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(/learn/ml-classification/home/welcome)

Scaling to Huge Datasets & Online Learning





With the advent of the internet, the growth of social media, and the embedding of sensors in the world, the magnitudes of data

✓ More

Scaling ML to huge datasets



Slides presented in this module

(/learn/ml-classification/supplement/rC1np/slidespresented-in-this-module)



Gradient ascent won't scale to today's huge datasets 3 min

(/learn/ml-classification/lecture/Um6kl/gradient-ascent-won-t-scale-to-todays-huge-datasets)

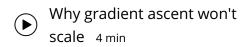
Timeline of scalable machine
learning & stochastic

Help Center

gradient 4 min

(/learn/ml-classification/lecture/vEF6f/timeline-of-scalable-machine-learning-stochastic-gradient)

Scaling ML with stochastic gradient



(/learn/ml-classification/lecture/9dluv/why-gradient-ascent-won-t-scale)

Stochastic gradient: Learning one data point at a time 3 min

(/learn/ml-classification/lecture/d4rdu/stochastic-gradient-learning-one-data-point-at-a-time)

Comparing gradient to stochastic gradient 4 min

(/learn/ml-classification/lecture/c7T3x/comparing-gradient-to-stochastic-gradient)

Understanding why stochastic gradient works

Why would stochastic gradient ever work? 4 min

(/learn/ml-classification/lecture/M45d6/why-wouldstochastic-gradient-ever-work)

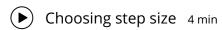
Convergence paths 2 min

(/learn/ml-classification/lecture/m36Rf/convergence-paths)

Stochastic gradient: Practical tricks

Shuffle data before running stochastic gradient 2 min

(/learn/ml-classification/lecture/GnfLr/shuffle-databefore-running-stochastic-gradient)



(/learn/ml-classification/lecture/EUs5p/choosing-stepsize)

Don't trust last coefficients 2 min

(/learn/ml-classification/lecture/iDOIY/don-t-trust-last-coefficients)

(OPTIONAL) Learning from batches of data 4 min

(/learn/ml-classification/lecture/H1cmY/optional-learning-from-batches-of-data)

(OPTIONAL) Measuring convergence 4 min

(/learn/ml-classification/lecture/MWjop/optional-measuring-convergence)

(OPTIONAL) Adding regularization 3 min

(/learn/ml-classification/lecture/J2Ya1/optional-adding-regularization)

Online learning: Fitting models from streaming data

► The online learning task 3 min

(/learn/ml-classification/lecture/5c7hE/the-online-learning-task)

Using stochastic gradient for online learning 4 min

(/learn/ml-classification/lecture/g4r4n/usingstochastic-gradient-for-online-learning)

Summarizing scaling to huge datasets & online learning

Scaling to huge datasets through parallelization & module recap 2 min

(/learn/ml-classification/lecture/hrlZB/scaling-to-huge-datasets-through-parallelization-module-recap)



Quiz: Scaling to Huge Datasets & Online Learning 10 questions

(/learn/ml-classification/exam/hJdXC/scaling-to-hugedatasets-online-learning)

Programming Assignment



Training Logistic Regression via Stochastic Gradient Ascent

(/learn/ml-classification/supplement/ZQ1aY/traininglogistic-regression-via-stochastic-gradient-ascent)



Quiz: Training Logistic Regression via Stochastic

Gradient Ascent 13 questions

(/learn/ml-classification/exam/UWEJn/training-logisticregression-via-stochastic-gradient-ascent)