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Jonathan Shi* (jonathan.shi@unibocconi.it), **Sam Hopkins** and **Tselil Schramm**. *Fast generically robust tensor rank decomposition through convex relaxation.*

We overview a family of techniques for finding the symmetric rank decompositions of possibly overcomplete tensors. The techniques are united by a common view of a convex relaxation of the original problem, although in some cases they are implemented using only basic linear algebraic operations, in nearly the time to compute a singular value decomposition of a matrix reshaping of the input.

A common feature of these algorithms is that they are provably robust to adversarial perturbations of bounded spectral norm. In particular, generically decomposing overcomplete order-4 tensors is done faster than previously known possible even without said robustness guarantee. (Received January 22, 2020)