

Opportunities and Challenges in Enhancing Sampling with Learned Transport Maps

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Deep generative models parametrize very flexible families of distributions able to fit complicated datasets of images or text. These models provide independent samples from complex high-distributions at negligible costs. On the other hand, sampling exactly a target distribution, such as Boltzmann distributions and Bayesian posterior, is typically challenging: either because of dimensionality, multi-modality, ill-conditioning or a combination of the previous. In this talk, I will review recent works trying to enhance traditional inference and sampling algorithms with learning. I will present in particular flowMC, an adaptive MCMC with Normalizing Flows along with first applications and remaining challenges.