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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”*

image ~ p(image | 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)*

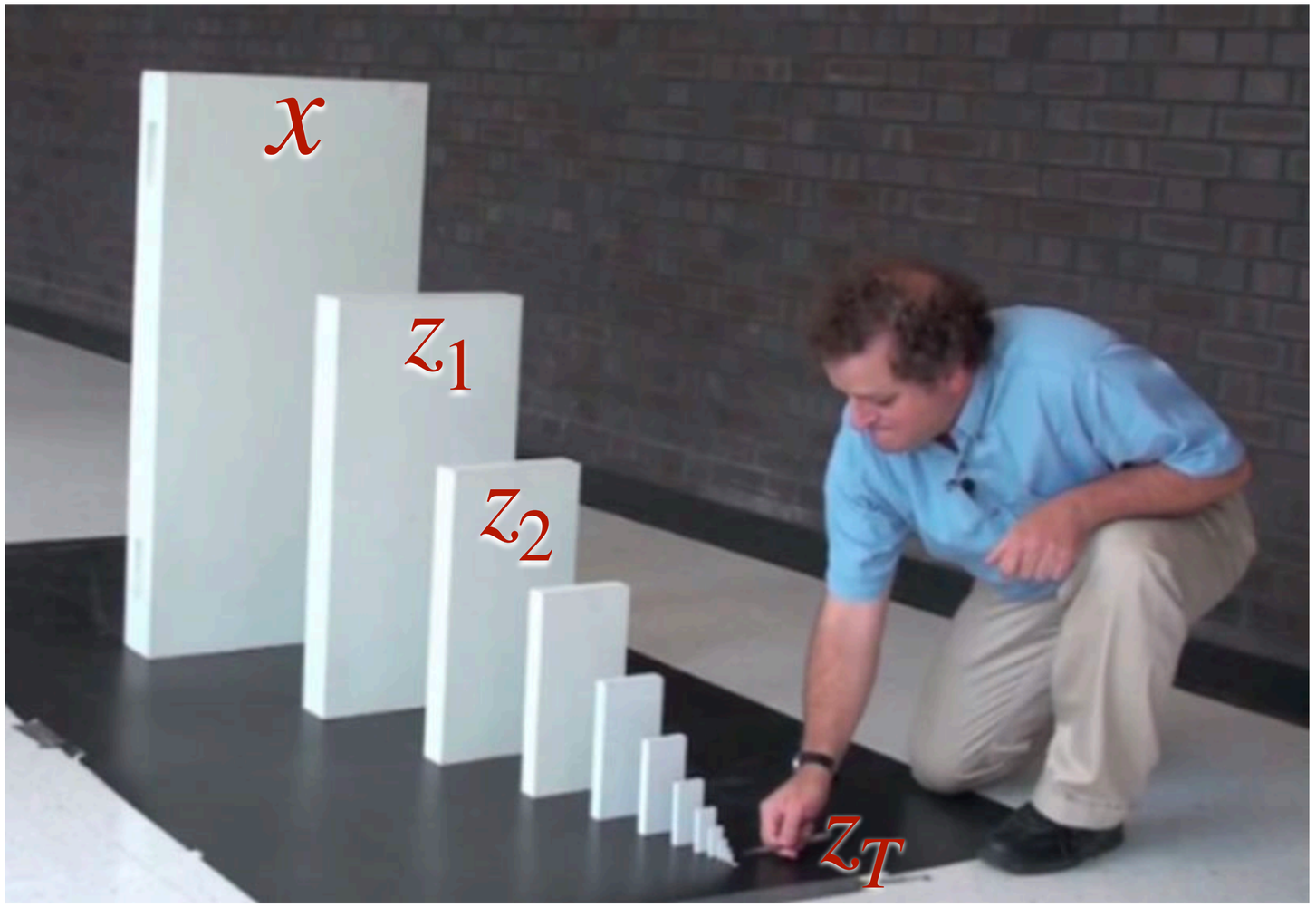
$x(t=0) \sim p(x)$

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

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

Reverse process *(denoising)*

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

image ~ *p*(image | text prompt)

Towards diffusion: hierarchical VAEs