Proximal Gradient Method

Type of talk

PhD seminar

Speaker

Néhémy Lim, CEA-LIST Saclay, Gif-sur-Yvette, France
Romain Brault, IBISC, Arob@s Team, Evry, France

Abstract

Proximal algorithms are a class of optimization algorithms that can be viewed as a tool for nonsmooth, constrained, large-scale convex optimization problems. They are very generally applicable, but are especially well-suited to machine learning problems of substantial recent interest involving large or high-dimensional datasets. In this talk, we will present a general overview of these algorithms [1] and discuss different interpretations of proximal operators and algorithms, describe their connections to many other topics in optimization and applied mathematics, survey some popular algorithms, and provide a number of examples, including a review of the paper by Richard et al [2].

References

[1] Parikh,N. and Boyd,S. (2013) Proximal Algorithms. Fundations and Trends in Optimization Vol 1 No. 3(2013), 123 231.
[2] Richard,E. et al. (2012) Estimation of simultaneously sparse and low rank matrices. arXiv Prepr. arXiv1206.6474.