Practical 3.2

Convolutional Neural Networks – Architectures

Overview

- LeNet5 (MNIST)
- ImageNet
- AlexNet
- GoogLeNet (inception architecture)
- ResNet (by-pass connection)

LeNet5 (I)

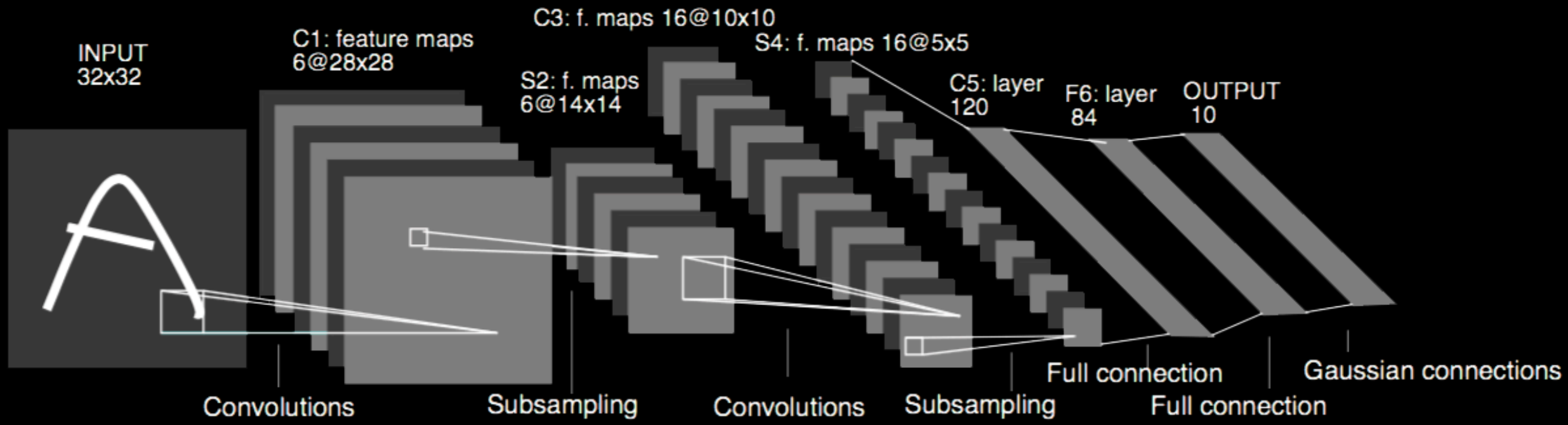
PROC. OF THE IEEE, NOVEMBER 1998

Gradient-Based Learning Applied to Document Recognition

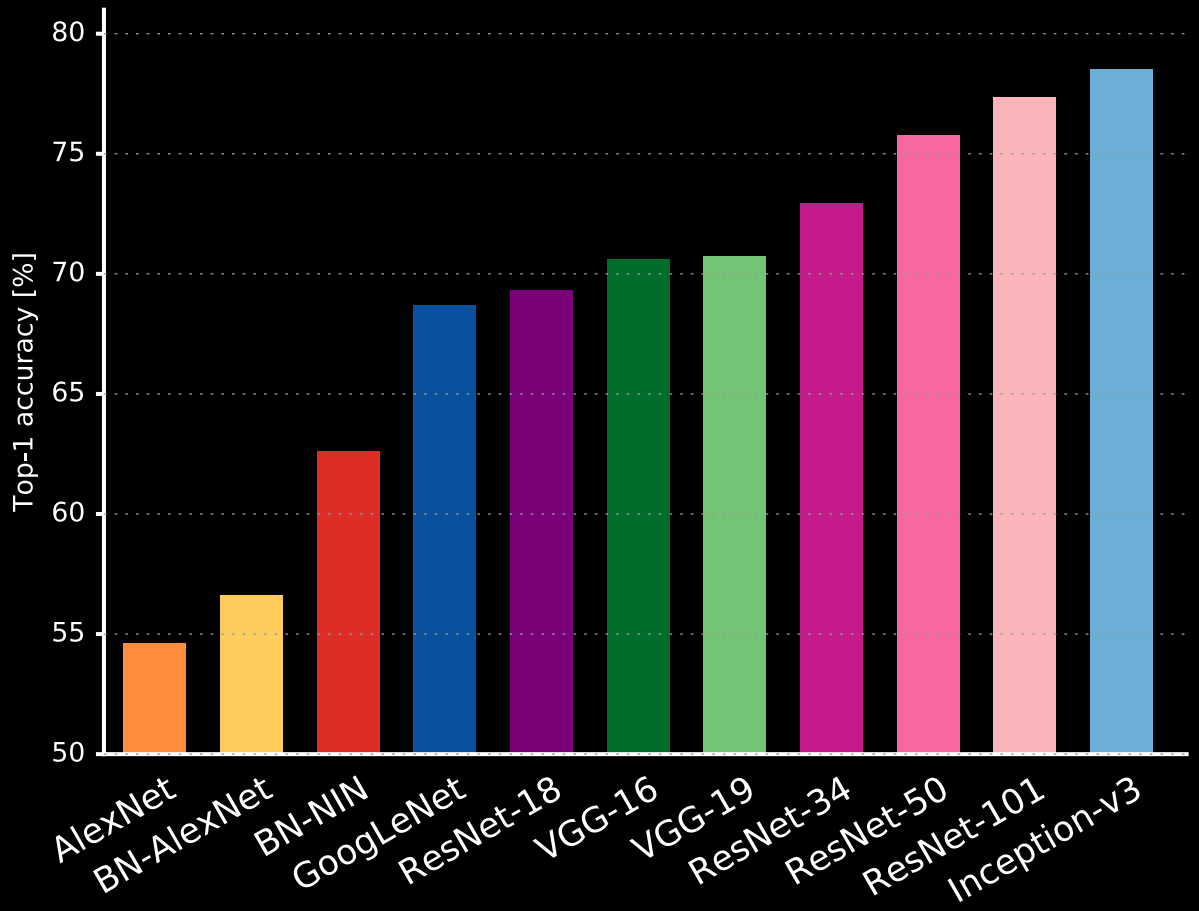
Yann LeCun, Léon Bottou, Yoshua Bengio, and Patrick Haffner

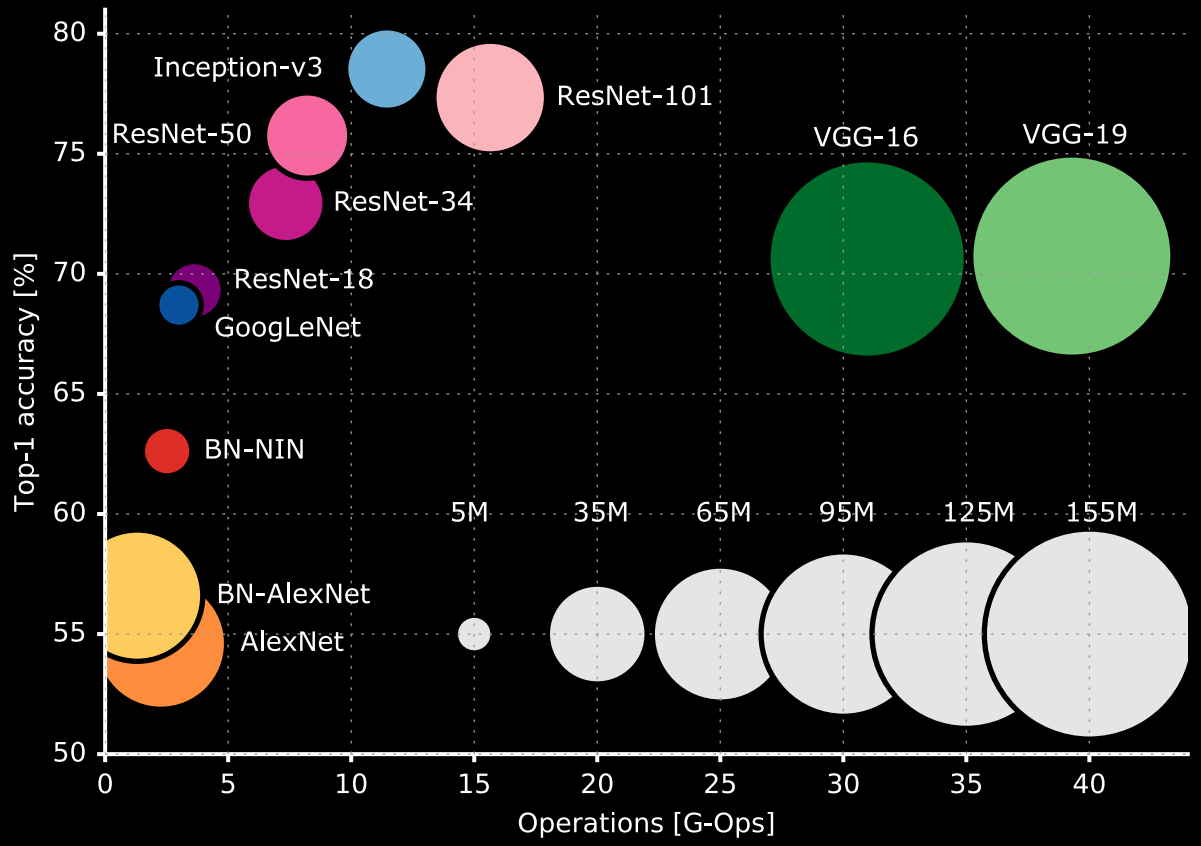
LeCun (1998) Gradient-based learning applied to document recognition

LeNet5 (II)



ImageNet





AlexNet (I)

ImageNet Classification with Deep Convolutional Neural Networks

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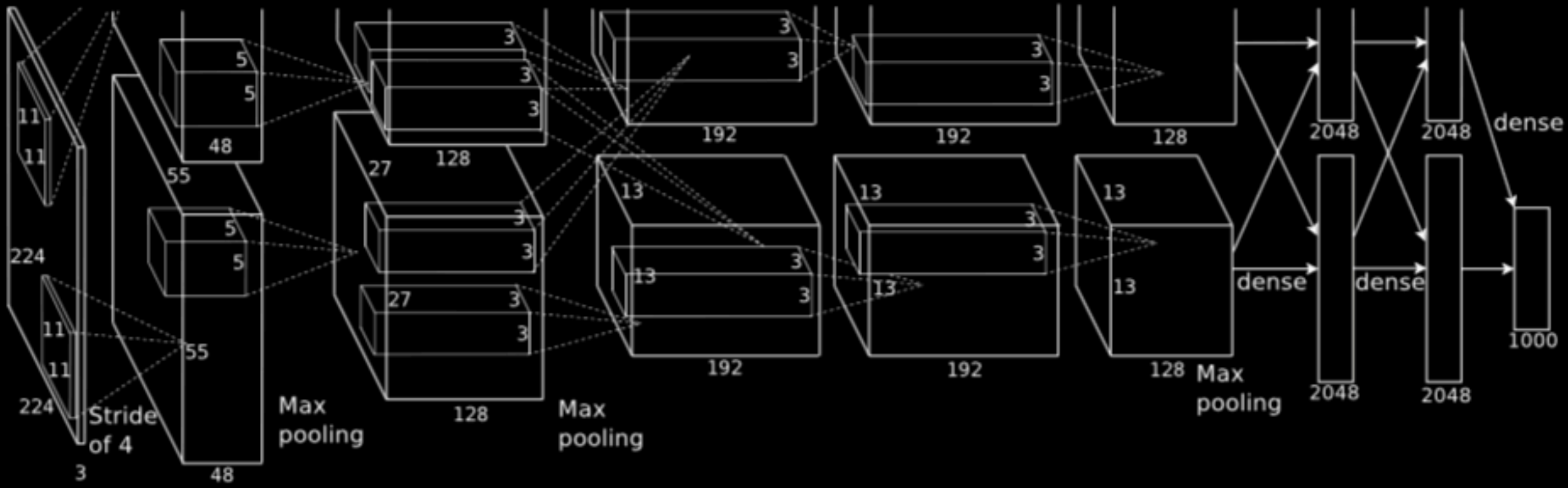
Krizhevsky (2012) ImageNet classification with deep convolutional neural networks

AlexNet (II)



GoogLeNet (I)

Going deeper with convolutions

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Wei Liu
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Yangqing Jia
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Pierre Sermanet
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Scott Reed
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Dragomir Anguelov
Google Inc.

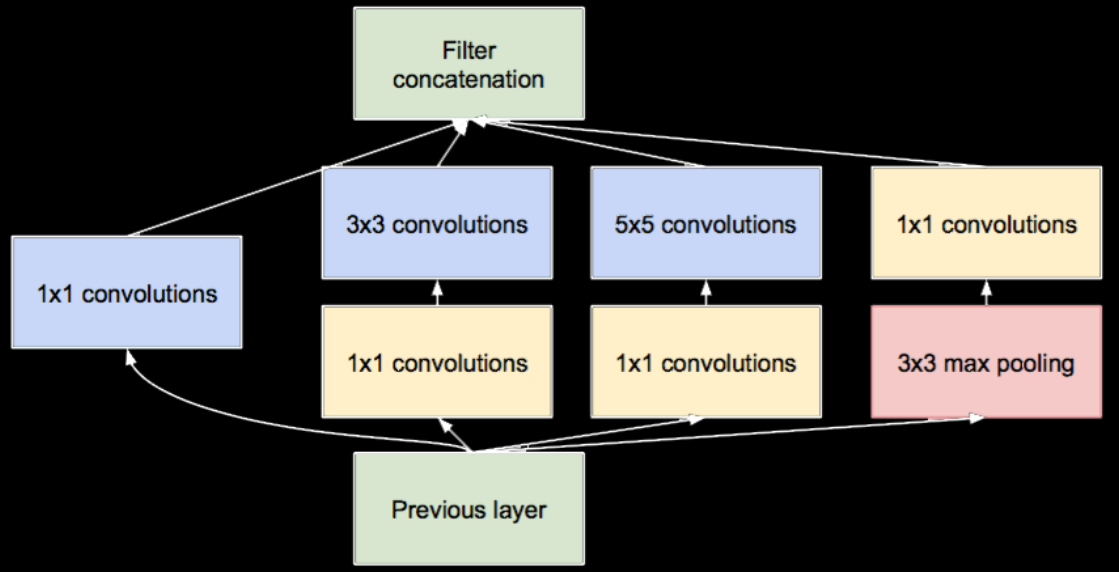
Dumitru Erhan
Google Inc.

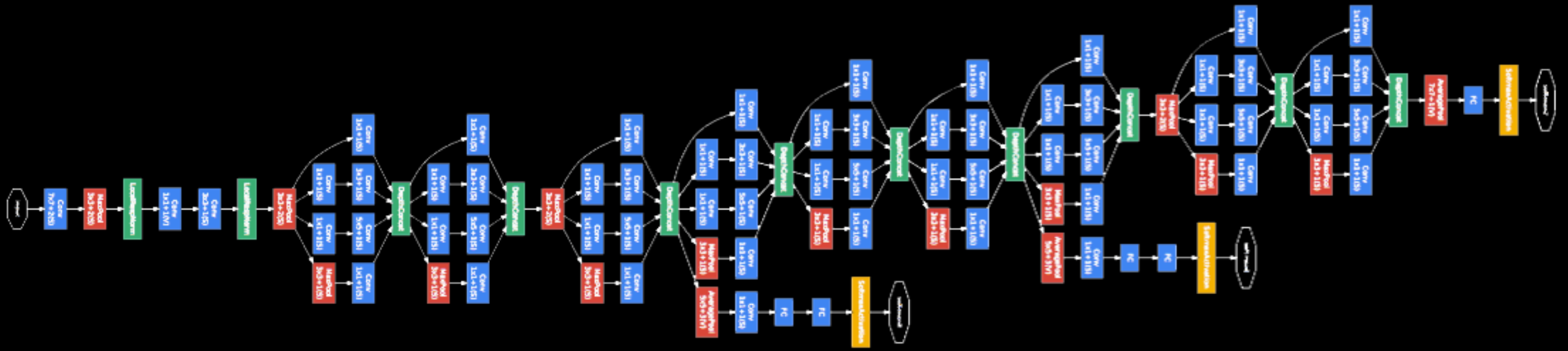
Vincent Vanhoucke
Google Inc.

Andrew Rabinovich
Google Inc.

GoogLeNet (II)

Inception v1, v2, v3, v4





ResNet (I)

Deep Residual Learning for Image Recognition

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ResNet (II)