Random-subspaces Newton method for unconstrained non-convex optimization

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Abstract

In this talk, we present a randomized subspace regularized Newton method for a non-convex function. We show that our method has global convergence under appropriate assumptions, and its convergence rate is the same as that of the full regularized Newton method. Furthermore, we can obtain a local linear convergence rate, under some additional assumptions, and prove that this rate is the best we can hope when using random subspace.