

RANDOM PERTURBATION OF LOW-RANK MATRICES

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The analysis of large matrices is a key aspect of high-dimensional data analysis, with computing the singular values and vectors of a matrix being a central task. However, real-world data is often disturbed by noise, which affects the essential spectral parameters of the matrix. While classical deterministic theorems can provide accurate estimates for the worst-case scenario, this talk will focus on the case when the perturbation is random. By assuming that the data matrix has a low rank, optimal subspace perturbation bounds can be achieved under mild assumptions. This talk is based on joint works with Sean O'Rourke and Van Vu.

Joint work with Sean O'Rourke (the University of Colorado Boulder, USA), Van Vu (Yale University).