Information and Computer Sciences Seminar

Friday, April 13, 1.30pm, Y/L 3F (Hamilton library basement)

Join us for coffee after the talk.

Large-Scale Machine Learning with Stochastic Gradient Descent

Dr. Leon Bottou

Microsoft

During the last decade, the data sizes have grown faster than the speed of processors. In this context, the capabilities of statistical machine learning methods is limited by the computing time rather than the sample size. A more precise analysis uncovers qualitatively different tradeoffs for the case of small-scale and large-scale learning problems. The large-scale case involves the computational complexity of the underlying optimization algorithm in non-trivial ways. Unlikely optimization algorithms such as stochastic gradient descent show amazing performance for large-scale problems. In particular, second order stochastic gradient and averaged stochastic gradient are asymptotically efficient after a single pass on the training set.

Mānoa Lecture Series in Machine Learning and Computational Neuroscience

http://www2.hawaii.edu/~sstill/lectureseries.html

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