

Diffusion Model的知识整理

论文：

1. Generative Modeling by Estimating Gradients of the Data Distribution[NIPS2019]
2. Denoising Diffusion Probabilistic Models[NIPS2020]
3. Diffusion Models Beat GANs on Image Synthesis[NIPS2021]
4. SCORE-BASED GENERATIVE MODELING THROUGH STOCHASTIC DIFFERENTIAL EQUATIONS[ICLR2021]
5. DENOISING DIFFUSION IMPLICIT MODELS[ICLR2021]
6. ANALYTIC-DPM: AN ANALYTIC ESTIMATE OF THE OPTIMAL REVERSE VARIANCE IN DIFFUSION PROBABILISTIC MODELS[ICLR2021]
7. Estimating the Optimal Covariance with Imperfect Mean in Diffusion Probabilistic Models[ICML2022]
8. Diffusion Models for Adversarial Purification[ARXIV2022]
9. DPM-Solver: A Fast ODE Solver for Diffusion Probabilistic Model Sampling in Around 10 Steps[NIPS2022]
10. Diffusion models for medical image analysis: A comprehensive survey[ARXIV2022]
11. More Control for Free! Image Synthesis with Semantic Diffusion Guidance[WACV2022]

列表：

方法	简单描述	链接
DDPM	DDPM的视频讲解，入门版	https://www.bilibili.com/video/BV1pD4y1179T/?is_story_h5=false&p=1&share_from=ugc&share_medium=android&share_plat=android&share_bcd1-405e-8a74-16f2415ed480&share_source=WEIXIN&share_tag=s_i&timestamp=1669481318&unique_id=
NCSE, DDPM, SDE	医学图像综述	https://arxiv.org/abs/2211.07804
DDPM	DDPM的原始论文(2020)	https://proceedings.neurips.cc/paper/2020/hash/4c5bcfec8584af0d967f1ab10179ca4b
DDPM	DDPM的推导	https://spaces.ac.cn/archives/9164
SDE	Song的论文，SDE提出者	https://arxiv.org/abs/2011.13456

NCSE	2019年的论文, NCSE提出者	https://proceedings.neurips.cc/paper/2019/hash/3001ef257407d5a371a96dcd947c7d9
ODE/SDE	ODE和SDE理论	https://users.aalto.fi/~ssarkka/pub/sde_book.pdf
SDE	Diffusion Models和SDE的联系以及Score Models和SDE的联系	https://zhuanlan.zhihu.com/p/499336380
MCMC	由于在看SDE的论文时遇到, 因此学习MCMC采样。	https://zhuanlan.zhihu.com/p/30003899
DDPM	为什么DDPM的加速都在做推理的加速?	https://www.zhihu.com/question/560460223/answer/2720117989
SDE	Fokker-Planck方程	https://zhuanlan.zhihu.com/p/535688931
SDE	伊藤引理	https://saulnoble.github.io/2020/02/28/yi-teng-yin-li-de-tui-dao-guo-cheng/
DDPM	路橙学长在知乎的回答	https://www.zhihu.com/question/536012286/answer/2533146567
ELBO		https://jaketae.github.io/study/elbo/

	关于 ELBO->DDPM 的学习	
DDIM	知乎关于 DDIM 的讲解	https://zhuanlan.zhihu.com/p/565698027
多变量分布	用于 DDIM 的推导	https://face2ai.com/Math-Probability-3-7-Multivariate-Distributions-P2/
MARL	查看高斯分布的贝叶斯定理	https://github.com/wwkenwong/book/blob/master/PRML%E4%B8%AD%E6%96%87%E1%E5%BC%8F%E8%AF%86%E5%88%AB%E4%B8%8E%E6%9C%BA%E5%99%A8%A0.pdf
欧拉积分	用于 DDIM 的推导	https://zhuanlan.zhihu.com/p/63225812
DDPM	DDPM 从 ELBO 推导至 MSE 损失	https://zhuanlan.zhihu.com/p/565901160
SDE	Score-based SDE 理论推导	https://zhuanlan.zhihu.com/p/589106222
Analytic-DPM	解析 Analytic-DPM 文章，上篇	https://kexue.fm/archives/9245
Extended-Analytic-DPM	解析 Analytic-DPM 文章，下篇	https://kexue.fm/archives/9246
高斯分布的最大似然估计	给出了高斯分布的最大似然估计，相当于一个工具	https://zlearning.netlify.app/computer/prml/prmlch2dot3-maximum-likelihood-for-gauss

条件生成模型	这个是 diffusion model能够部署的核心关键	https://kexue.fm/archives/9257
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