
Speeding up your ML code

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Photo credit <http://allinguide.com/best-tips-how-to-speed-up-your-wordpress-website-or-blog/>

**Your ML code runs too slow;
What can you do?**

How to speed up your ML?

- **Speed up the code**
 - Use a faster language
 - Use a cluster/multicore machine /GPU
 - *Vectorize*
- **Use a streaming algorithm**
 - In features or observations
- **Develop on a subset of the data**
 - Or a subset of the features (univariate preprocessing)
- **Do dimensionality reduction**
- **Pick a faster algorithm**
 - Logistic regression → ?
 - Kernelized SVM → ?
 - Stepwise regression → ?
 - K-NN → ?

Pick a faster algorithm

- **Logistic regression → linear regression**
- **Kernelized SVM → linear SVM**
- **Stepwise regression → stagewise regression**
- **Knn → K-means**

How to speed up your ML: True/False

- **Sparse code runs faster?**
- **Vector-based code runs faster?**
- **Models based on principle components are usually faster than one in the original features?**