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Hierarchical correlation reconstruction - between statistics and machine learning

While machine learning techniques are very powerful, they have some weaknesses, like iterative optimization with many local minimums, large freedom of parameters, lack of interpretability and accuracy control. From the other side we have classical statistics based on moments not having these issues, but providing only a rough description. I will introduce and show on various applications (e.g. financial, medical) HCR family of methods combining their advantages: with MSE-optimal moment-like coefficients, but designed such that we can reconstruct (joint) probability distributions from them, also modeled in adaptive/evolving way, or predicted from other information.