New Results for Sparsity-inducing Methods for Logistic Regression

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We propose and analyze methods in logistic regression that induce sparse solutions. We introduce a novel condition number associated with the data for logistic regression that measures the degree of non-separability of the data, and that naturally enters the analysis and the computational properties of methods. We take advantage of very recent new results in first-order methods for convex optimization due to Bach and others, to present new computational guarantees for the performance of methods for logistic regression – particularly in the high-dimensional regime. This is joint work with Paul Grigas and Rahul Mazumder.

Keywords: logistic regression; sparsity; convex optimization, high-dimensional regime.