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Nicolas Verzelen - Optimal Permutation Estimation in Crowd-Sourcing problems

Thursday, October 6, 2022 11:30 AM (1 hour)

Motivated by crowd-sourcing applications, we consider a model where we have partial observations from a bivariate isotonic $n \times d$ matrix with an unknown permutation π^* acting on its rows. We consider the twin problems of recovering the permutation π^* and estimating the unknown matrix. We introduce a polynomial-time procedure achieving the minimax risk for these two problems, this for all possible values of n, d, and all possible sampling efforts. Along the way, we establish that, in some regimes, recovering the unknown permutation π^* is considerably simpler than estimating the matrix. This is based on a joint work with Alexandra Carpentier (U. Potsdam) and Emmanuel Pilliat (U. Montpellier).