Congratulations! You've completed Week 2 Start Week 3

Neural Networks Basics

Learn to set up a machine learning problem with a neural network mindset. Learn to use vectorization to speed up your models.

Learning Objectives

Build a logistic regression model, structured as a shallow neural network

Implement the main steps of an ML algorithm, including making predictions, derivative computation, and gradient descent.

Implement computationally efficient, highly vectorized, versions of models.

Understand how to compute derivatives for logistic regression, using a backpropagation mindset.

Become familiar with Python and Numpy

Work with iPython Notebooks

Be able to implement vectorization across multiple training examples

Less

Logistic Regression as a Neural Network

- Binary Classification 8 min
- Logistic Regression 5 min
- Logistic Regression Cost Function 8 min
- Gradient Descent 11 min
- Derivatives 7 min
- More Derivative Examples 10 min
- Computation graph 3 min
- Derivatives with a Computation Graph 14 min
- Logistic Regression Gradient Descent 6 min
- Gradient Descent on m Examples 8 min

Python and Vectorization

- Vectorization 8 min
- More Vectorization Examples 6 min
- Vectorizing Logistic Regression 7 min

Vectorizing Logistic Regression's Gradient Output 9 min

Broadcasting in Python 11 min

A note on python/numpy vectors 6 min

Quick tour of Jupyter/iPython Notebooks 3 min

Explanation of logistic regression cost function (optional) 7 min

Practice Questions

Quiz: Neural Network Basics 10 questions

Programming Assignments

Deep Learning Honor Code 2 min

Programming Assignment FAQ 10 min

Python Basics with numpy (optional) 1h

✓ **Practice Programming Assignment:** Python Basics with numpy (optional) 1h

✓ Logistic Regression with a Neural Network mindset 2h

✓ **Programming Assignment:** Logistic Regression with a Neural Network mindset

Heroes of Deep Learning (Optional)

● Pieter Abbeel interview 16 min

●