

Optimization and multidimensional matrices

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Abstract

We consider some optimization problems that could be treated as intractable due to the tremendously many variables and lack of convexity. However, there is some structure that allows one to construct very efficient algorithms based on the numerical linear algebra instruments. A well known example of the kind is the minimization of the distance between a given matrix and matrices of limited rank. We consider similar in effect possibilities for multidimensional matrices and some tensor decompositions both classical and the ones appeared recently.

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