Deep learning meets the old times

December 14, 2017

Heritage Repository

Images from Heritage repository

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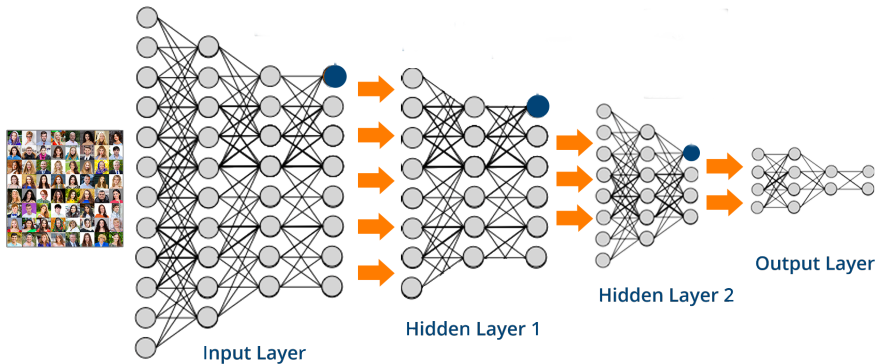

Being

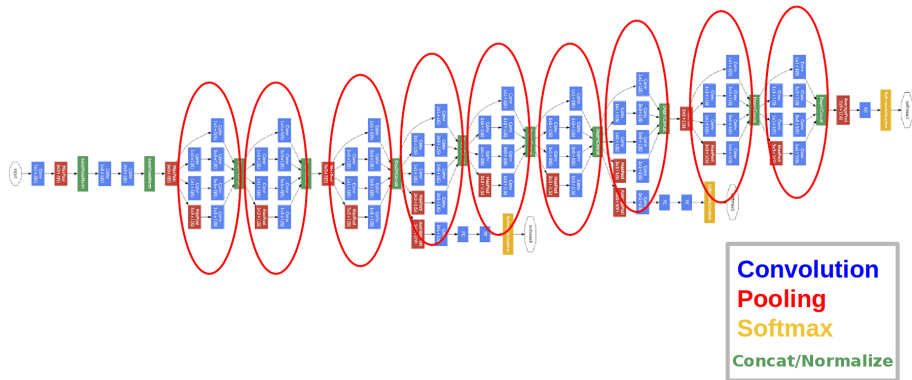Scenery

Being

Heritage

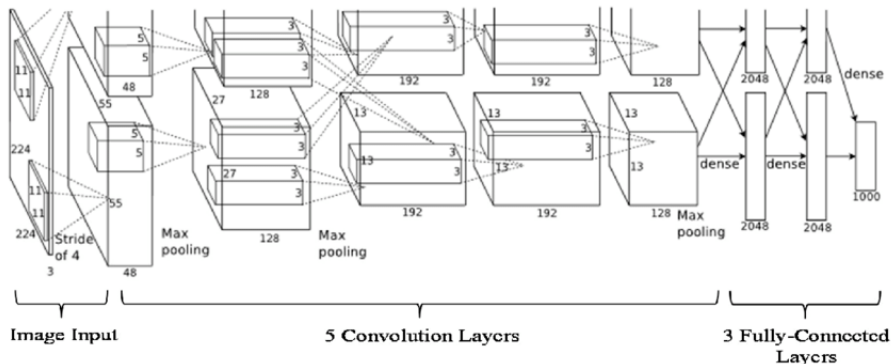Other

Heritage

Convolution Neural Networks

Input Layer

Hidden Layer 1

Hidden Layer 2

Output Layer

CNN Model Architecture

- Googlenet Model Architecture
  - Winner of ILSVRC 2014
  - Total 163 layers

Convolution
Pooling
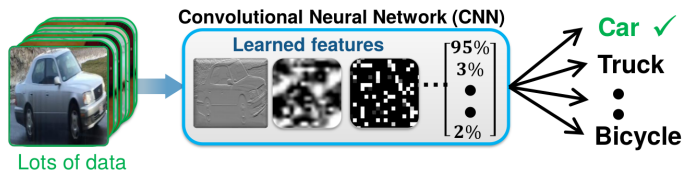**Softmax**
Concat/Normalize

CNN Model Architecture

- Alexnet Model Architecture
  - Winner of ILSVRC 2012
  - Total 26 layers

Transfer Learning

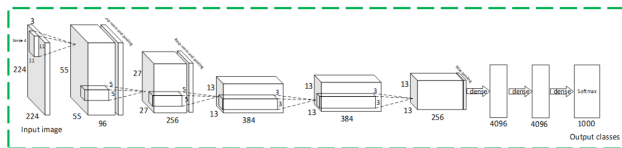**1. Train a Deep Neural Network from Scratch**

Convolutional Neural Network (CNN)

2. Fine-tune a pre-trained model (transfer learning)
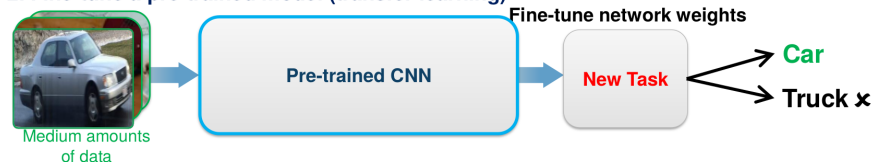
Deciding when to fine tune

Size of New Dataset	Similarity to Original Dataset	What to do?
Large	High	Fine tune.
Small	High	Don't Fine Tune, it will overfit. Train linear classifier on CNN Features
Small	Low	Train a classifier from activations in lower layers. Higher layers are dataset specific to older dataset.
Large	Low	Train CNN from scratch

http://blog.revolutionanalytics.com/2016/08/deep-learning-part-2.html

Result
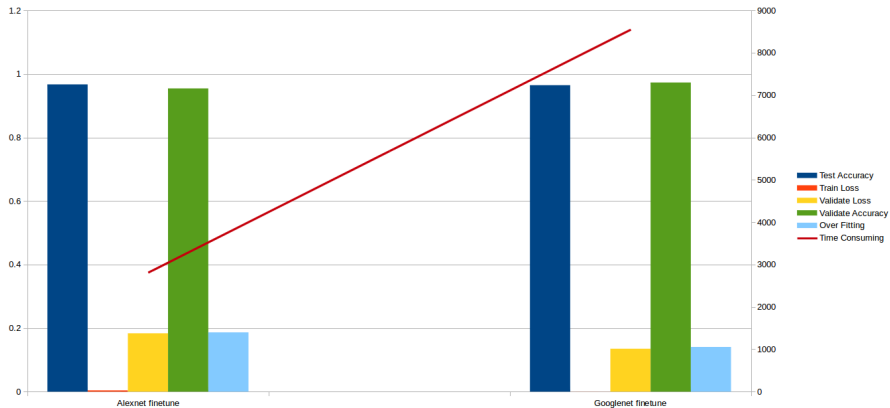
Being

Being

Heritage

Heritage

Scenery

Thank you for your attention!