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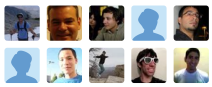

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Do I need to learn linear algebra before I dive into machine learning?

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2 ANSWERS ASK TO ANSWER

Sagar Giri
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Andres Corrada-Emmanuel, Proved the Marriage Lemma for ... (more)
3 upvotes by Ajinkya Kale, Manjari Narayan, and Jessica Su.

Yes! Consider the problem of "learning" the coefficients for the following model that relates an observable Y to some underlying, unseen characteristic X:

$$Y = aX + b$$

You are given a training set consisting of points (X_i, Y_i) and must learn the best a and b values that can predict the correct value for X when a new observation Y is made.

You are going to need some knowledge of linear algebra (and calculus!) to understand the derivation of the optimal formulas for a and b as detailed in this Wikipedia entry:

http://en.wikipedia.org/wiki/Lin...

Written 2 Mar, 2011.

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Leon Palafox, Machine Learning Grad Student ... (more)
3 upvotes by Misha Denil, Robert Neuhaus, and Rattler Tsai.

Machine Learning, like Linear Algebra are large areas that overlap each other in several points.

Linear Algebra usually deals with Matrix Algebra and really important properties like orthogonality and inversion of matrices. As well as important decompositions that will come in handy when learning certain machine learning algorithms.

a Machine Learning Algorithm and to be eventually able to design your own.

If you are only interested on using the algoithm, Linear Algebra is not that important, but I strongly recommend you to check a bit of it.

Most Machine Learning Books have a good mathematics background on what you ought to know before going deep into the field.

I'll recommend you to check out MetaOptimize, to check out a thread on which Machine Learning Books should you use in order to have a good formation in that field.

If your interest is mostly curiosity and want to use those tools to analyze some data, you might try tools like Weka, which is an Out of The Shelf library for Java with lots of cool implementations.

Updated 23 Aug, 2011.

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