

Sparse Graphical Models and the US Senate

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Abstract

Graphical models provide a very versatile representation of multivariate distributions. Sparsity is a desirable feature in such models, as it allows better interpretability and visualization. Yet, classical approaches to graphical modeling do not usually produce sparse graphs. In this talk, we describe techniques to obtain sparsity, for both continuous and discrete variables, based on l_1 -norm (“lasso”) penalty and convex optimization algorithms. We illustrate our results in the context of detecting voting patterns in the 2004-2006 US Senate.

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