

Siddhant Mishra-Sharma (MIT/AI FI) Summer School

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Diffusion models: overview

$$x_{t-1} \sim p(x_{t-1} \mid x_t)$$



Reverse process (*denoising*)

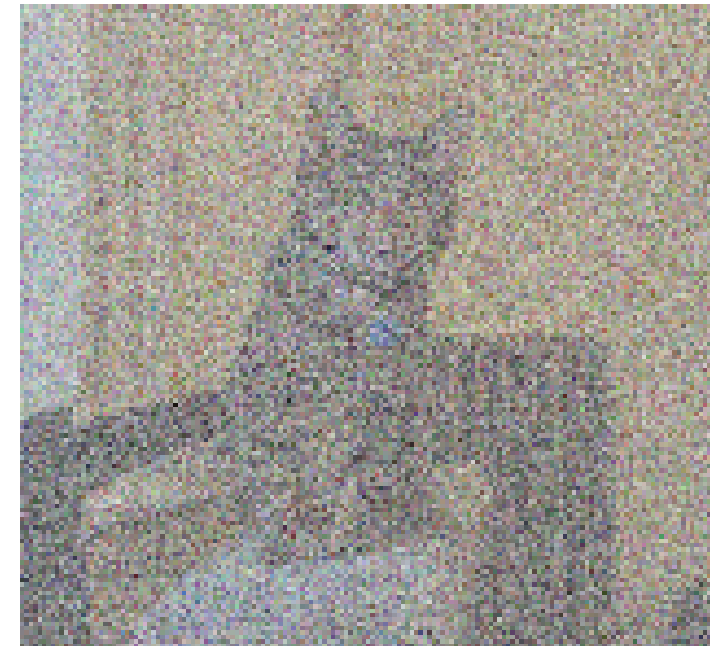
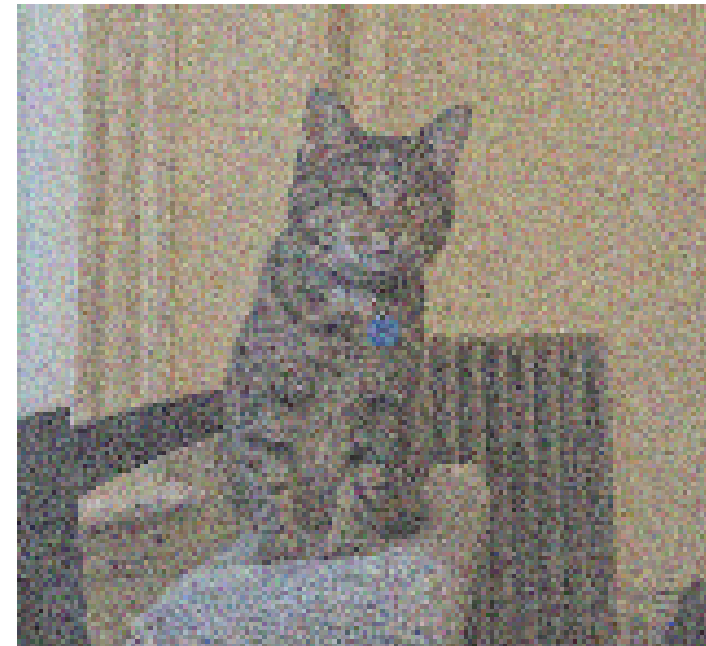
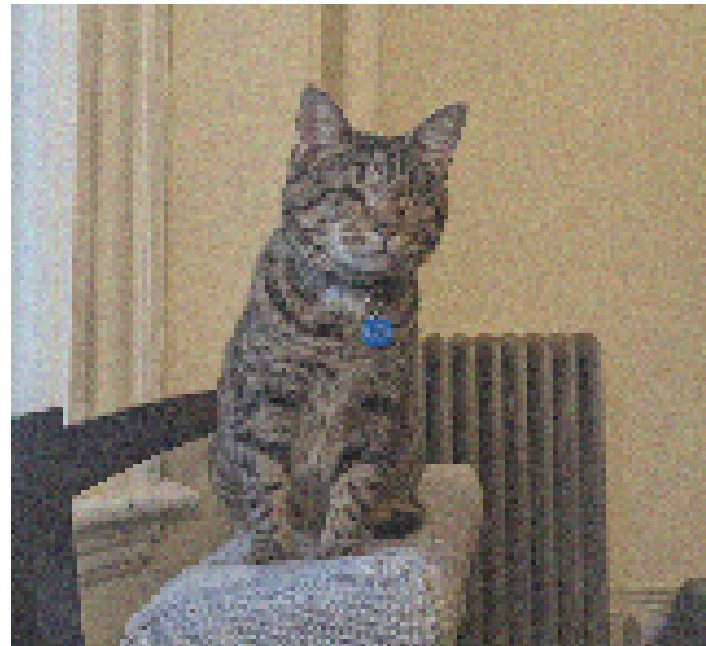
Prompt: *"A cat perched on an Ikea Poang chair"*



$\text{image} \sim p(\text{image} \mid \text{text prompt})$

Forward process (*adding noise*)

$$x(t = 1) \sim \mathcal{N}(0, 1)$$



$$x(t = 0) \sim p(x)$$

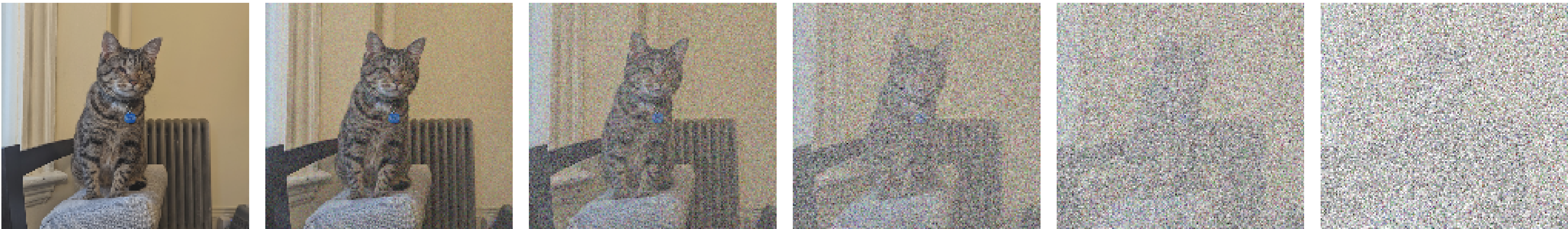


Diffusion models: overview

Forward process (*adding noise*)

$x(t = 0) \sim p(x)$

$x(t = 1) \sim \mathcal{N}(0, 1)$



$x_{t-1} \sim p(x_{t-1} \mid x_t)$

Reverse process (*denoising*)

Prompt: “A cat perched on an Ikea Poang chair”

$\text{image} \sim p(\text{image} \mid \text{text prompt})$

Towards diffusion: hierarchical VAEs

