



Structured Sparsity for Computer Vision

Francis Bach
INRIA, FR

Abstract

The concept of parsimony is central in many scientific domains. In the context of statistics, signal processing, machine learning or computer vision, it takes the form of variable or feature selection problems, and is commonly used in two situations: First, to make the model or the prediction more interpretable or cheaper to use, i.e., even if the underlying problem does not admit sparse solutions, one looks for the best sparse approximation. Second, sparsity can also be used given prior knowledge that the model should be sparse. In these two situations, reducing parsimony to finding models with low cardinality turns out to be limiting, and structured parsimony has emerged as a fruitful practical extension, with applications to image processing and text processing. In this talk, I will review key concepts in sparse coding and recent results on structured sparsity, as it applies to machine learning and computer vision.

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