



deeplearning.ai

Setting up your  
optimization problem

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## Gradient Checking

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### Gradient check for a neural network

Take  $W^{[1]}, b^{[1]}, \dots, W^{[L]}, b^{[L]}$  and reshape into a big vector  $\theta$ .

Take  $dW^{[1]}, db^{[1]}, \dots, dW^{[L]}, db^{[L]}$  and reshape into a big vector  $d\theta$ .

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# Gradient checking (Grad check)

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Gradient Checking  
implementation notes

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# Gradient checking implementation notes

- Don't use in training – only to debug
- If algorithm fails grad check, look at components to try to identify bug.
- Remember regularization.
- Doesn't work with dropout.
- Run at random initialization; perhaps again after some training.

Andrew Ng