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Revisiting Symmetric Tensor Decompositions

In this work we present a simple method for computing a symmetric CP decomposition based on a Gauss-Newton linearization. The algorithm requires solving a sequence of linear least squares problems. With modest modification our approach can be extended to compute symmetric decompositions under additional constraints such as nonnegativity and sparsity. We present empirical results highlighting the effectiveness of the approach. This is joint work with Eric Chi.