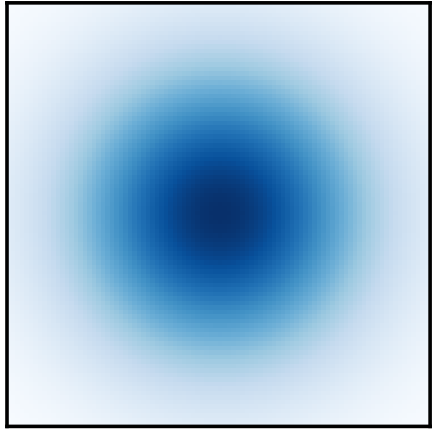
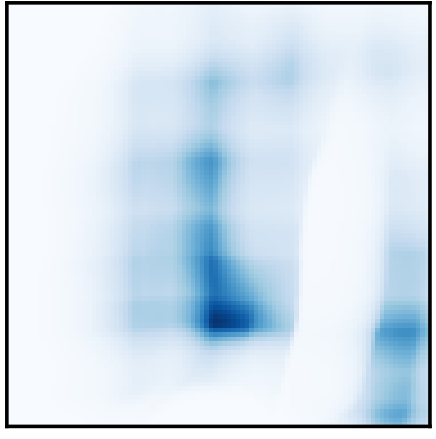
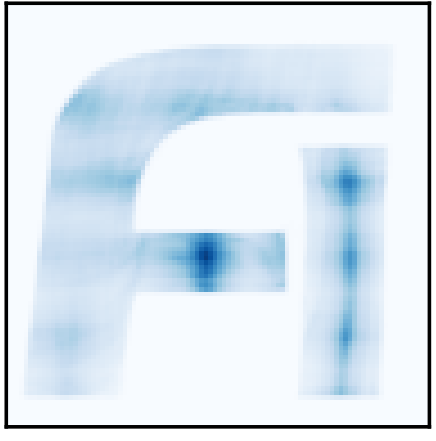
Outline

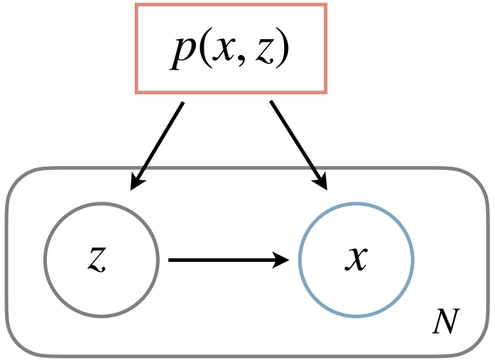
Normalizing flows (and some other models)

Invertible transformations

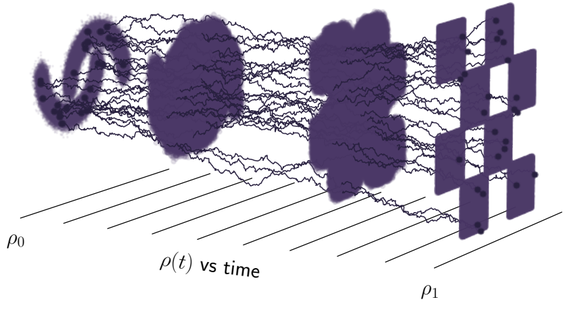

Why (deep) generative modeling?

What is it, and what can it do for you?



Variational auto encoders

Latent-variable modeling, and compression is all you need



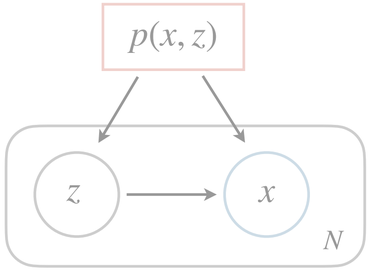
Diffusion models

Models based on iterative refinement

Outline

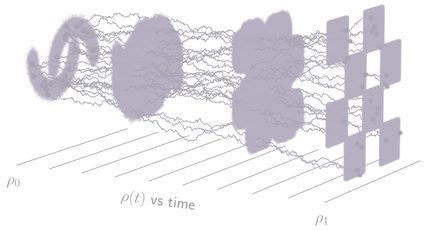
Why (deep) generative modeling?

What is it, and what can it do for you?



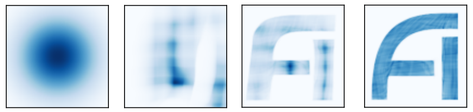
Variational auto encoders

Latent-variable modeling, and compression is all you need



Diffusion models

Models based on iterative refinement



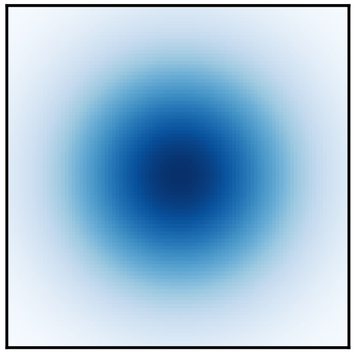
Normalizing flows (and some other models)

Invertible transformations

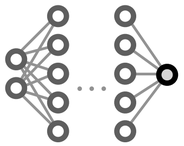
[Rezende & Mohamed 2015]

Normalizing flows

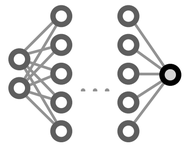
Base density



$\pi(u)$



$\theta = f(u)$



One-to-one transformation

Tractable f^{-1} and $\det \nabla f$

(IAIFI logo)

Target density

$$p(\theta) = \pi\left(f^{-1}(\theta)\right) \left|\det \nabla f\right|^{-1}$$