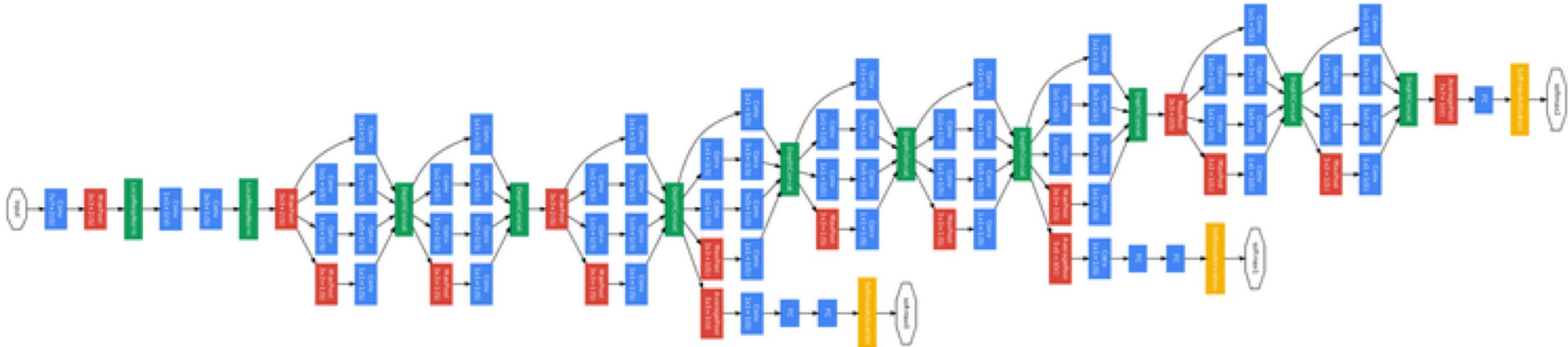


# Freeze



# Freeze

# Inception Model Architecture





Vertical filter



Horizontal filter

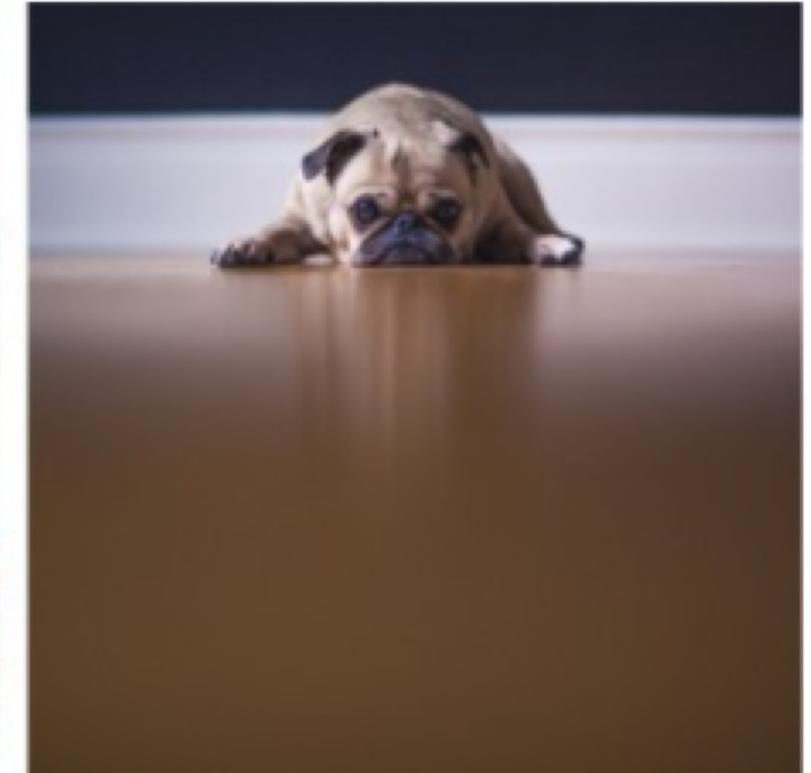
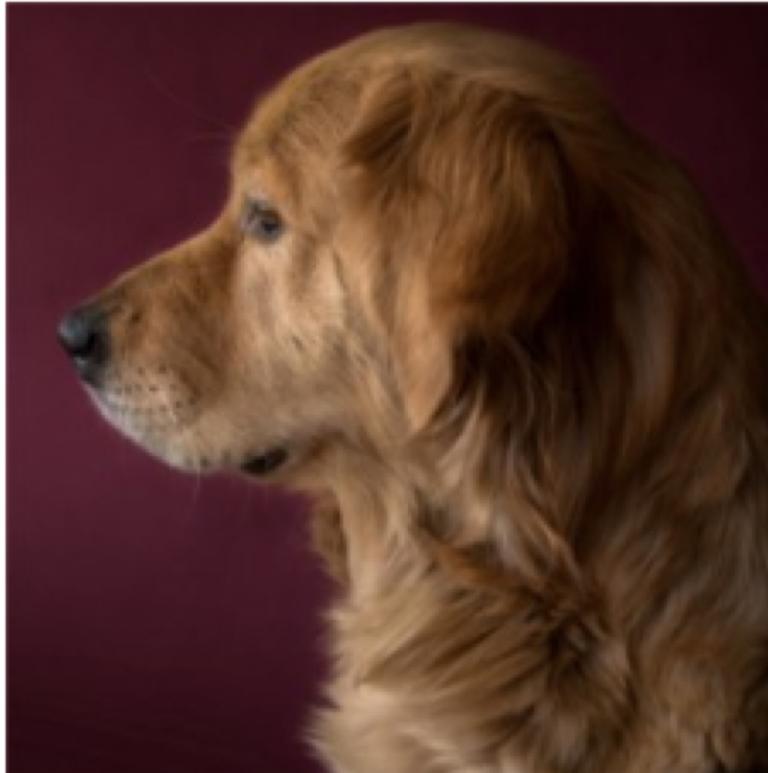


0	0	1	0	0
0	0	1	0	0
0	0	1	0	0
0	0	1	0	0
0	0	1	0	0

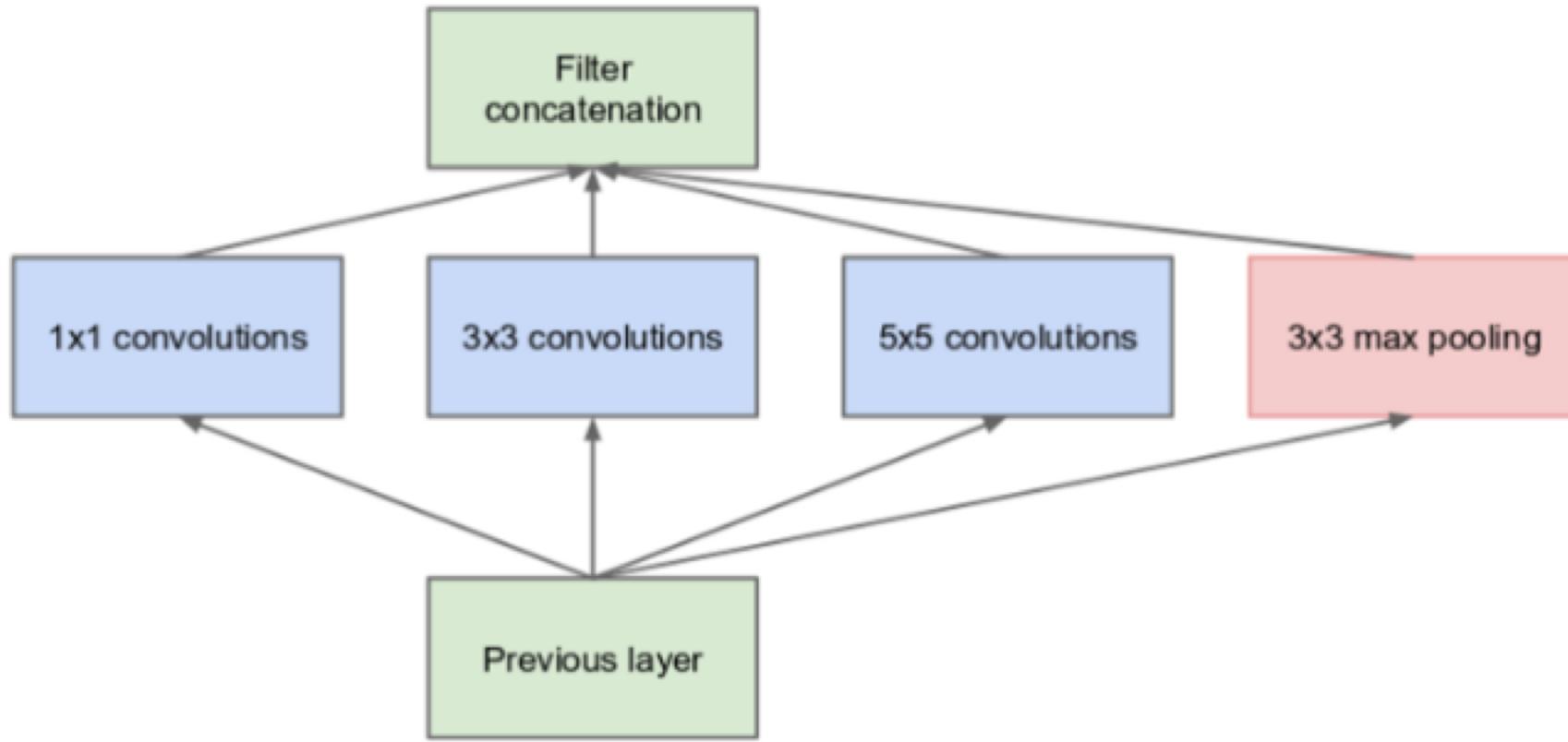


0	0	0	0	0
0	0	0	0	0
1	1	1	1	1
0	0	0	0	0
0	0	0	0	0

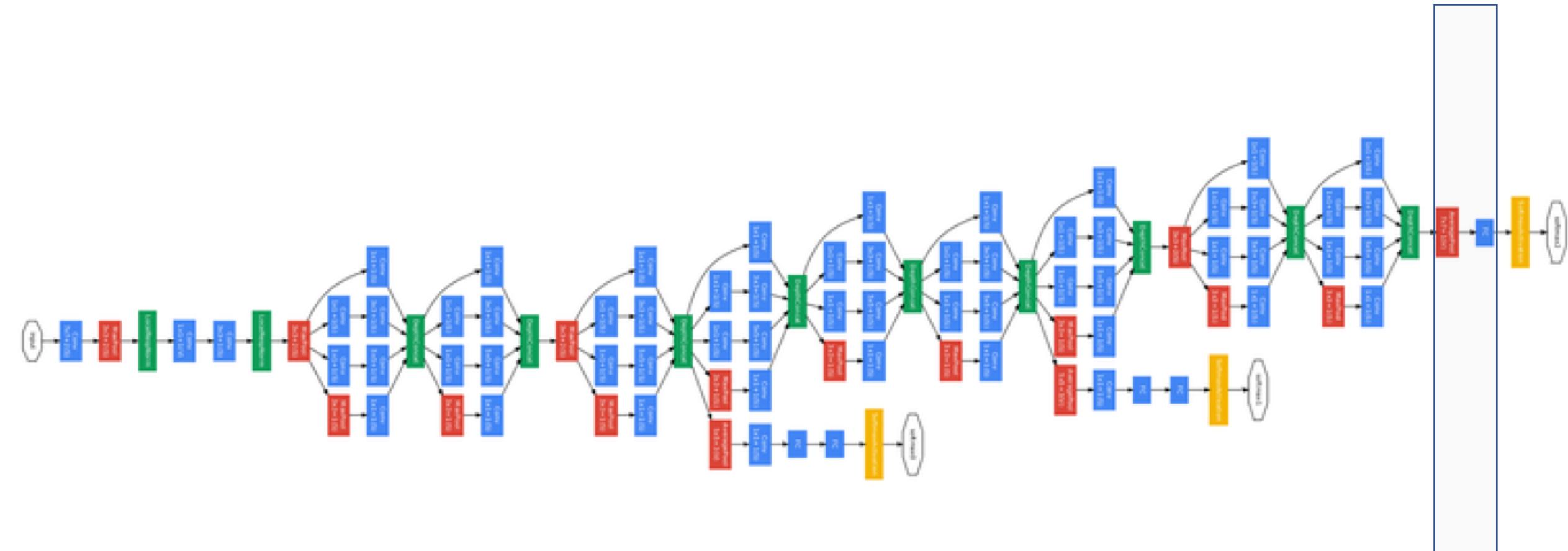
# Variation in Size



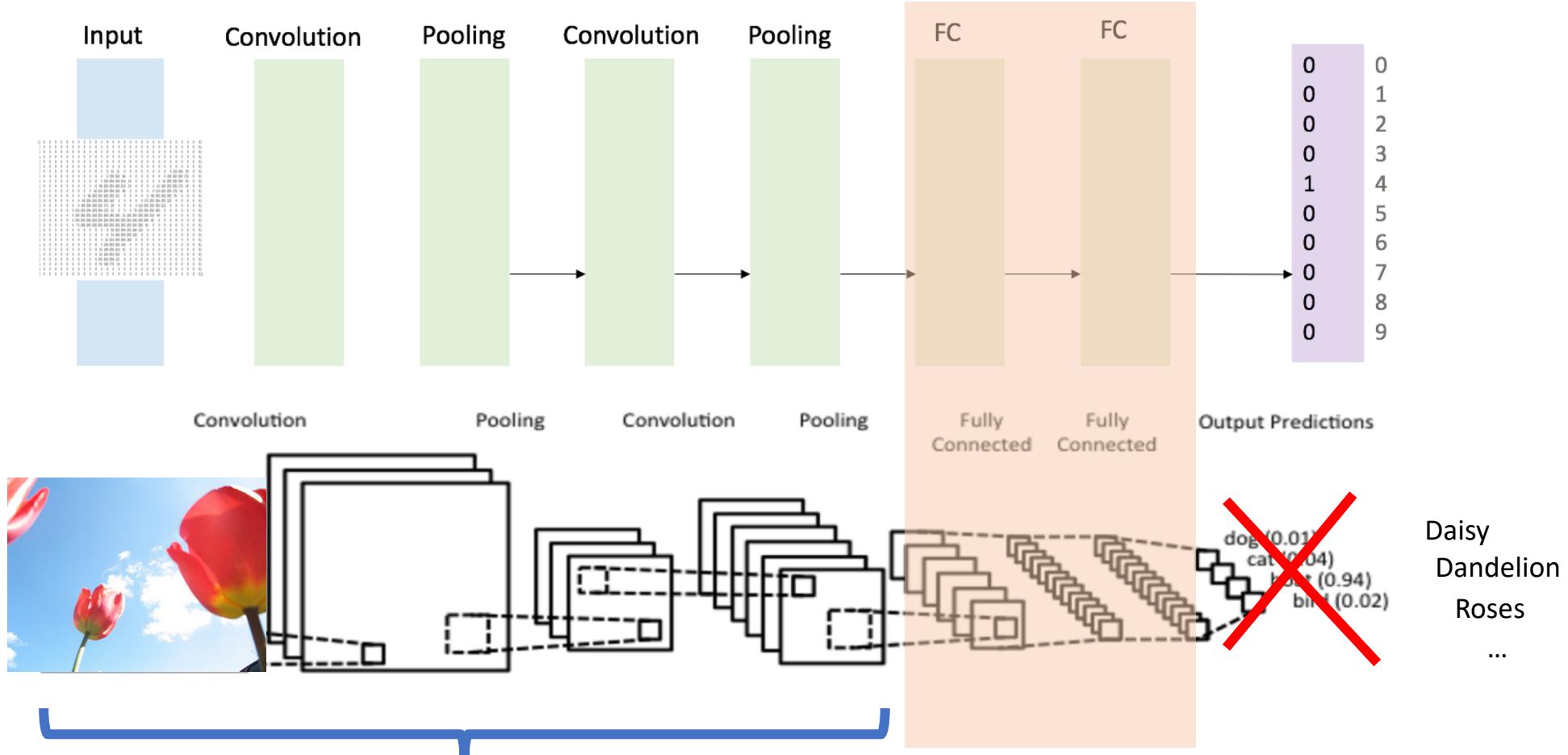
# Inception Module



# Inception V1

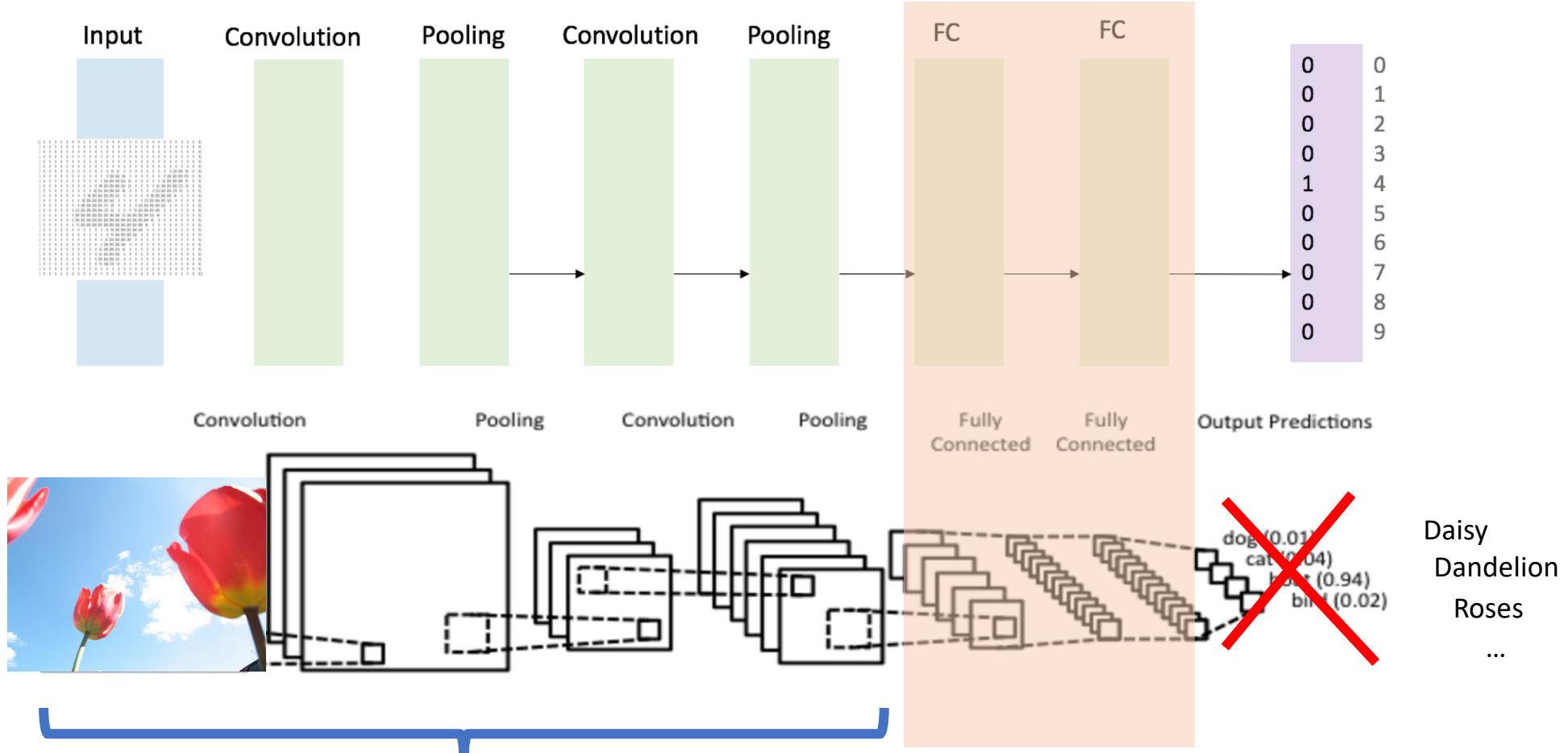


# Optimization



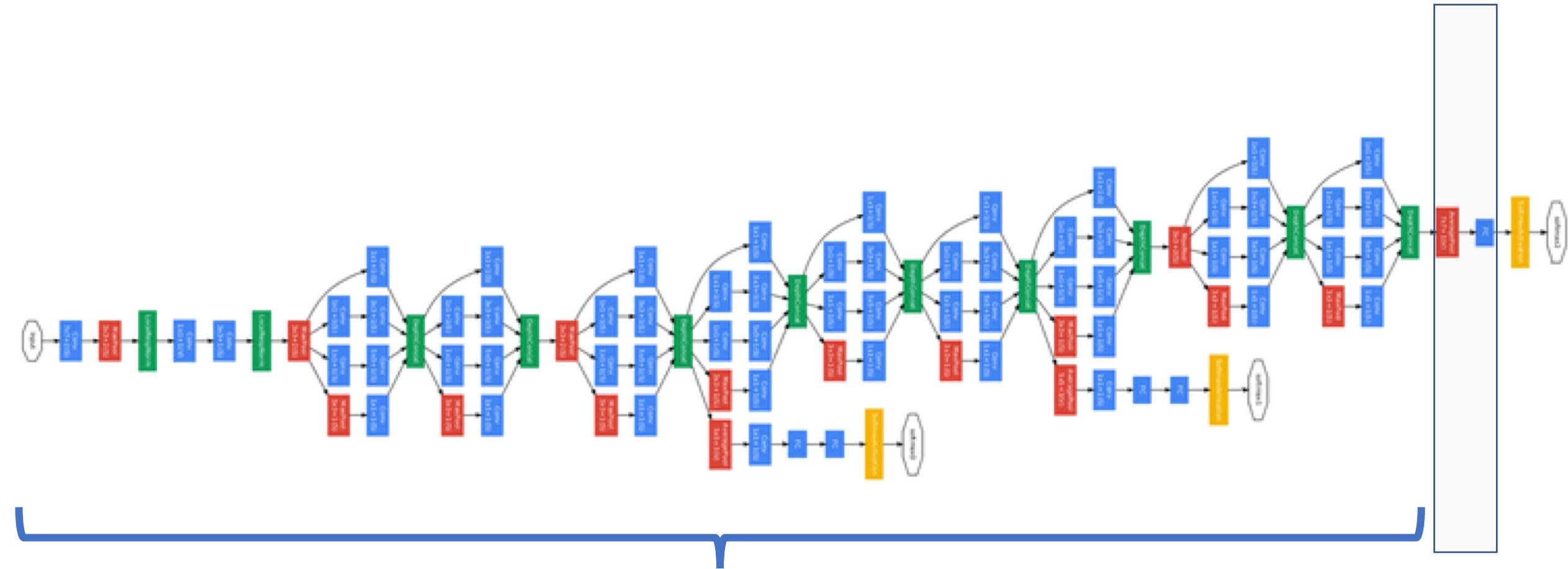
Freeze

# Optimization



Compute Once

# Inception V1



Compute Once

Train

# Workshop