



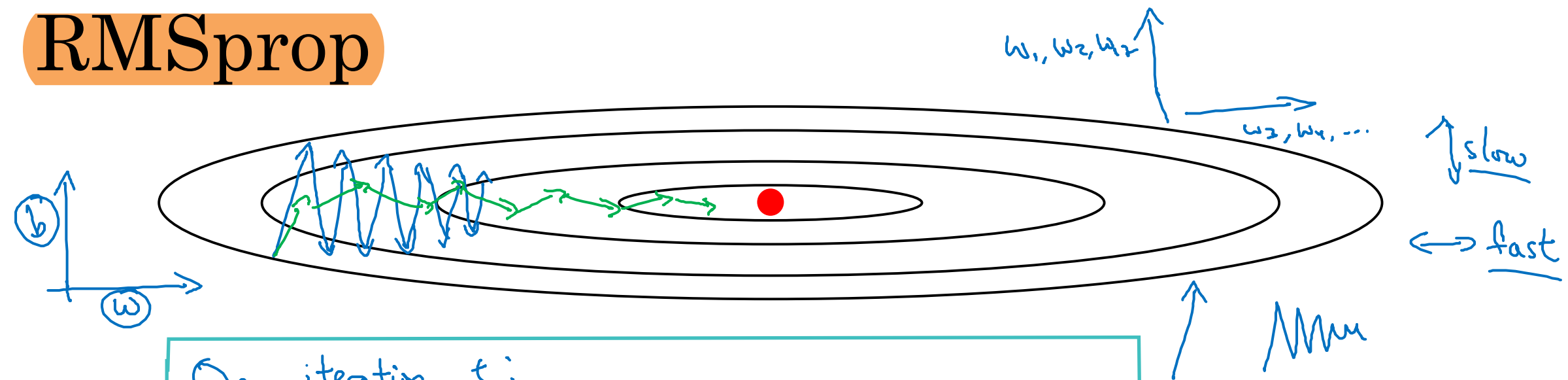
deeplearning.ai

# Optimization Algorithms

---

## RMSprop

# RMSprop



On iteration  $t$ :

Compute  $dw, db$  on current mini-batch

$$\underline{S_{dw}} = \beta_2 \underline{S_{dw}} + (1 - \beta_2) \underline{dw^2} \leftarrow \text{small}$$

$$\rightarrow \underline{S_{db}} = \beta_2 \underline{S_{db}} + (1 - \beta_2) \underline{db^2} \leftarrow \text{large}$$

$$w := w - \alpha \frac{dw}{\sqrt{S_{dw} + \epsilon}}$$

$$b := b - \alpha \frac{db}{\sqrt{S_{db} + \epsilon}}$$

$$\epsilon = 10^{-8}$$