

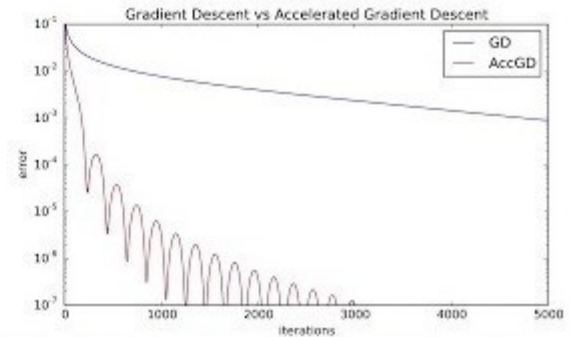
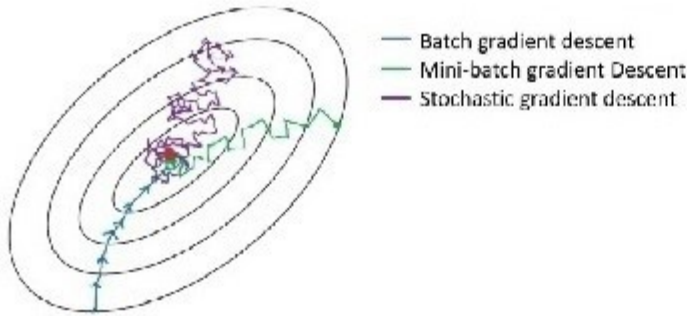


MATH6001-101

Nonlinear Optimization in Machine Learning Spring 2021

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Do you want to know more about how neural networks are trained? Have you been facing hard-to-solve optimization problems in your engineering practice?

YOU SHOULD TAKE THIS COURSE!

We will study together in this course those modern nonlinear optimization algorithms that are very commonly used in statistical machine learning practice. Topics include: convex functions, steepest descent, line search method, heavy-ball method, accelerated gradient descent, stochastic gradient descent and variance-reduction methods, coordinate descent, alternating directions and nonconvex optimization.

No prior knowledge about machine learning is required. If you know basic calculus and some matrix algebra, as well as a little elementary statistics, you are more than ready to go through the course. In addition, we will also guide you to programming via python and tensorflow from the very basics to advanced.

