

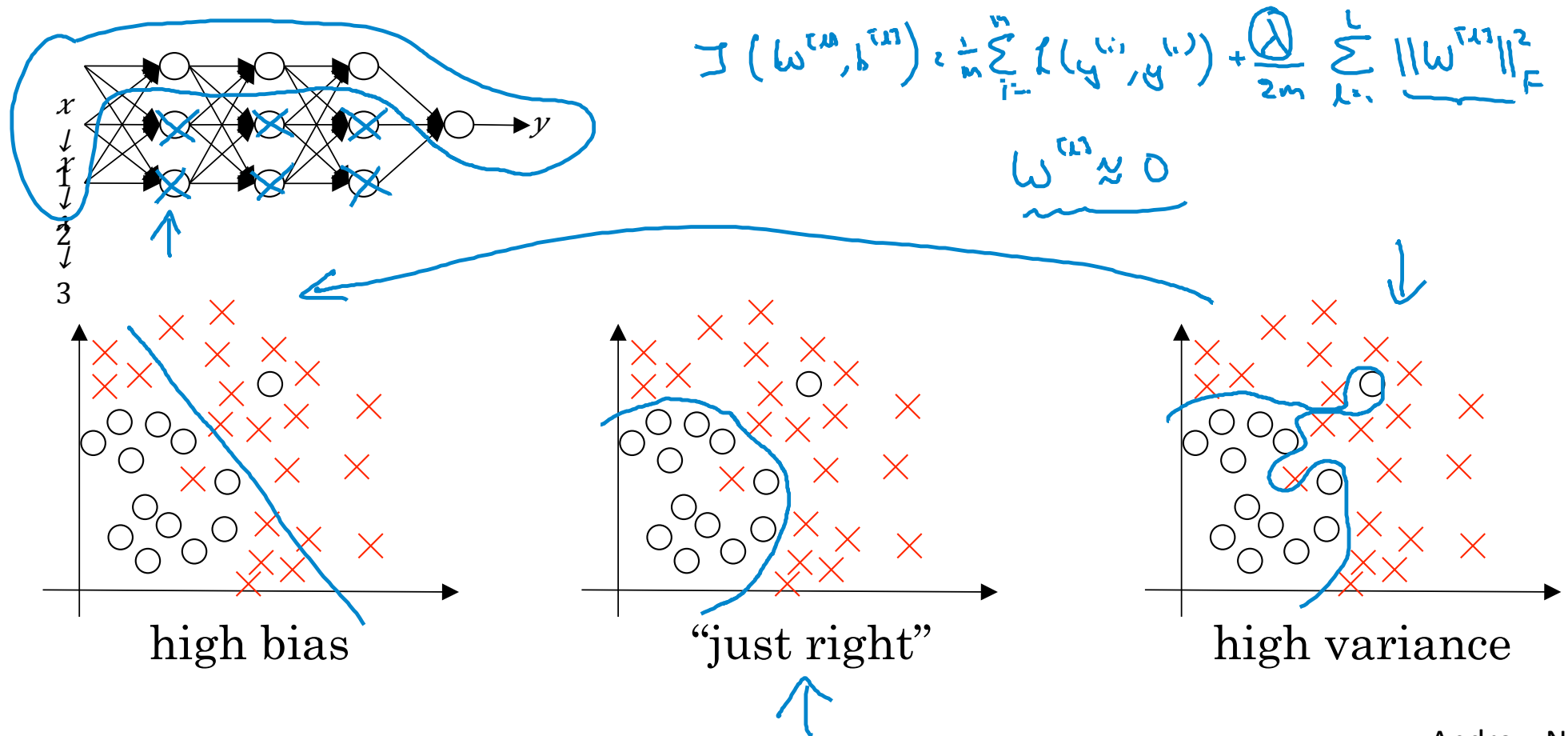


deeplearning.ai

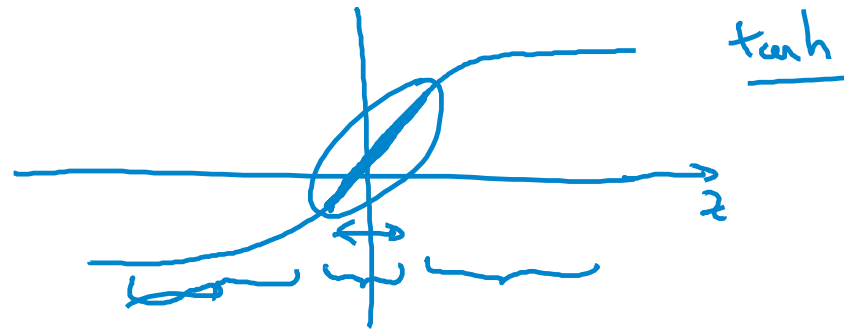
Regularizing your neural network

Why regularization reduces overfitting

How does regularization prevent overfitting?



How does regularization prevent overfitting?



$$g(z) = \tanh(z)$$

$$\lambda \uparrow$$

$$W^{[L]} \downarrow$$

$$z^{[L]} = W^{[L]} a^{[L-1]} + b^{[L]}$$

Every layer \approx linear



$$J(\dots) = \underbrace{\sum_i \mathcal{L}(\hat{y}^{(i)}, y^{(i)}) + \frac{\lambda}{2m} \sum_L \|W^{[L]}\|_F^2}_{\text{Every layer } \approx \text{linear}}$$

