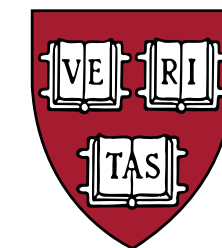


# An introduction to generative modeling

*with applications in physics*

Siddharth Mishra-Sharma



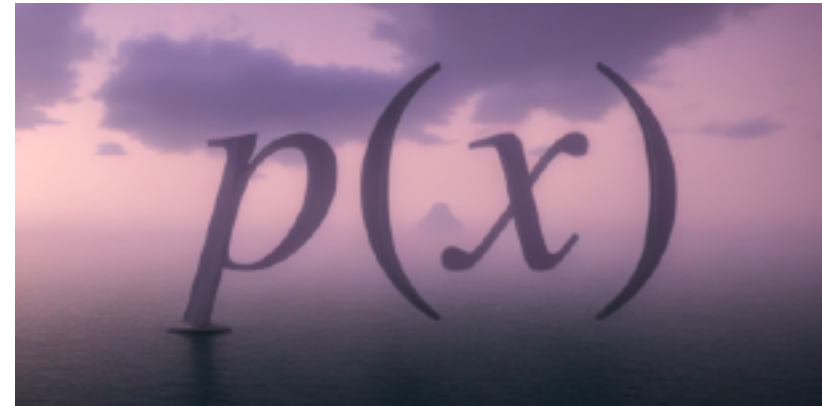
NSF AI Institute for Artificial Intelligence  
and Fundamental Interactions (IAIFI)

IAIFI Summer School

August 8, 2023

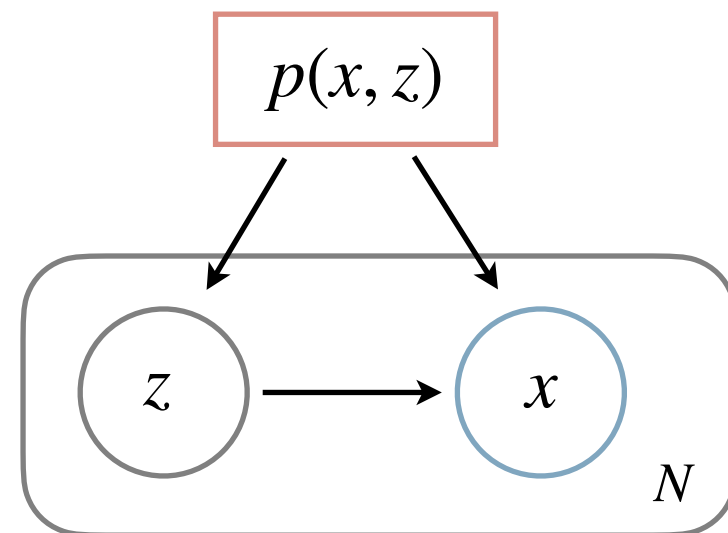


# Outline



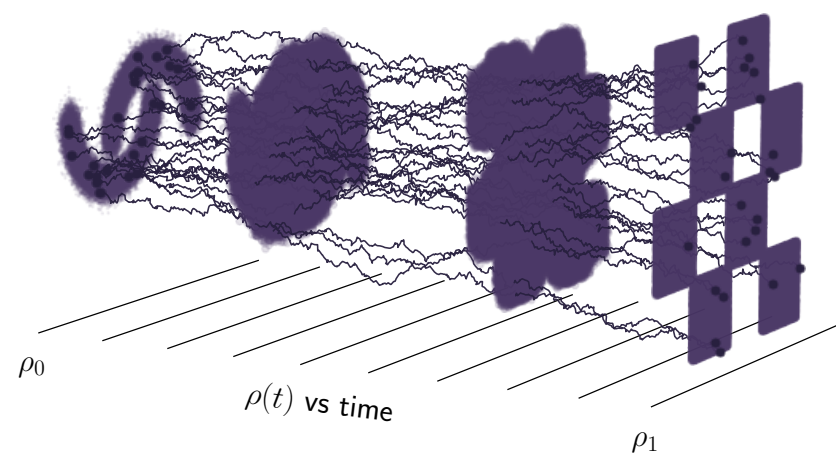
## Why (deep) generative modeling?

*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*