Statistics Seminar

Department of Mathematics and Statistics

DATE:	Thursday, November 2, 2023
TIME:	1:15pm – 2:15pm
LOCATION:	WH 100E
SPEAKER:	Geran Zhao, Binghamton University
TITLE:	Denoising Diffusion Probabilistic Models

Abstract

The paper presents high quality image synthesis results using diffusion probabilistic models, a class of latent variable models inspired by considerations from nonequilibrium thermodynamics. The best results are obtained in this paper by training on a weighted variational bound designed according to a novel connection between diffusion probabilistic models and denoising score matching with Langevin dynamics, and our models naturally admit a progressive lossy decompression scheme that can be interpreted as a generalization of autoregressive decoding. On the unconditional CIFAR10 dataset, we obtain an Inception score of 9.46 and a state-of-the-art FID score of 3.17. On 256×256 LSUN, we obtain sample quality similar to ProgressiveGAN.