Deep Residual Learning for Image Recognition – ResNet

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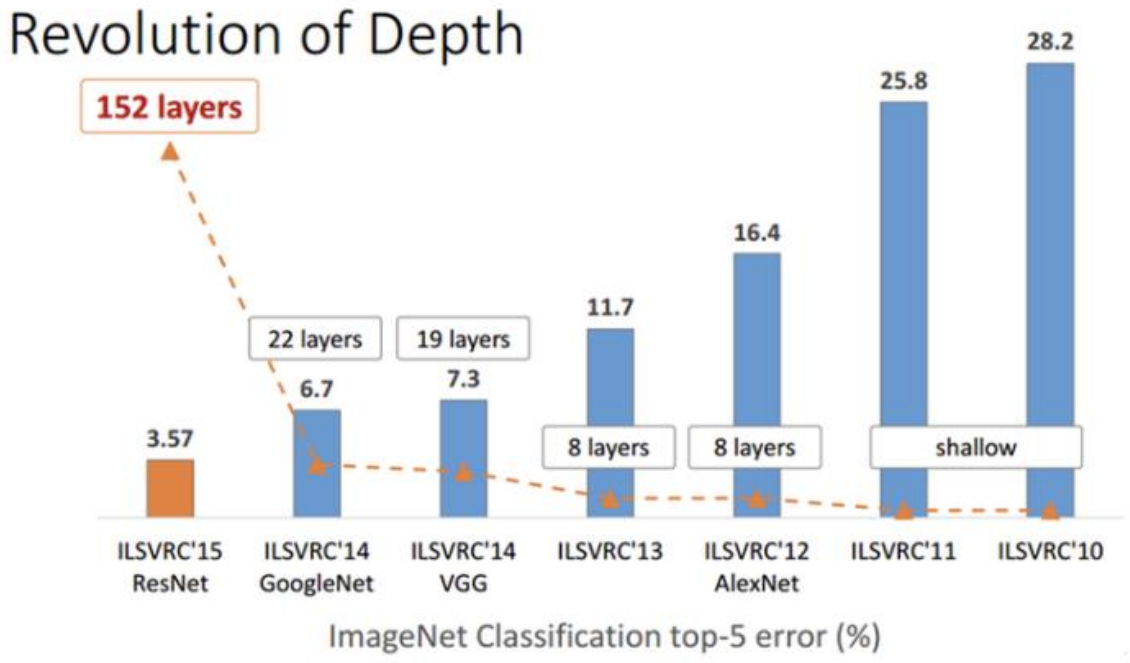
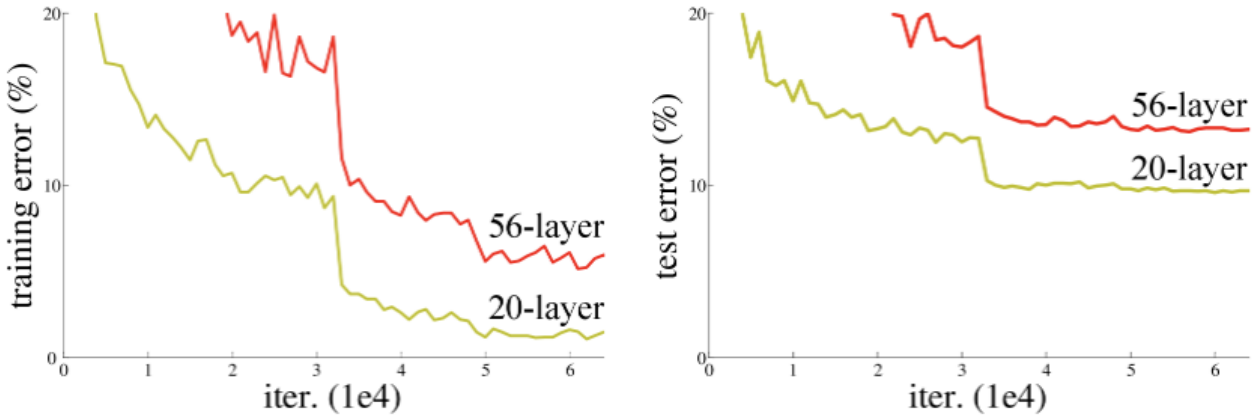
- Keywords
  - Residual Learning
  - Shortcut Connection
  - "We present a **residual learning framework to ease the training of networks that are substantially deeper** than those used previously. "



- Deeper network problem
  - Vanishing/Exploding Gradient
  - Difficult to train a model: Parameter ↑



< Experiment Using CIFAR-10 >

- Residual Learning – Solution about deeper network problem

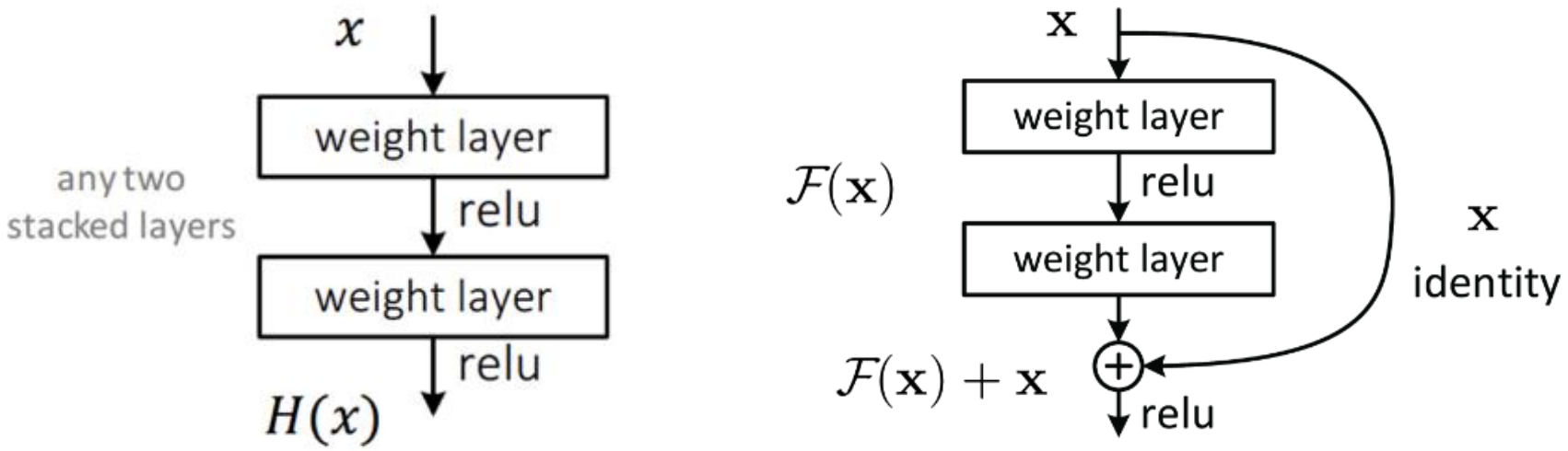
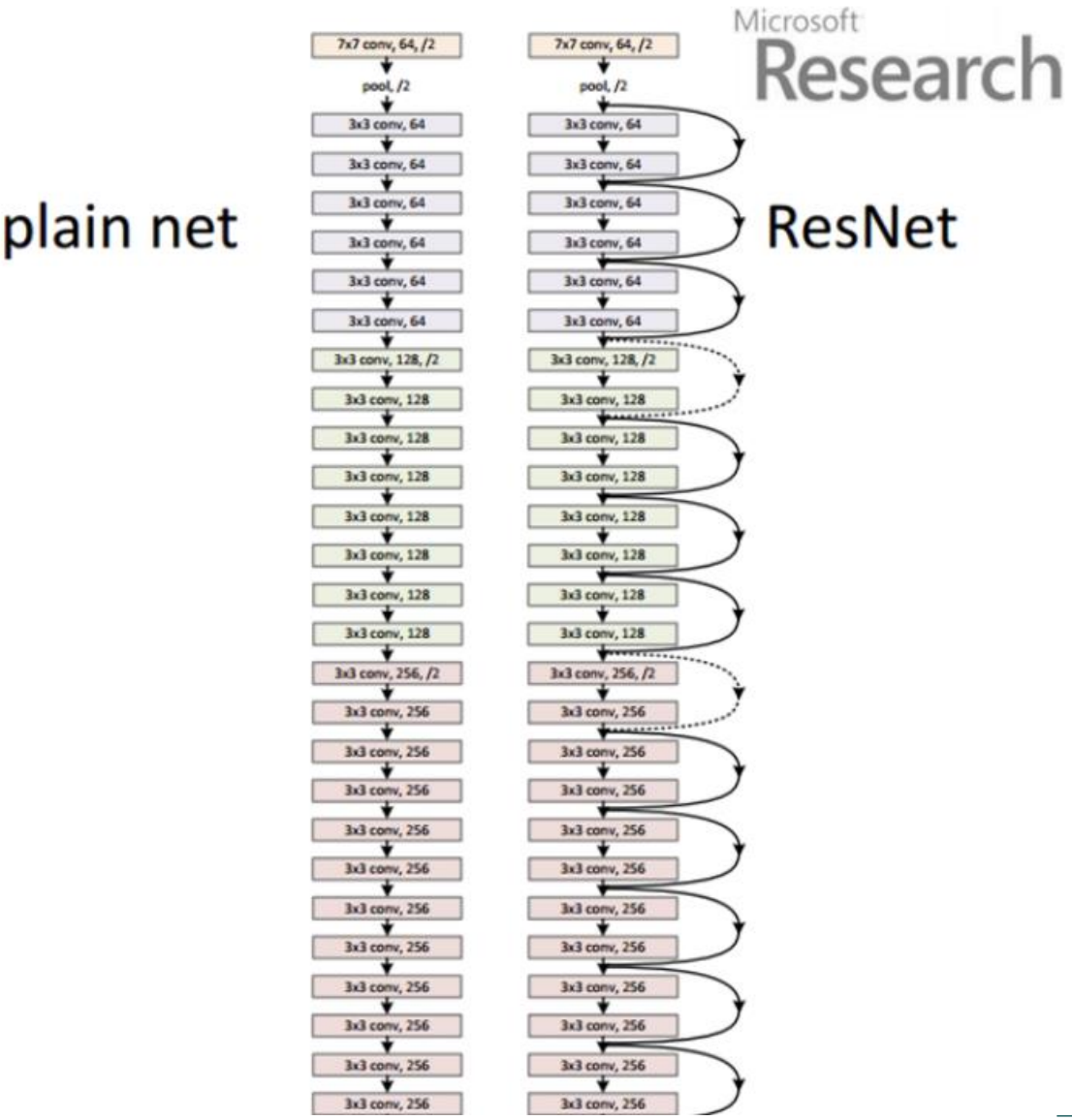


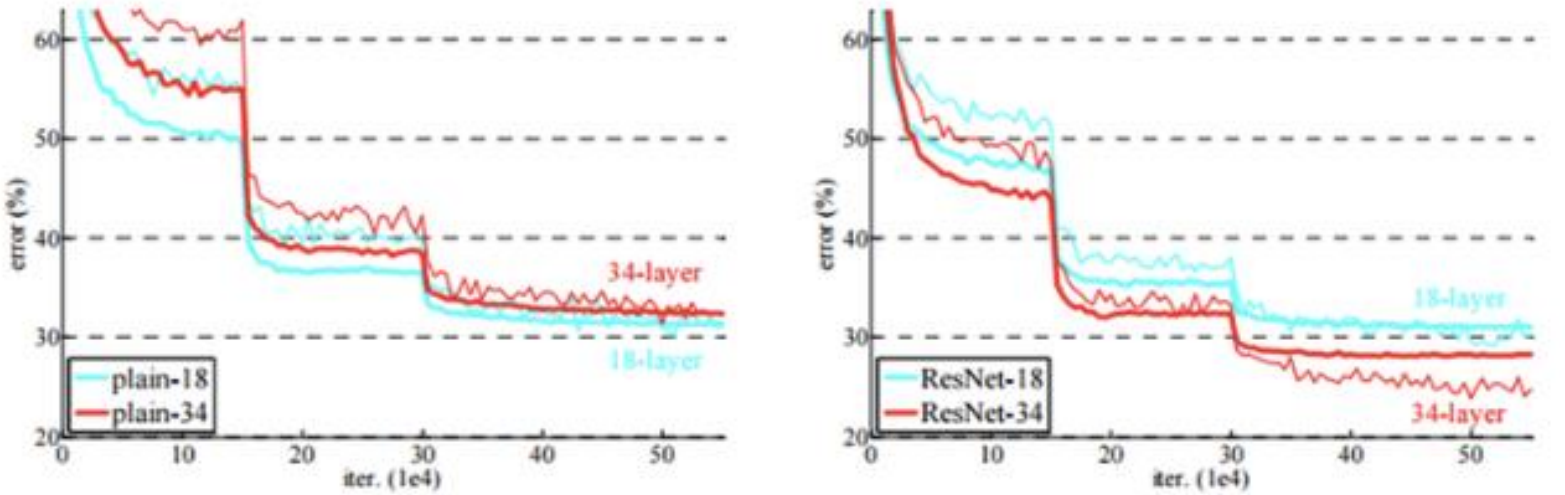
Figure 2: Residual learning: a building block.

  - Shortcut connection (or Skip Connection)

- Residual Learning



- Residual Learning - Advantages
  - Easier Optimization for deep networks
  - Higher Performance: ImageNet dataset, CIFAR -10 dataset



< Experiments result od plain network and residual network >