Invitation to the Webinar

Gradient-based optimization methods for neural network training

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Thursday 3rd June 9.30-12.30 (Webex meeting link here)

Friday 4th June 9.30-12.30 (Webex meeting link here)

Large-scale machine learning problems are nowadays pervasive in computer science and engineering, with applications ranging from perceptual tasks such as image or speech recognition to the parametric design of industrial products. The process of "learning a task" involves "training" a data-driven model that predicts the unknown outcome based on the available data on the application of interest. Artificial Neural Networks are among the most popular and employed models for predictive tasks in machine learning.

In this seminar, we present and discuss gradient-based optimization methods for solving finite-sum minimization problems arising in machine learning applications. The methods analysed employ first-order models for the objective function and stochastic gradient approximations based on subsampling. The application of such methods on Neural and Convolutional Neural Networks will be considered and numerical results will be presented using the Keras deep learning API in Python.

Interested students can register by adding their names to this Google Sheet or sending an email to simone.rebegoldi@unifi.it