



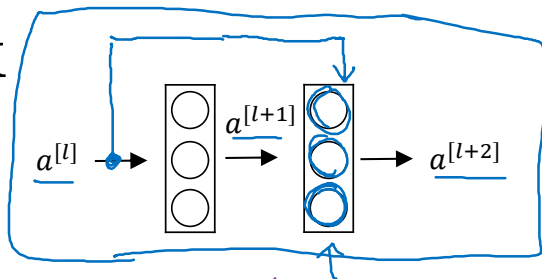
deeplearning.ai

Case Studies

Residual Networks (ResNets)

effective at helping train very deep networks.

Residual block



"short cut" / skip connection



$$\underline{z^{[l+1]} = W^{[l+1]} a^{[l]} + b^{[l+1]}}$$

↑ ↑

$$\underline{a^{[l+1]} = g(z^{[l+1]})}$$

$$\underline{z^{[l+2]} = W^{[l+2]} a^{[l+1]} + b^{[l+2]}}$$

~~$$a^{[l+2]} = g(z^{[l+2]})$$~~

$$a^{[l+2]} = g(z^{[l+2]} + \underbrace{a^{[l]}})$$

using residual blocks allows you to train much deeper nn.

Residual Network

"Plain network" (without short cut)

