Lifting the Curse of Dimensionality – the "lattice" Side of the Story

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Many practical problems in statistics and mathematical finance involve integrals with hundreds or even thousands of dimensions. These integrals often arise from multivariate expected values. In some cases the actual integrals are the goal (e.g., option pricing), while in others only the best parameters for the model are required (e.g., maximum likelihood problems). In this talk I will take you through a tour of recent strategies for tackling these high dimensional integrals, with a focus on "lattice rules", and discuss the challenges that we face while attempting to lift the "curse of dimensionality".