

Lecture 9. Feedforward Neural
Networks, Back Propagation, and

<u>Course</u> > <u>Unit 3 Neural networks (2.5 weeks)</u> > <u>Stochastic Gradient Descent (SGD)</u> > 1. Objectives

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1. Objectives

Feedforward Neural Networks, Back-propagation, and Stochastic Gradient Descent At the end of this lecture, you will be able to

- Write down **recursive relations** with **back-propagation** algorithm to compute the gradient of the loss function with respect to the weight parameters.
- Use the **stochastic descent algorithm** to train a feedforward neural network.
- Understand that it is not guaranteed to reach global (only local) optimum with SGD to minimize the training loss.
- Recognize when a network has **overcapacity** .

Discussion

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Topic: Unit 3 Neural networks (2.5 weeks):Lecture 9. Feedforward Neural Networks, Back Propagation, and Stochastic Gradient Descent (SGD) / 1. Objectives

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