Image Classification using TensorFlow/Keras

February 3, 2017

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goals

Build a simple convolutional neural network

Augment data

Use a pretrained convolutional neural network

Use transfer learning (fine tuning a pretrained network)

what is the big deal?

telling cats & dogs apart

In 2013 - 82.7%

CNN - 99%

methodology

Theano

Caffe

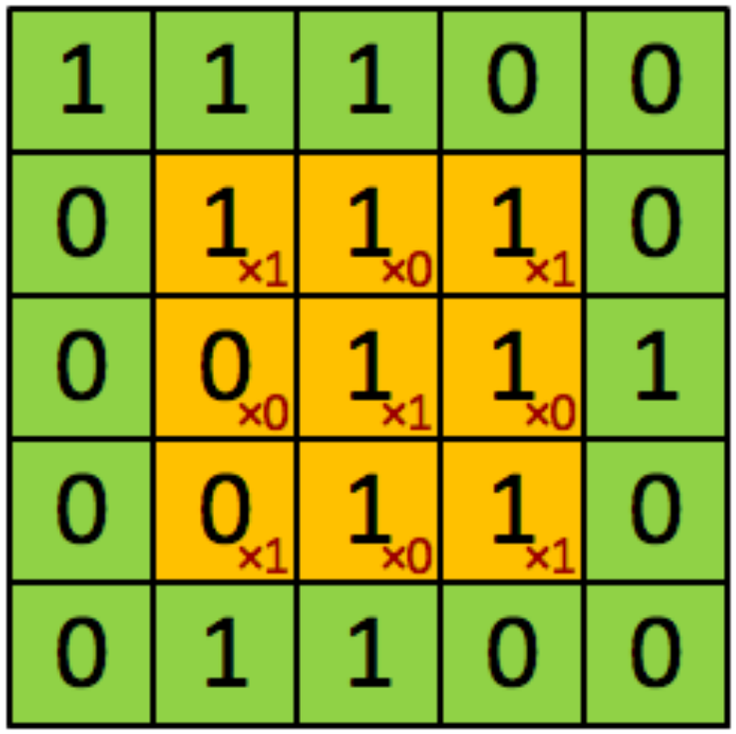
Torch

Tensorflow

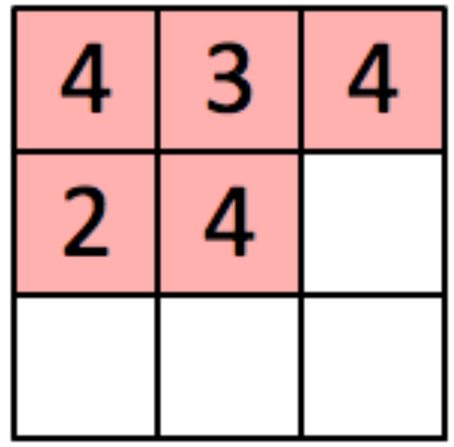
MXNet

CNTK

build a simple convolutional neural network



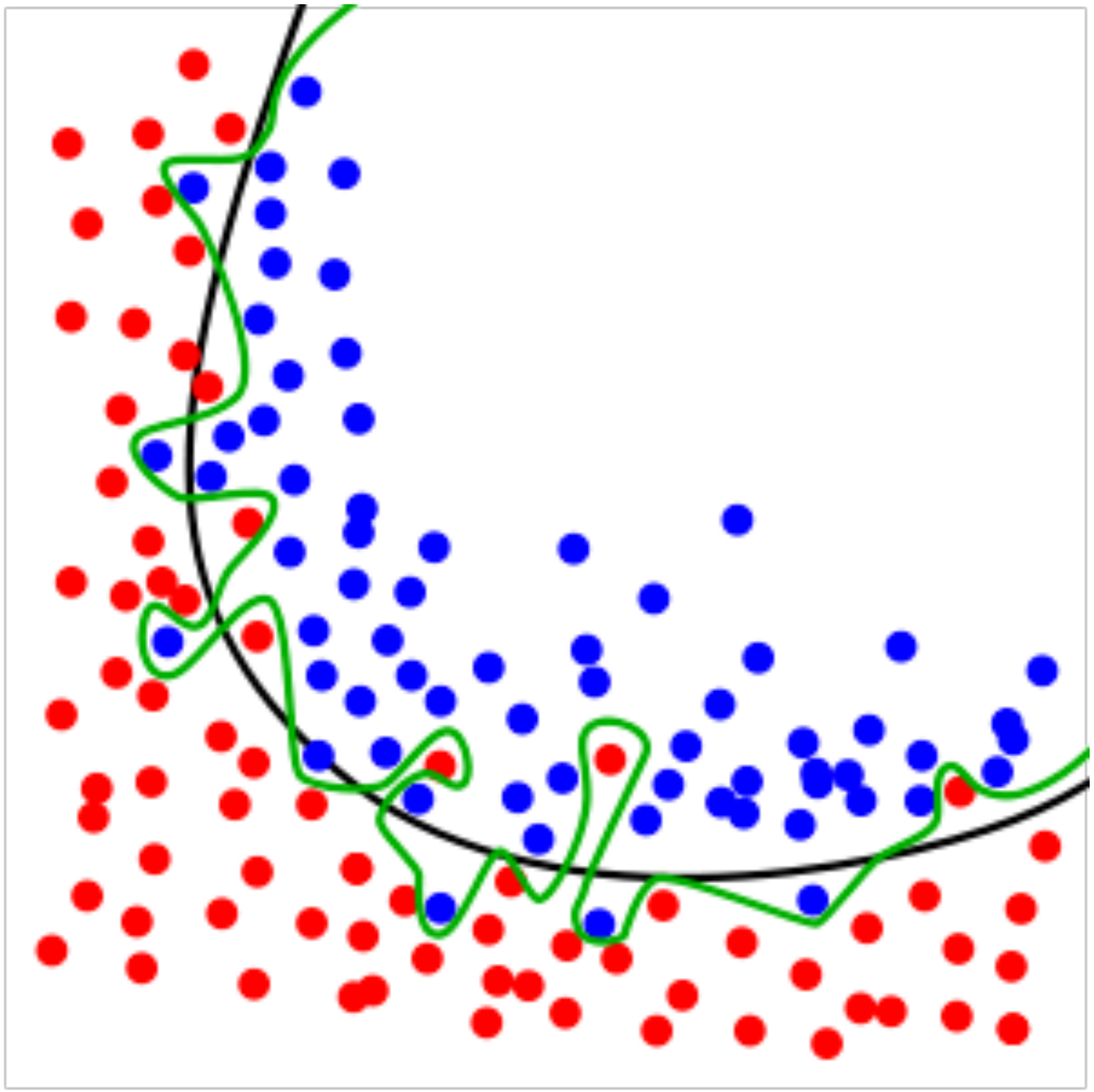
Image



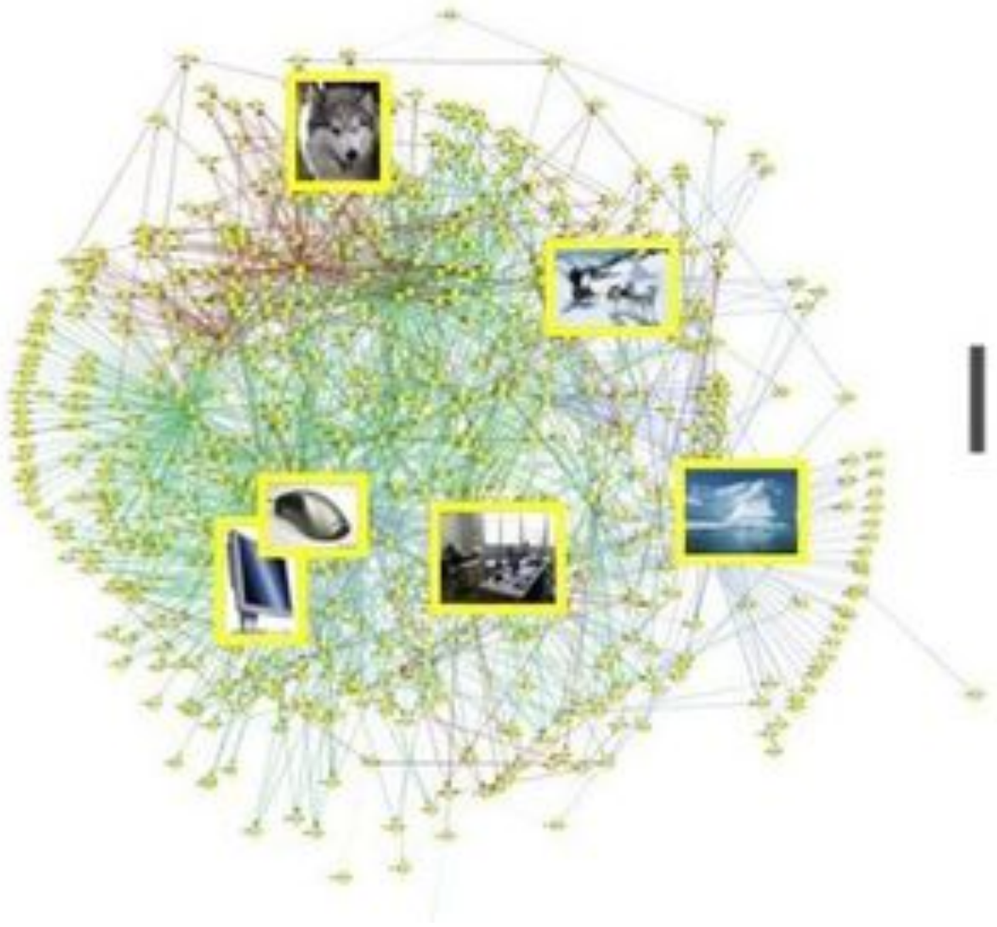
Convolved Feature

augmenting data

overfitting



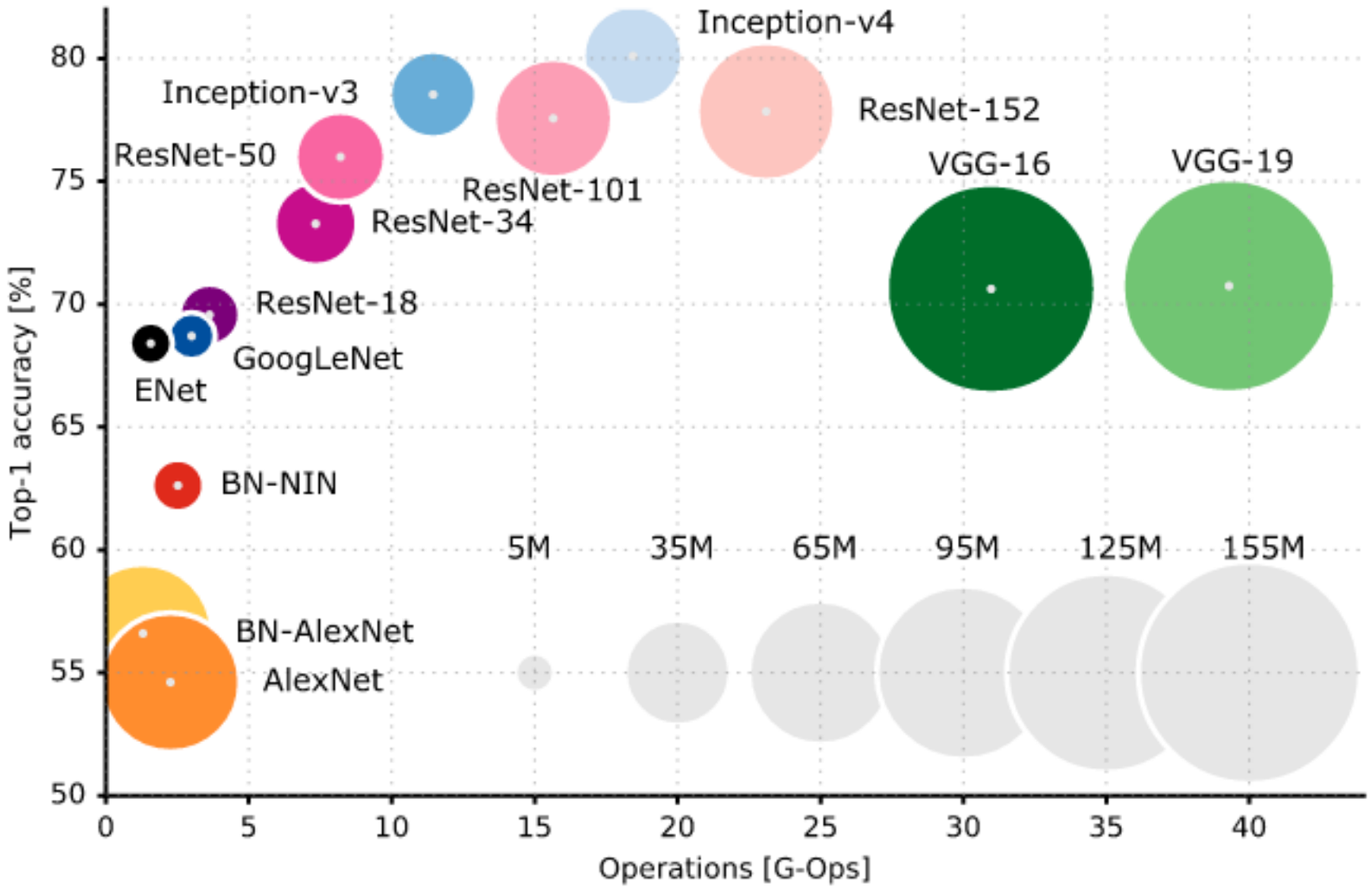
using a pre-trained network



IMAGENET

138 GB, 14 million images

pre-trained networks



fine tuning a pre-trained network

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