

Generative models

Supervised vs Unsupervised

Supervised learning

- Take (x,y) pairs

Unsupervised learning

- Take x alone

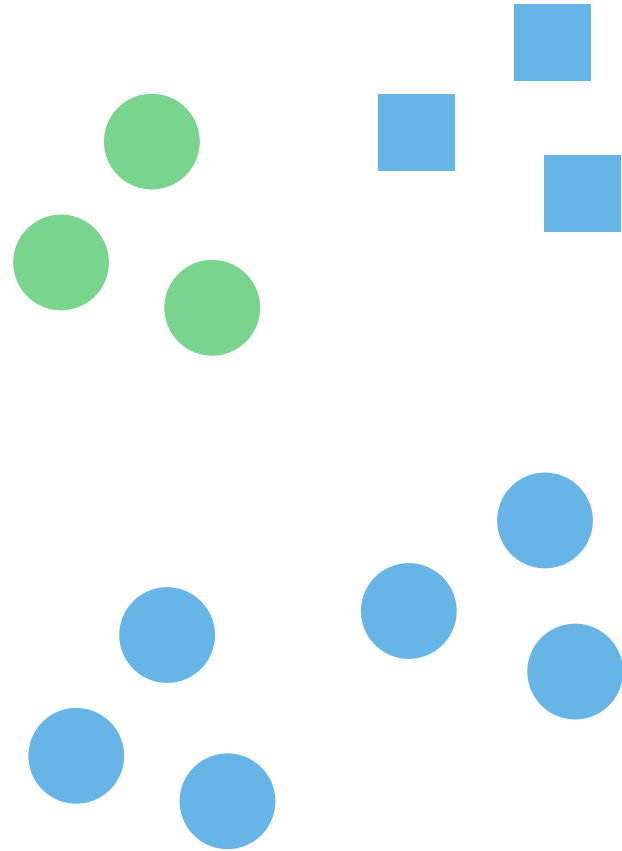
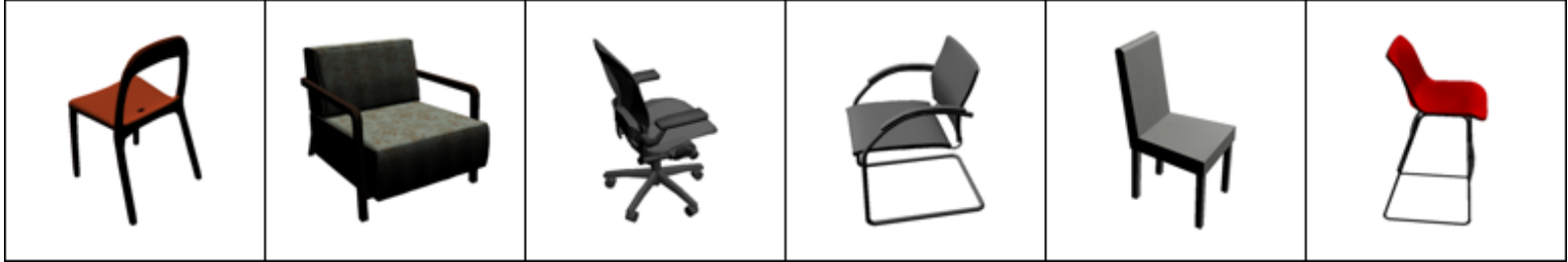


Image generation

Chairs (type, view, orientation)



Classifier

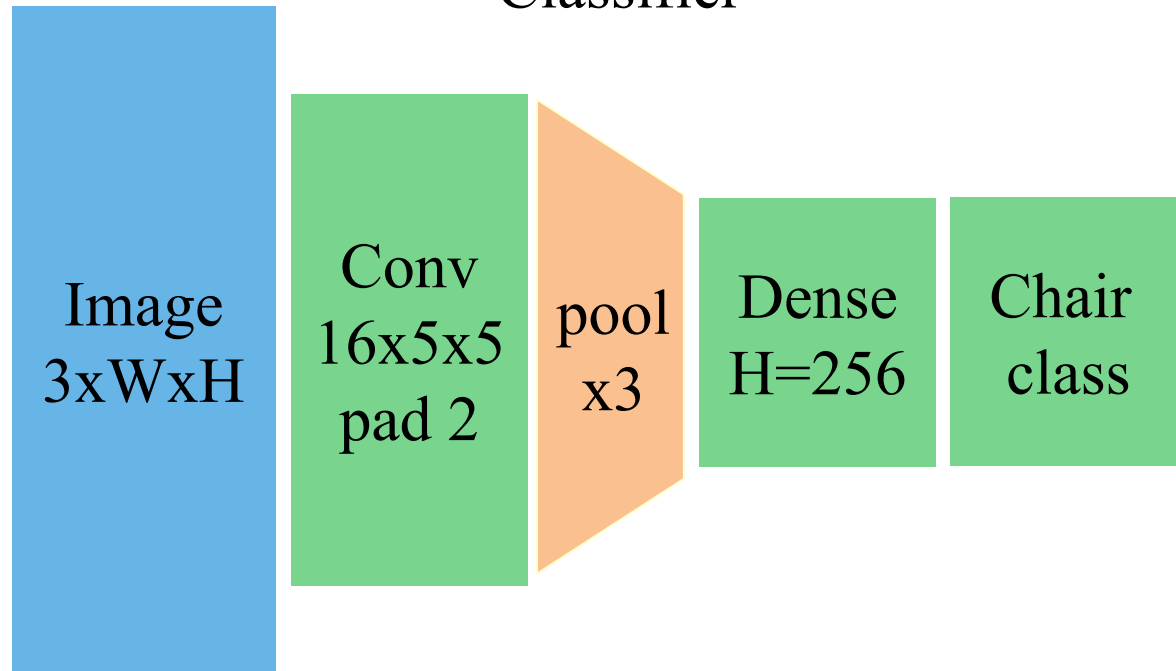
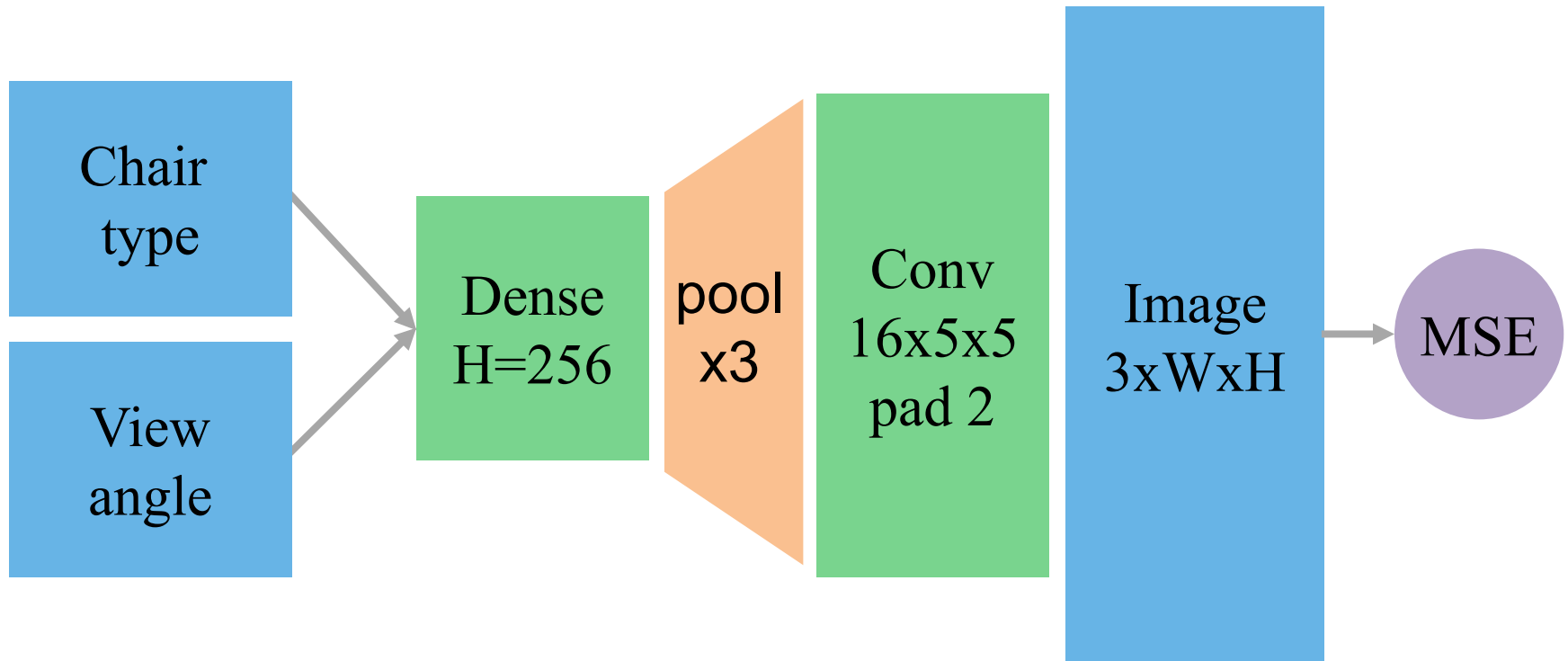


Image generation

Generator



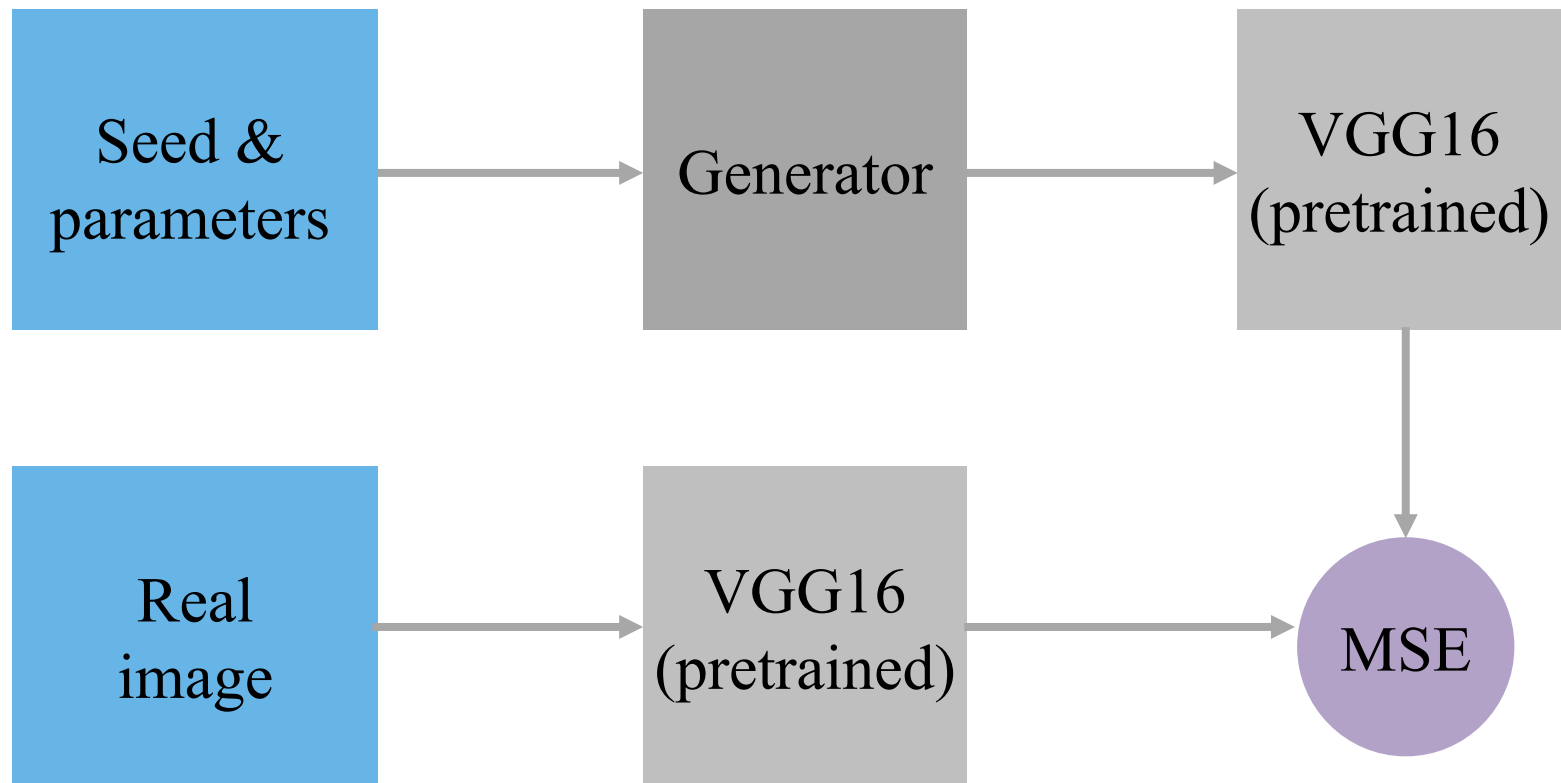
Mean Squared Error

Pixelwise MSE:

- A «**cat on the left**» is closer to «**dog on the left**» than to «**cat on the right**»
- We may want to avoid that effect
- Can we obtain image representation that is less sensitive to small shifts?

Problem: MSE sucks at this task.
Ideas?

Sketch: using pre-trained nets



$$L = \|f(img) - f(Gen(seed))\|$$