Case study: MobileNet

MobileNet

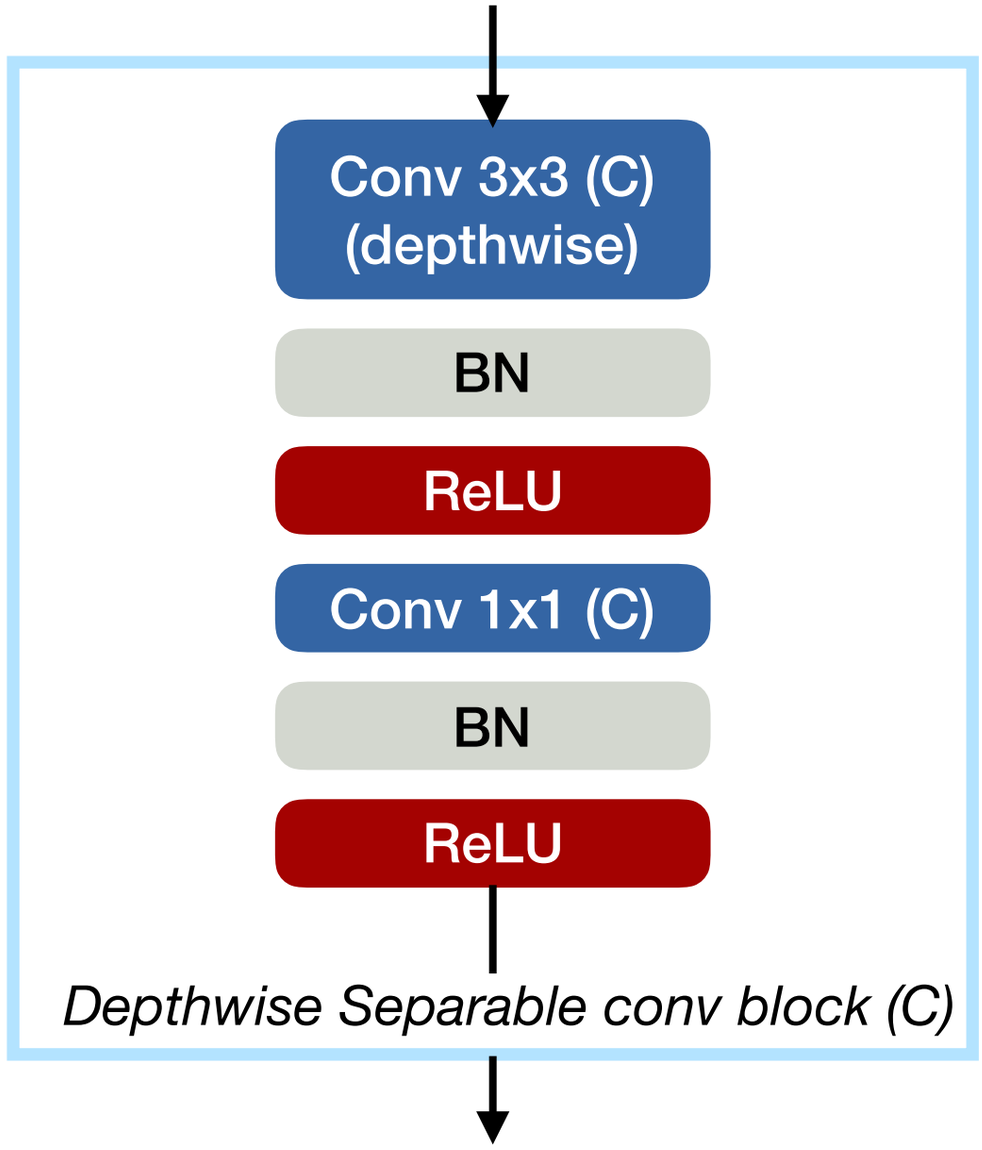
- Fast and small architecture for phones

- Heavily uses factorized depthwise convolutions

MobileNets: Efficient Convolutional Neural Networks for Mobile Vision Applications, Howard et al., arXiv 2017

Basic blocks in MobileNet building

- Factorized depthwise convolutions



MobileNet

Conv 7x7

Depthwise Sep Conv (32)

Depthwise Sep Conv (64)

Depthwise Sep Conv (128)

Depthwise Sep Conv (128)

Depthwise Sep Conv (256)

Depthwise Sep Conv (256)

Depthwise Sep Conv (512)

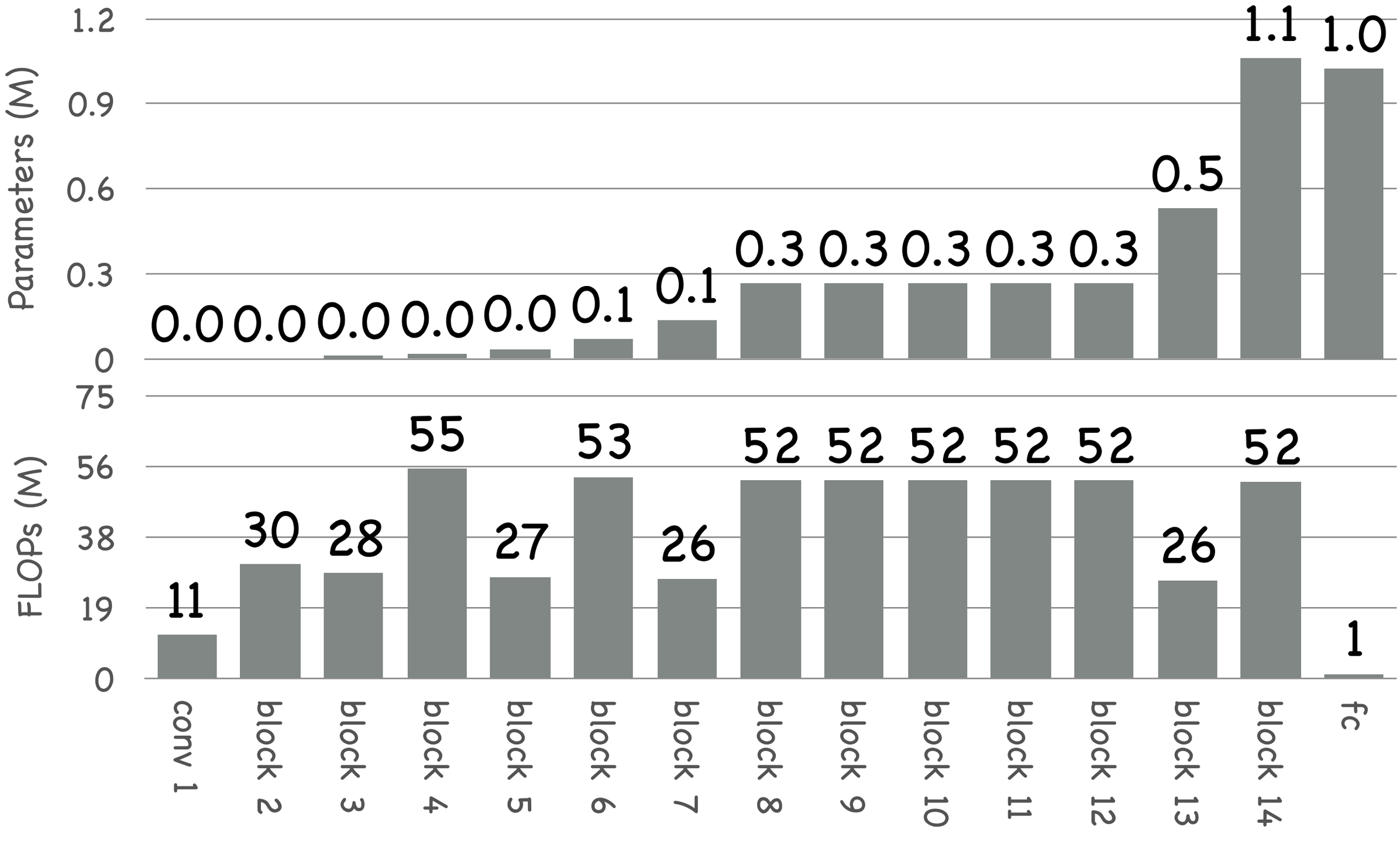
Depthwise Sep Conv (512)

Depthwise Sep Conv (1024)

Average Pool

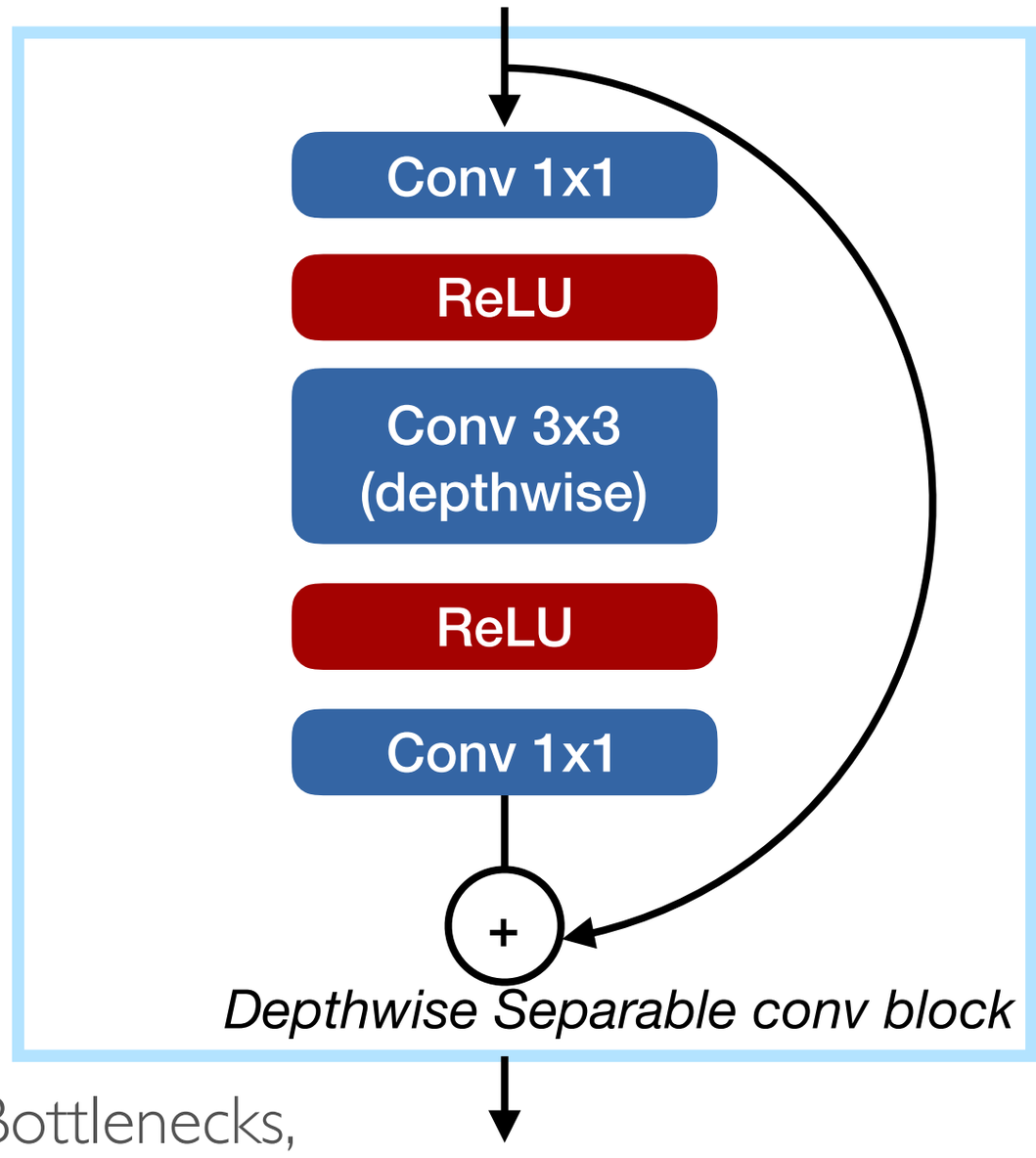
Linear (1000)

Parameters and computation



MobileNet v2

- Adds residual connections
  - Multiple spatial filter per channel
    - Adding additional 1x1 conv



MobileNetV2: Inverted Residuals and Linear Bottlenecks, Sandler et al., CVPR 2018