

Environment Setup Instructions

Multivariate Linear Regression

- ✓ **Video:** Multiple Features
8 min
- ✓ **Reading:** Multiple Features
3 min
- ✓ **Video:** Gradient Descent for Multiple Variables
5 min
- ✓ **Reading:** Gradient Descent For Multiple Variables
2 min
- ✓ **Video:** Gradient Descent in Practice I - Feature Scaling
8 min
- ✓ **Reading:** Gradient Descent in Practice I - Feature Scaling
3 min
- ✓ **Video:** Gradient Descent in Practice II - Learning Rate
8 min
- ✓ **Reading:** Gradient Descent in Practice II - Learning Rate
4 min
- ✓ **Video:** Features and Polynomial Regression
7 min
- ✓ **Reading:** Features and Polynomial Regression
3 min

Computing Parameters Analytically

- ✓ **Video:** Normal Equation
16 min
- ✓ **Reading:** Normal Equation
3 min
- ✓ **Video:** Normal Equation Noninvertibility
5 min
- ✓ **Reading:** Normal Equation Noninvertibility
2 min

Submitting Programming Assignments

- ✓ **Video:** Working on and Submitting Programming Assignments
3 min



Thank you to Machine Learning Mentor, Tom Mosher, for compiling this list

Subject: Confused about " $h(x) = \theta' * x$ " vs. " $h(x) = X * \theta$ "

Text:

The lectures and exercise PDF files are based on Prof. Ng's feeling that novice programmers will adapt to for-loop techniques more readily than vectorized methods. So the videos (and PDF files) are organized toward processing one training example at a time. The course uses column vectors (in most cases), so h (a scalar for one training example) is $\theta' * x$.

Lower-case x typically indicates a single training example.

The more efficient vectorized techniques always use X as a matrix of all training examples, with each example as a row, and the features as columns. That makes X have dimensions of $(m \times n)$, where m is the number of training examples. This leaves us with h (a vector of all the hypothesis values for the entire training set) as $X * \theta$, with dimensions of $(m \times 1)$.

X (as a matrix of all training examples) is denoted as upper-case X .

Throughout this course, dimensional analysis is your friend.

Subject: Tips from the Mentors: submit problems and fixing program errors

Text:

This post contains some frequently-used tips about the course, and to help get your programs working correctly.

The Most Important Tip:

Search the forum before posting a new question. If you've got a question, the chances are that someone else has already posted it, and received an answer. Save time for yourself and the Forum users by searching for topics before posting a new one.

Running your scripts:

At the Octave/Matlab command line, you do not need to include the ".m" portion of the script file name. If you include the ".m", you'll get an error message about an invalid indexing operation. So, run the Exercise 1 script by typing just "ex1" at the command line.

You also do not need to include parenthesis () when using the submit script. Just type "submit".

You cannot execute your functions by simply typing the name. All of the functions you will work on require a set of parameter values. enter