Contribution ID: **20** Type: **Talk**

Kronecker-structured sketching for compressing tensors

We consider the problem of performing low-rank compression through structured sketching for tensors.
In particular, we analyze the theoretical properties of sketchings formed as Kronecker or Khatri-Rao product of random embeddings.
We present new versions of the matrix Chernoff inequality, designed to provide bounds on tensorial structured matrices.
When applied to vectors with Kronecker structure these matrices dramatically reduce the embedding complexity, however in worst case scenario they may lead to very poor embeddings; as we show in the experiments.
For this reason we look for embeddings which preserve the advantages of the tensorial structured ones and which are also Johnson Lindenstrauss transformations.
We conclude by showing that a similar embedding can be obtained by slightly modifying the Kronecker and Khatri-Rao embeddings descripted above.

Primary authors: BUCCI, Alberto (University of Pisa); ROBOL, Leonardo (Università di Pisa)

Presenter: BUCCI, Alberto (University of Pisa)