

Probabilistic sampling for physics: finding needles in a field of high-dimensional haystacks

ID de Contribution: 14

Type: **Non spécifié**

Renormalization Group Approach for Machine Learning Hamiltonian

mercredi 20 septembre 2023 10:00 (30 minutes)

Reconstructing, or generating, high dimensional probability distributions starting from data is a central problem in machine learning and data sciences.

We will present a method —The Wavelet Conditional Renormalization Group —that combines ideas from physics (renormalization group theory) and computer science (wavelets, Monte-Carlo sampling, etc.). The Wavelet Conditional Renormalization Group allows reconstructing in a very efficient way classes of high dimensional distributions and the associated Hamiltonians hierarchically from large to small length scales. We will present the method and then show its applications to data from statistical physics and cosmology.

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Classification de Session: Result Communication