Introduction to Deep Learning (CS474)

Lecture 20

Rupam

Outline

- **Module 2**
  - Examples related to Classic Networks in Computer Vision
  - Building Very Deep Models in Pytorch

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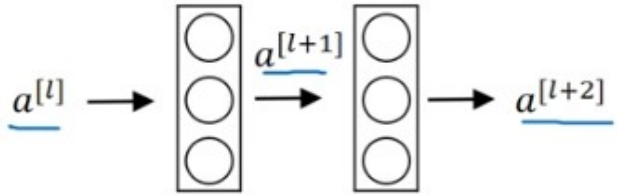
Resnet [4]



$a^{[l]} \rightarrow$ Linear $\rightarrow$ ReLU $\xrightarrow{a^{[l+1]}}$ Linear $\rightarrow$ ReLU $\rightarrow a^{[l+2]}$

Slide Credit: Dr. A. Ng

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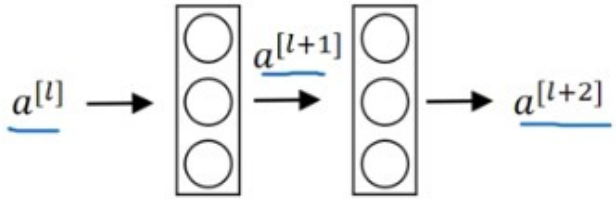
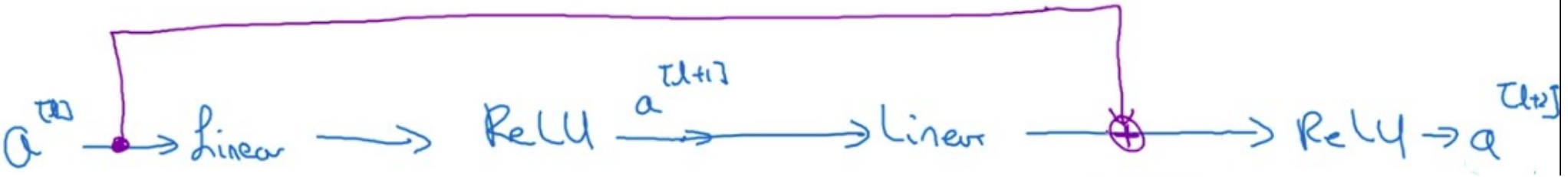
Resnet [4]





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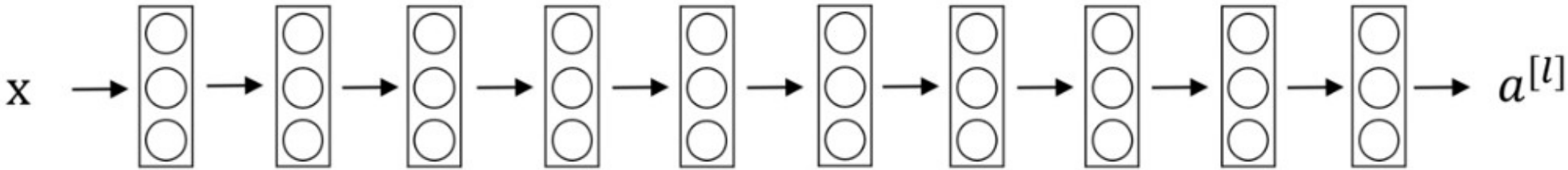
Resnet [4]



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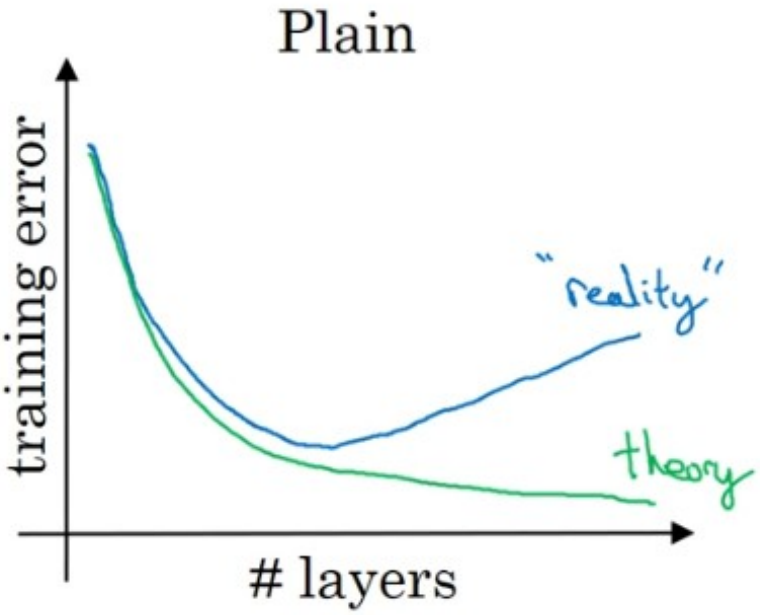
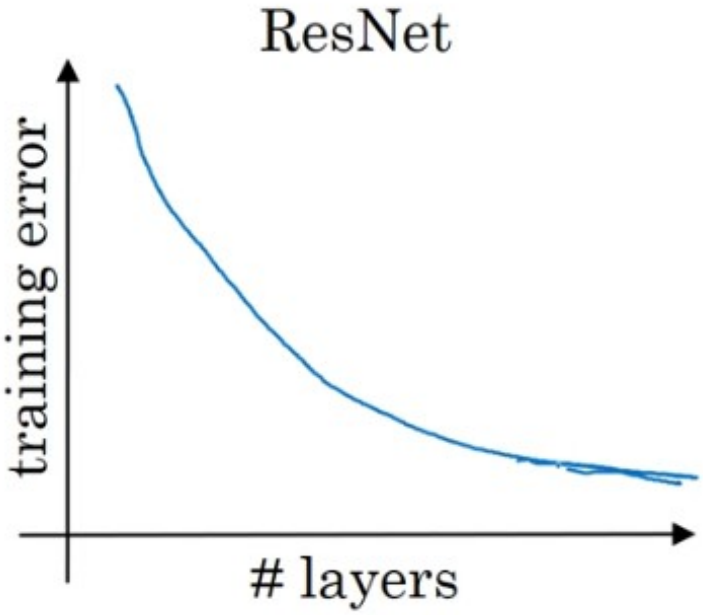
Resnet [4]





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Building Very Deep Models in Pytorch

- We talked about exceeding 100 layers in a convolutional neural network.
- How can we build that network in PyTorch without losing our minds in the process?
- The standard strategy is to define a building block, such as a (Conv2d, ReLU, Conv2d) + skip connection block, and then build the network dynamically in a for loop.

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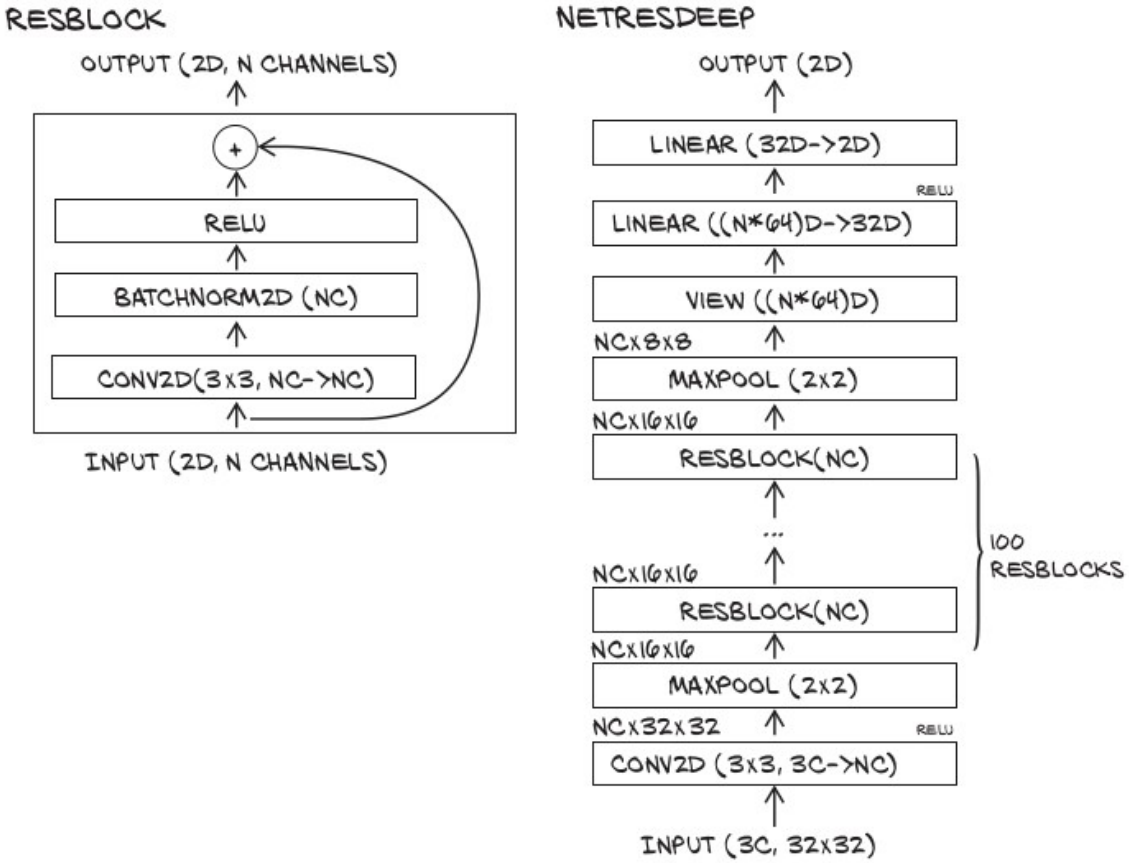
Building Very Deep Models in Pytorch



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References

- All the contents present in the slides are taken from various online resources. Due credit is given in the respective slides.These slides are used for *academic* purposes only.

[4] He, Kaiming, et al. "Deep residual learning for image recognition." Proceedings of the IEEE conference on computer vision and pattern recognition. 2016.