



THE UNIVERSITY OF CHICAGO

COMPUTATIONAL AND APPLIED MATHEMATICS STUDENT SEMINAR

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An Overview of Gradient-based Optimization

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Jones 226, 5747 South Ellis Avenue

ABSTRACT

Gradient based algorithms are basic yet useful family of algorithms to perform optimization in real life and by far the most common way to optimize neural networks. Gradient descent is the simplest form of gradient based optimization algorithm. It is a way to minimize an objective function parameterized by a model's parameters by updating the parameters in the opposite direction of the gradient of the objective function. In recent years, there are many interesting modifications to the simple form of gradient descent that achieve better performance on many tasks. This presentation will provide an overview of these algorithms and the intuitions behind them.