

Title: Particle-based optimisation with the cross-entropy method

Abstract: The cross entropy (CE) method has its origin in rare event simulation. It is based on an importance sampling algorithm for estimating rare event probabilities where the idea is to compute an approximation to an optimal change of measure within a parametric family by minimizing the cross entropy between a target distribution that would allow to estimate the rare event probability with minimum variance and the parametric family. The CE method can also be used to solve combinatorial and continuous optimisation problems by iteratively generating a change of measure that concentrates at the minimiser of the objective function.