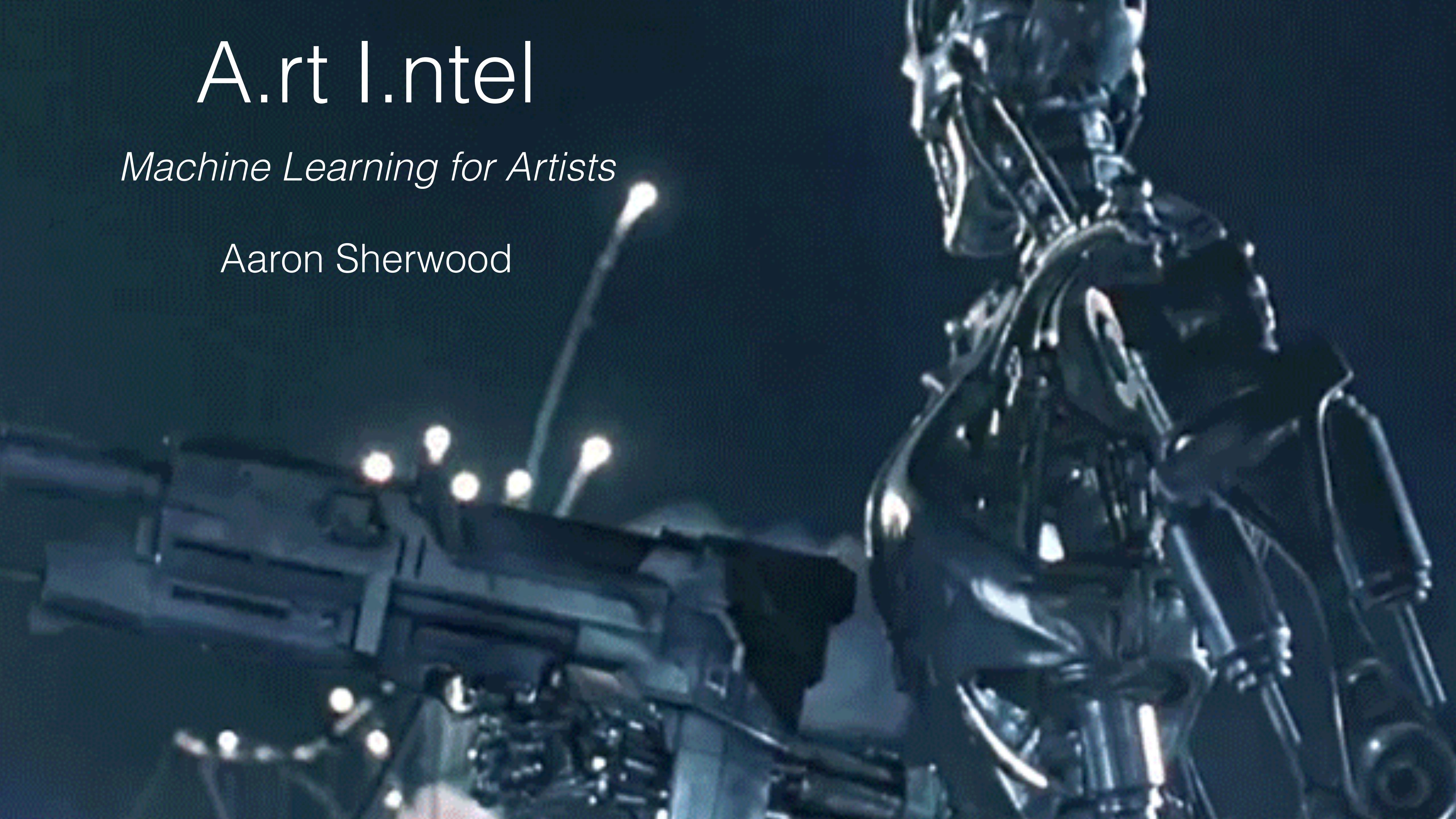


A.rt I.ntel

Machine Learning for Artists

Aaron Sherwood

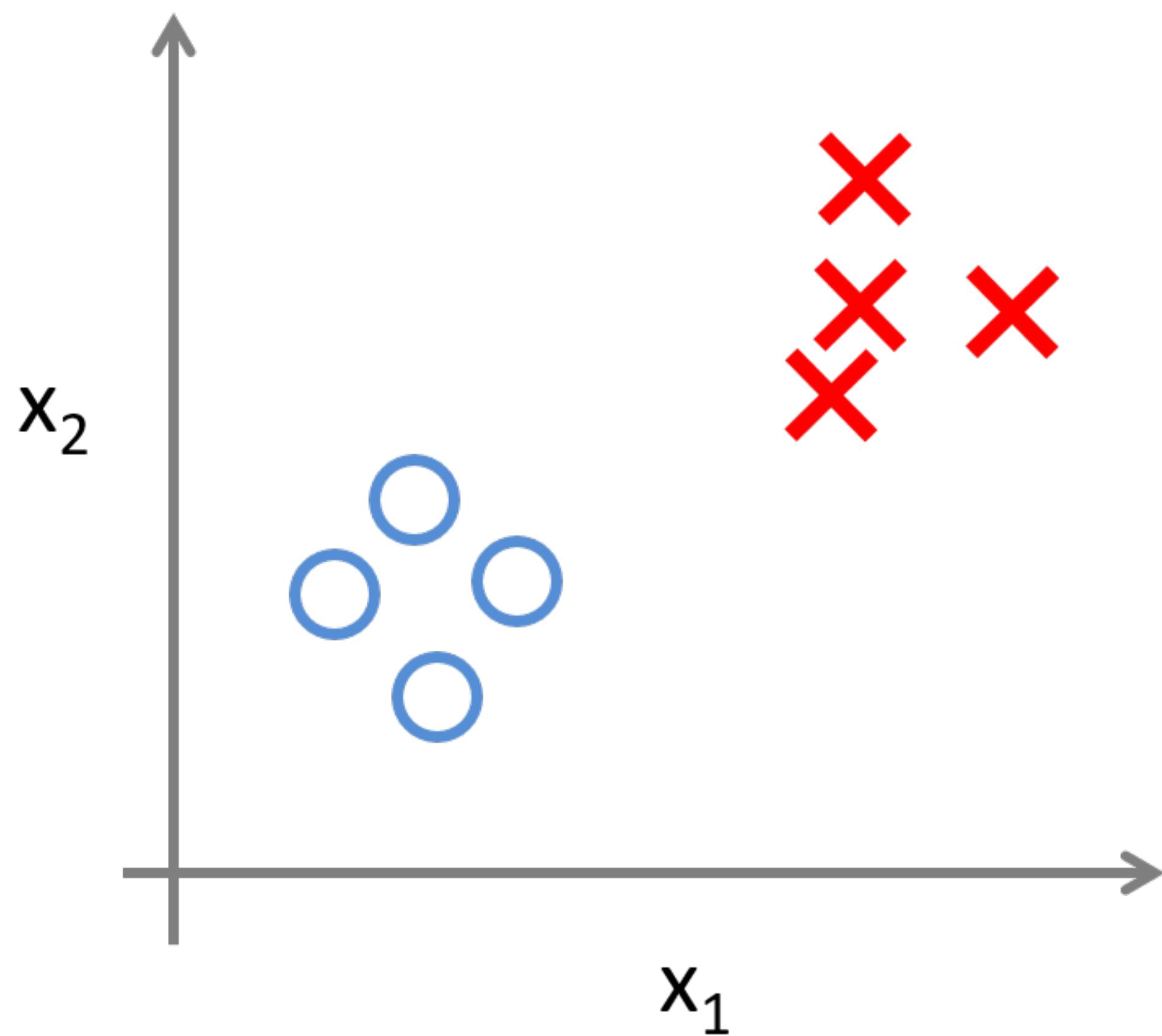


Introductions

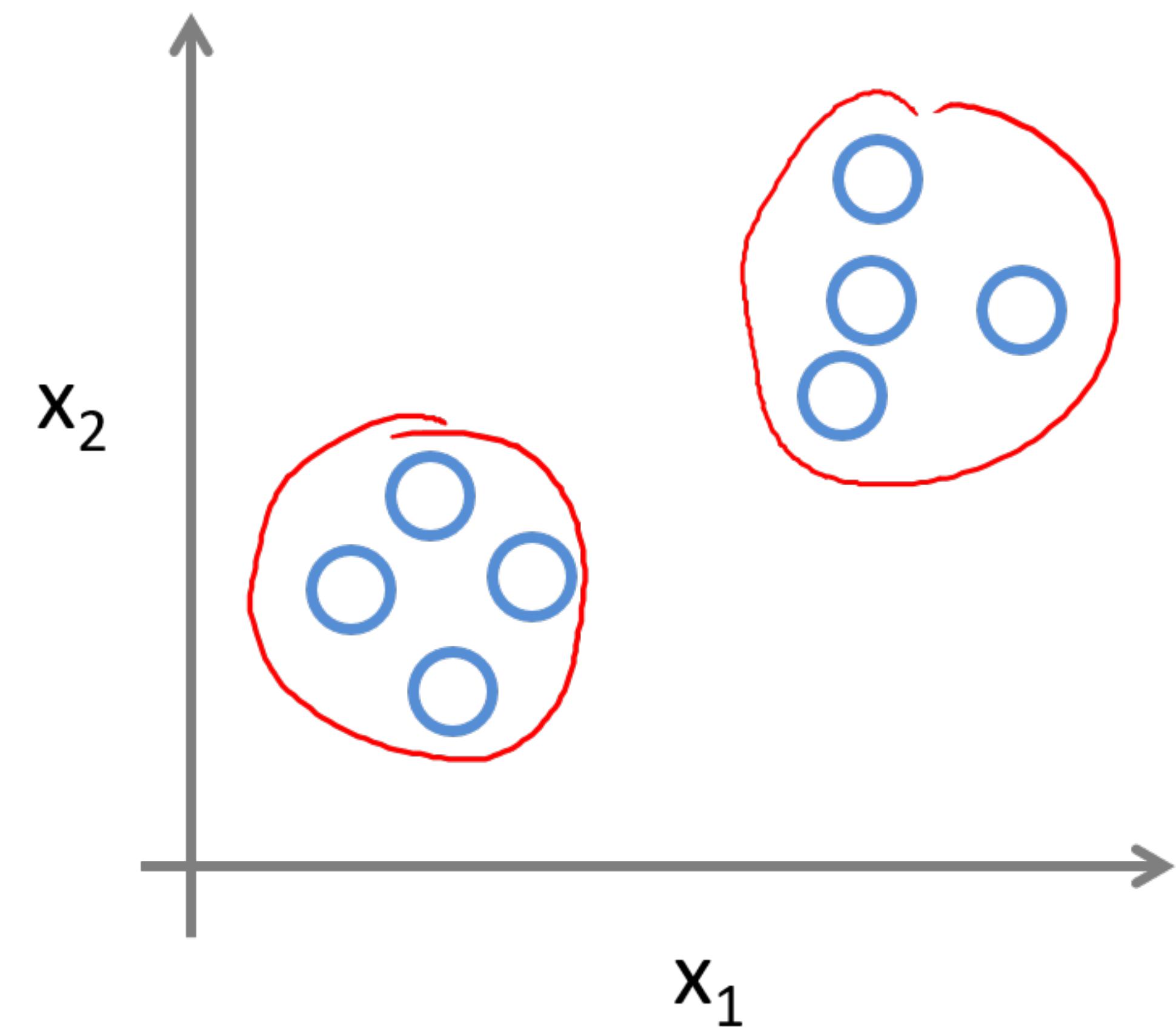
Types of Machine Learning

- Supervised Learning
- Unsupervised Learning
- Reinforcement Learning

Supervised Learning



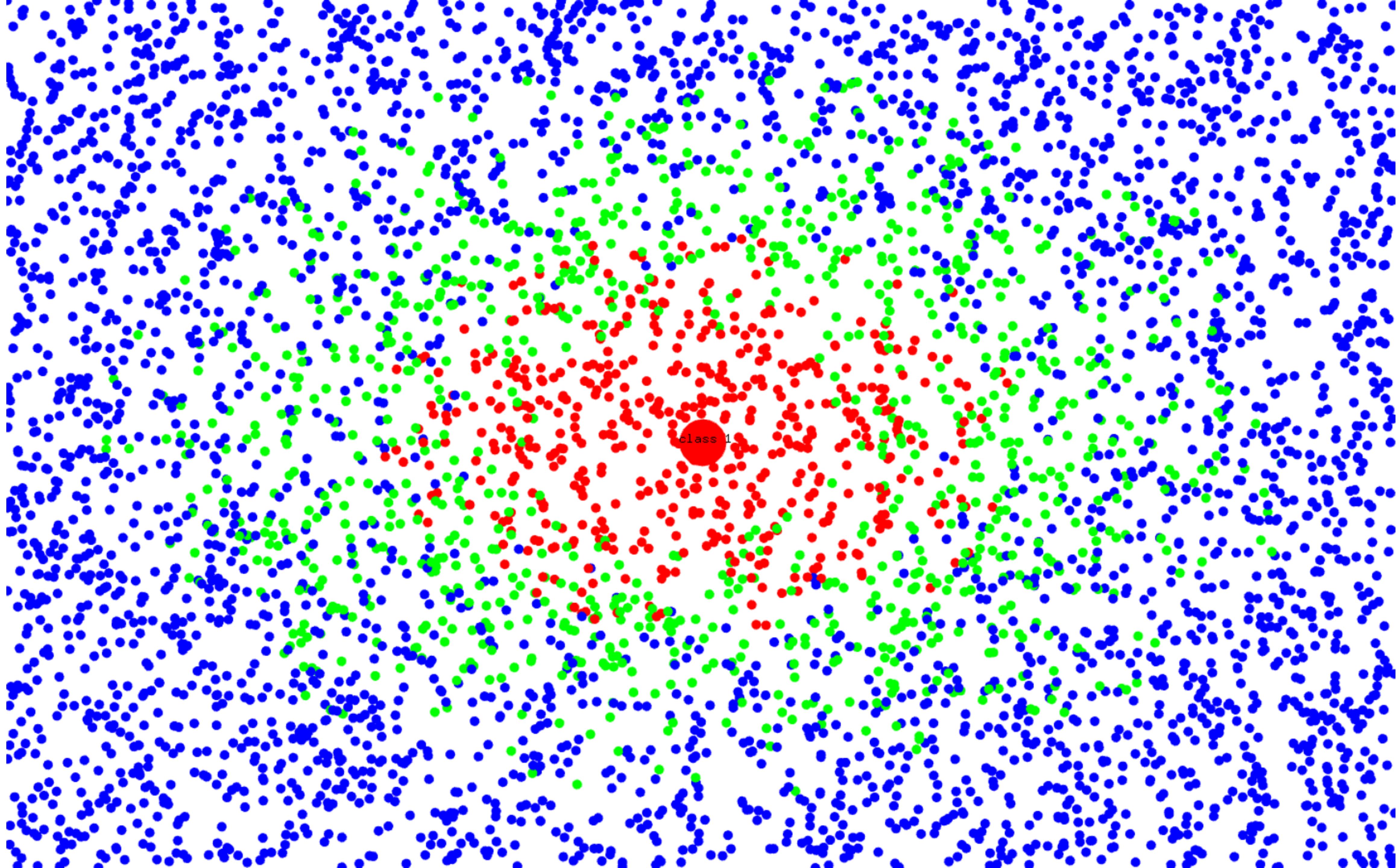
Unsupervised Learning

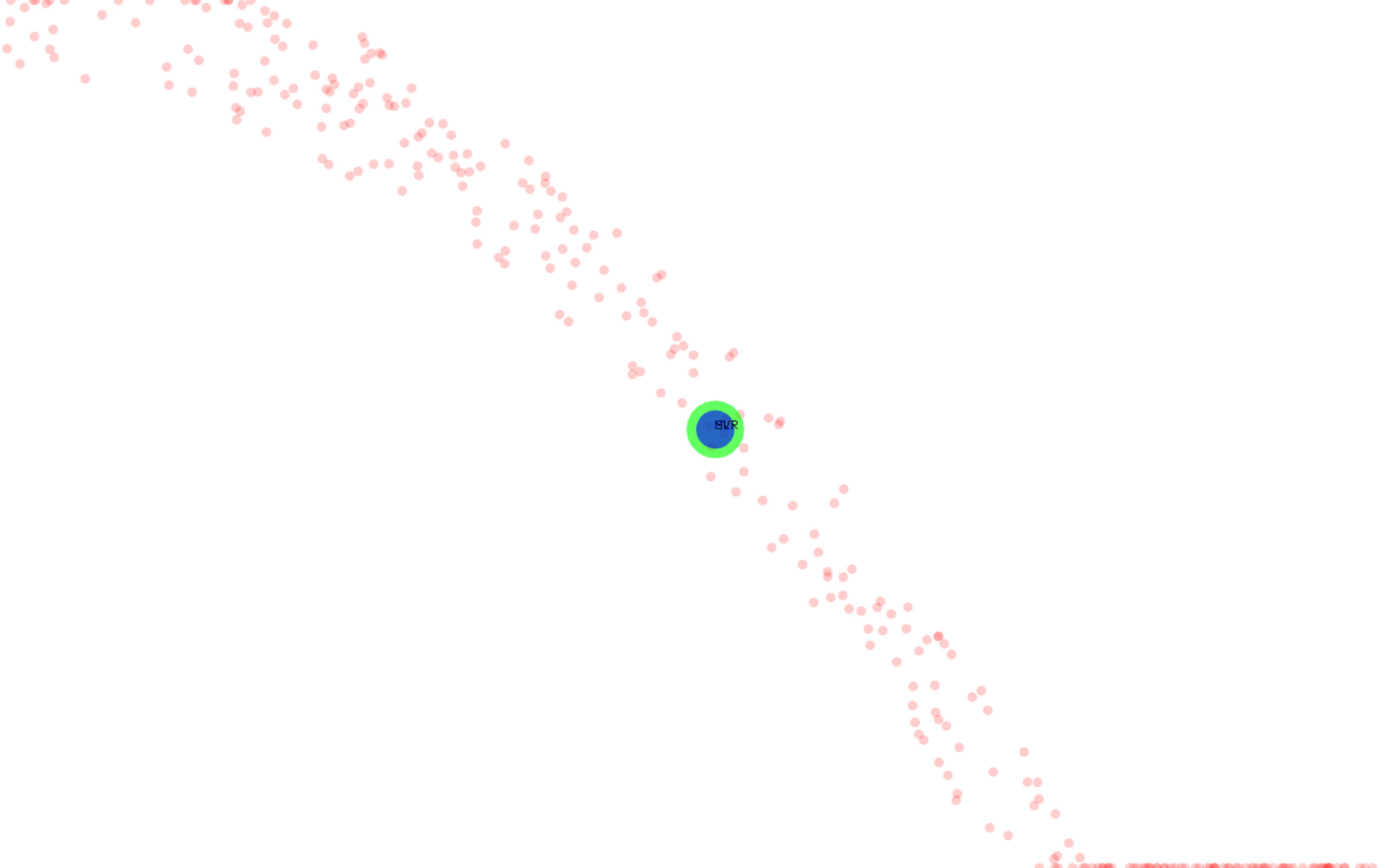


Reinforcement Learning



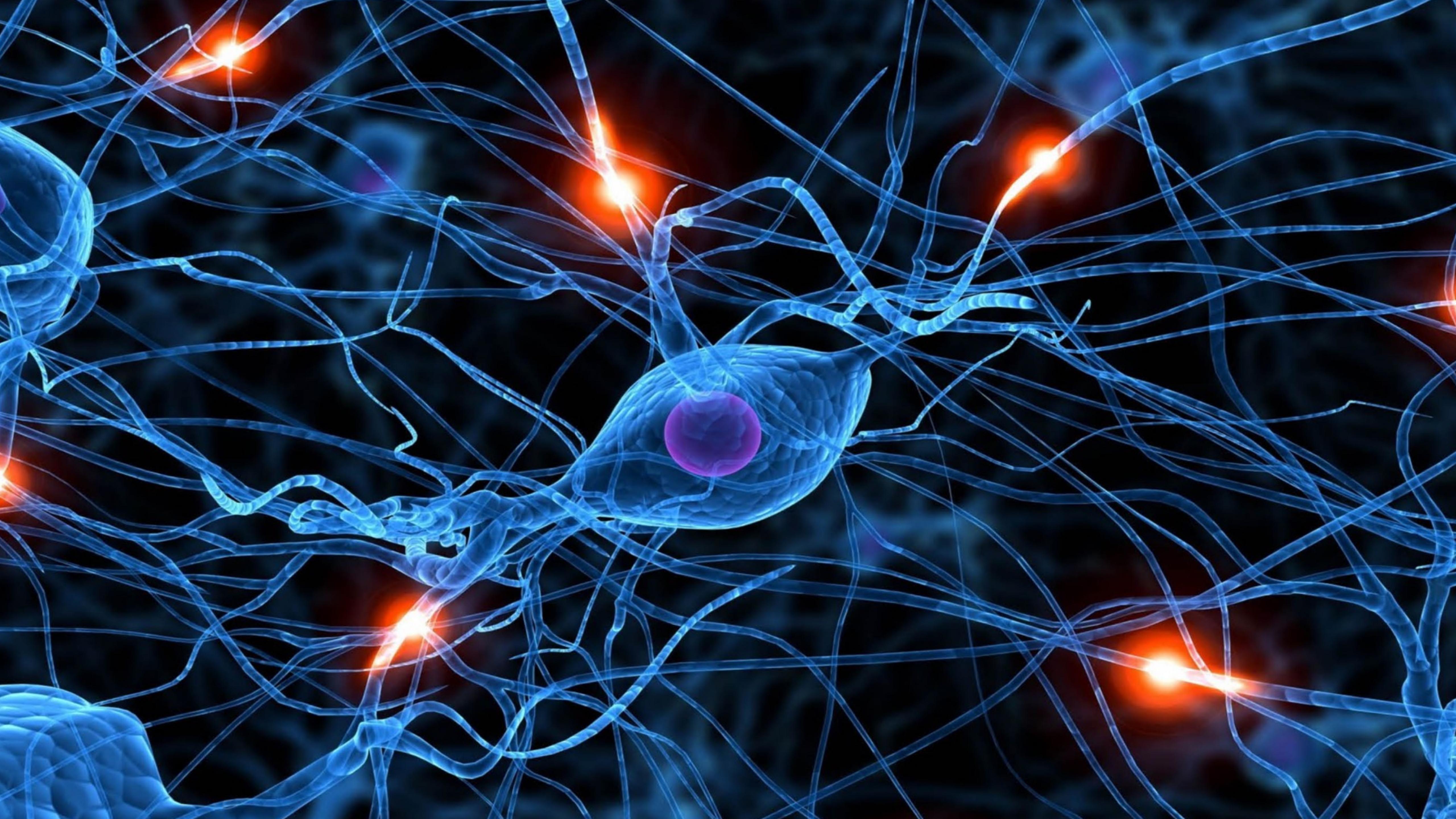
1. Interaction







2. Low Level Neural Nets & Speculative Design



Neural Nets

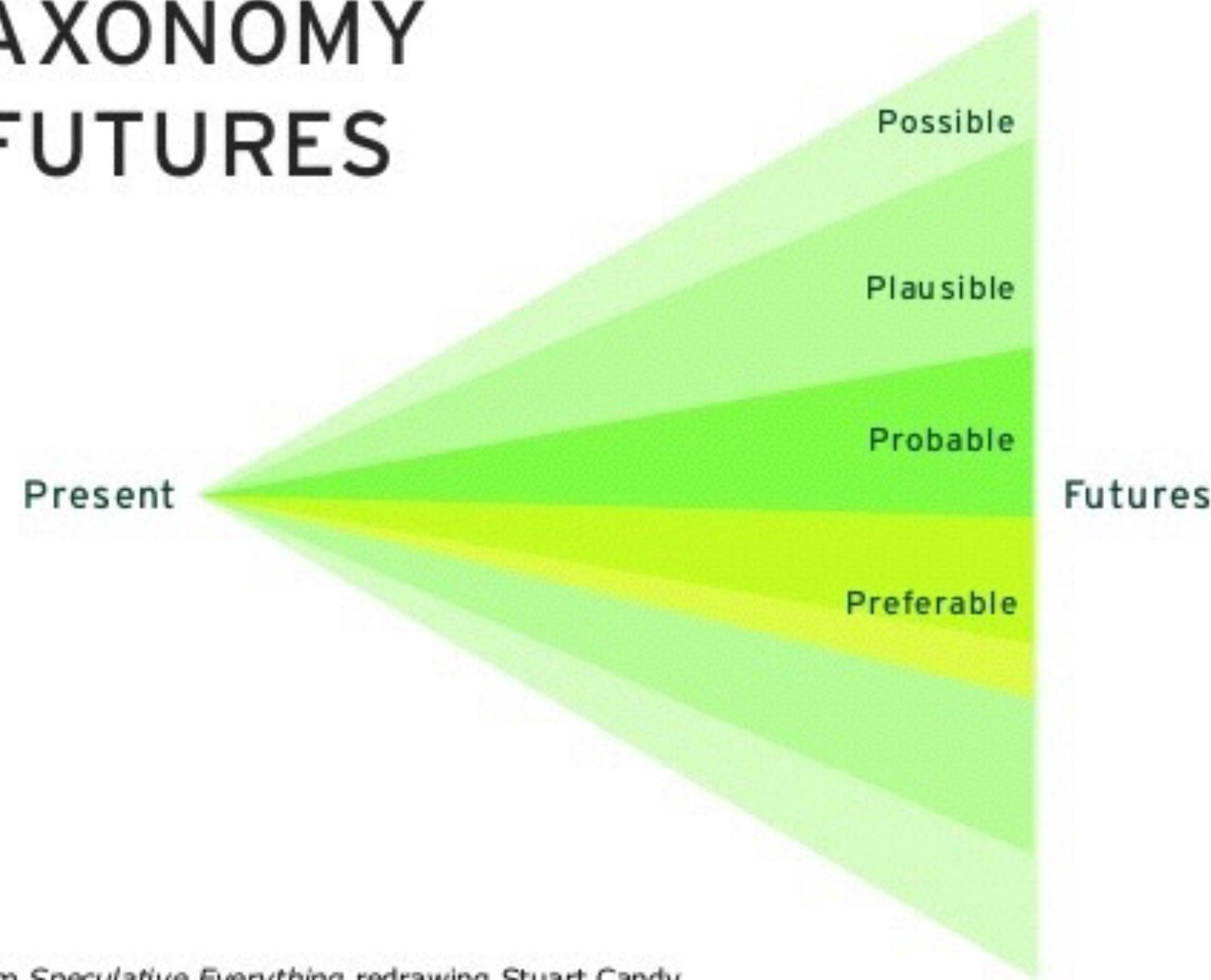
1. neural net simple diagram http://ml4a.github.io/demos/f_neural_net/
2. one neuron http://ml4a.github.io/demos/f_neuron/
3. mnist input http://ml4a.github.io/demos/f_mnist_input/
4. weights http://ml4a.github.io/demos/f_weights_analogy/
5. mnist weights: http://ml4a.github.io/demos/f_mnist_weights/

Speculative Design

"When people think of design, most believe it is about problem solving... There are other possibilities for design: one is to use design as a means of speculating how things could be - speculative design."

Dunno + Raby

A TAXONOMY OF FUTURES



Redrawn from *Speculative Everything* redrawing Stuart Candy

Slaughter bots

3. Implementations

A. Visuals

Convolutional Neural Networks

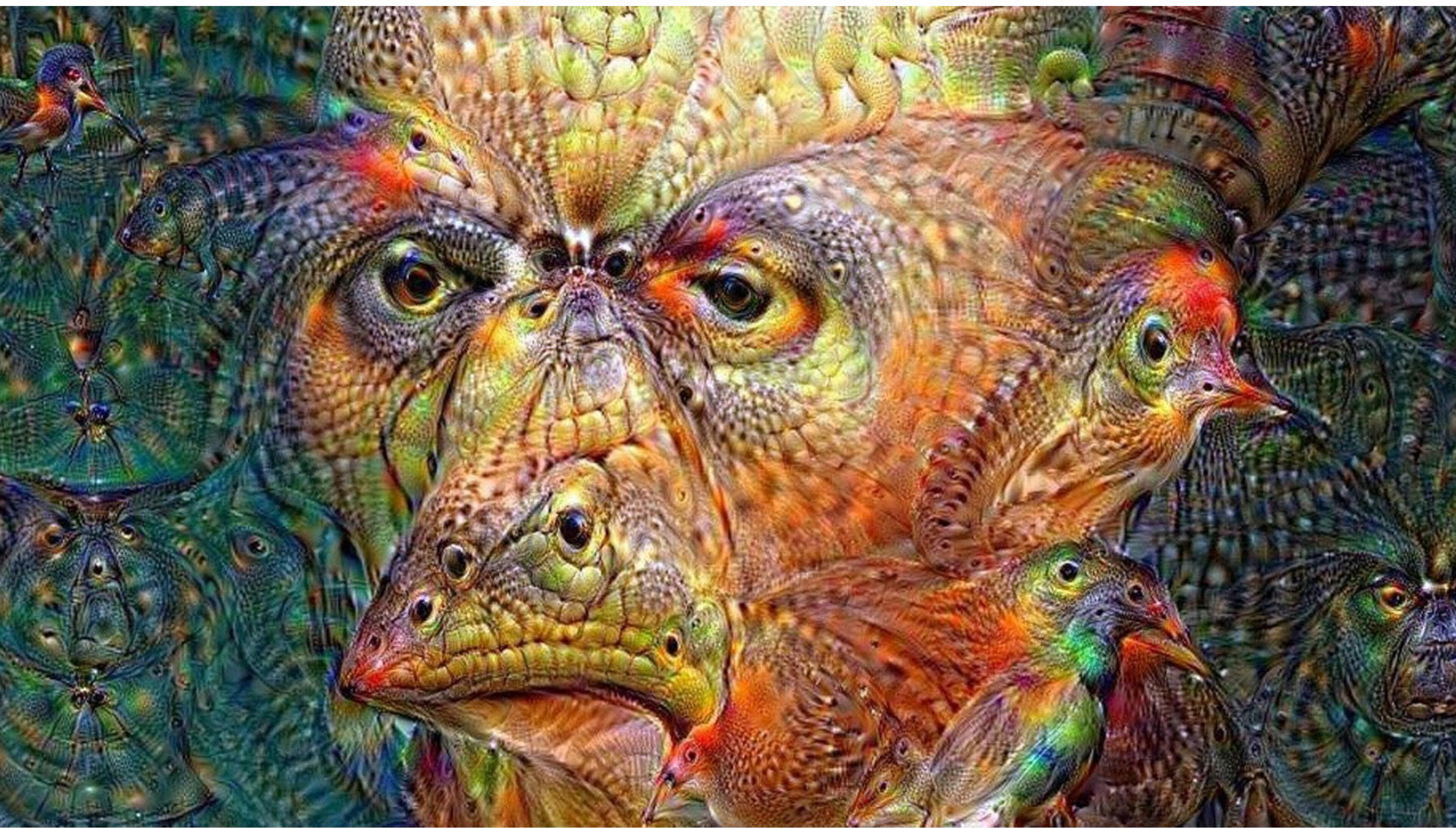
<http://ml4a.github.io/demos/convolution/>

Deep dream

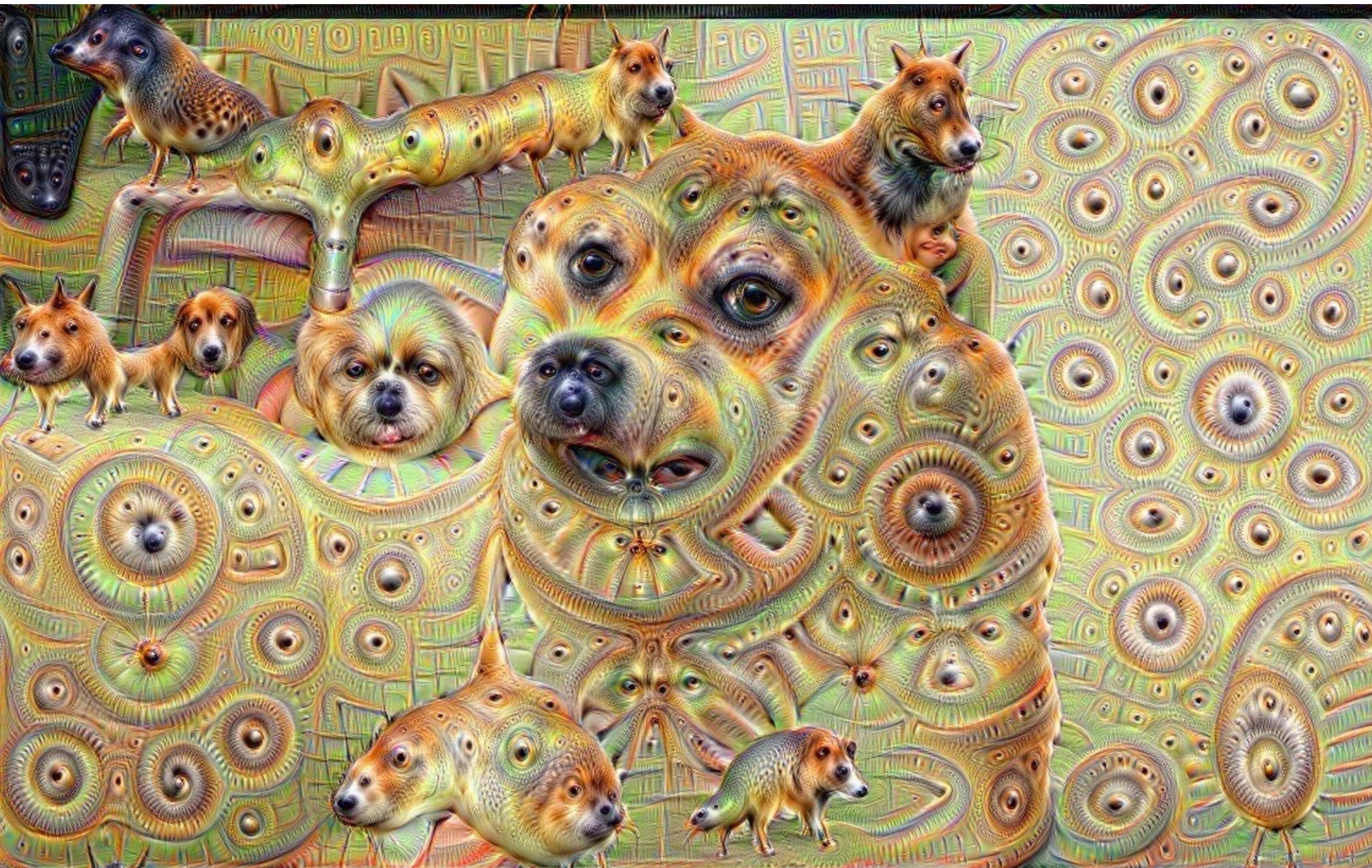
generated by convolutional neural network (june 2015)

inceptionism













inceptionism gallery

zoomable

trump

Style Transfer

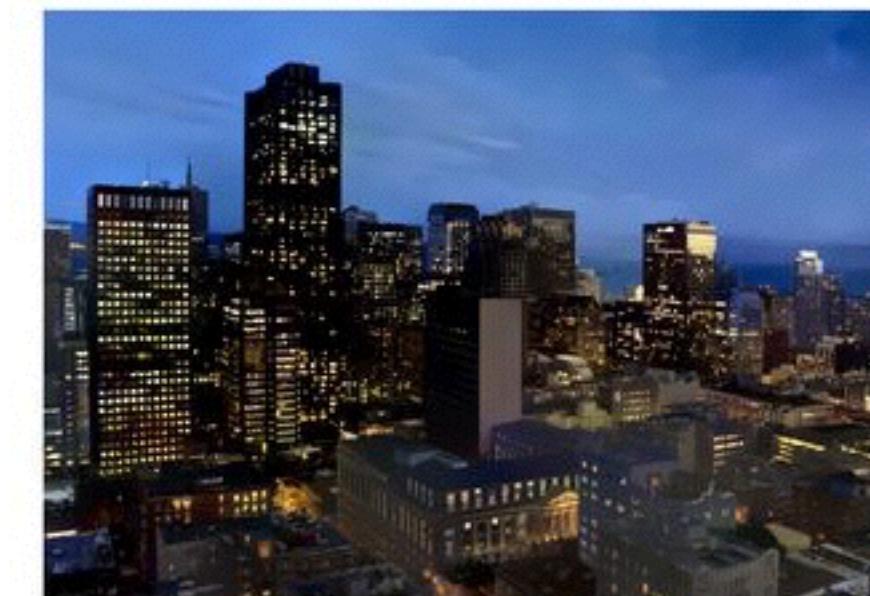




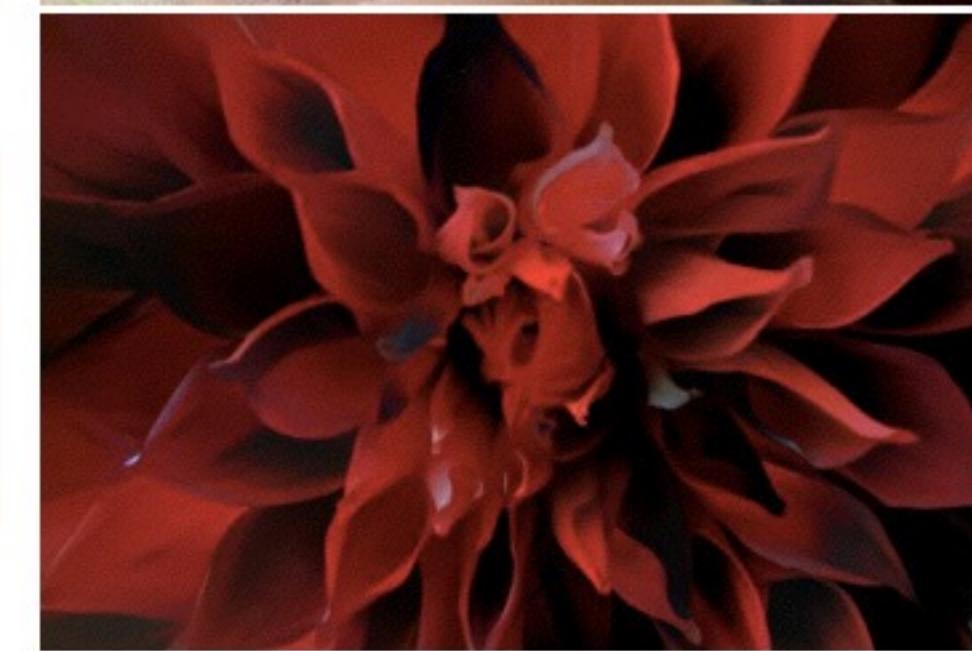
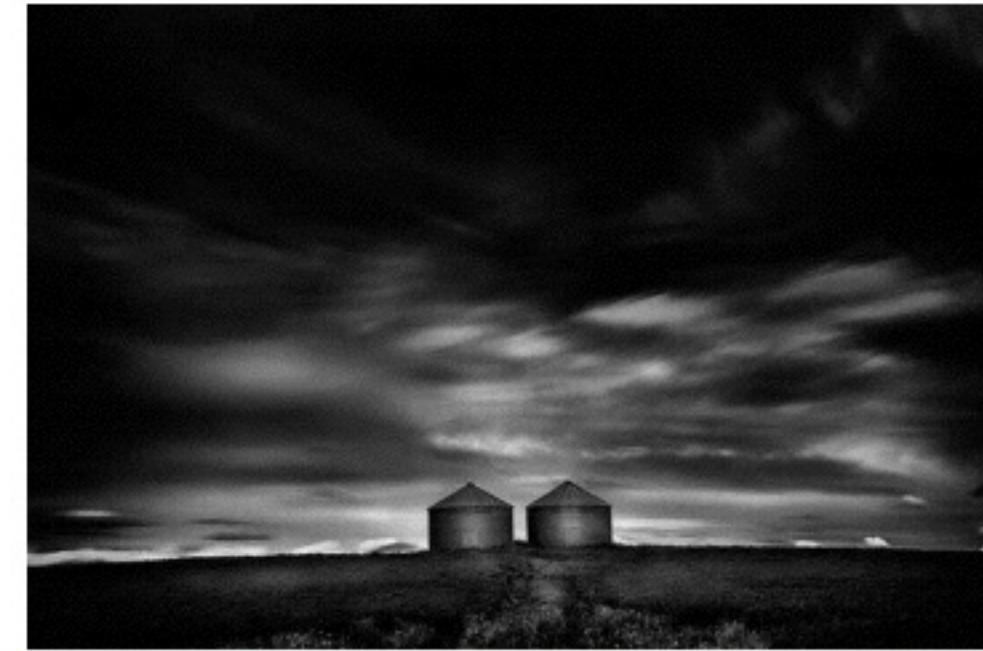
Original photo



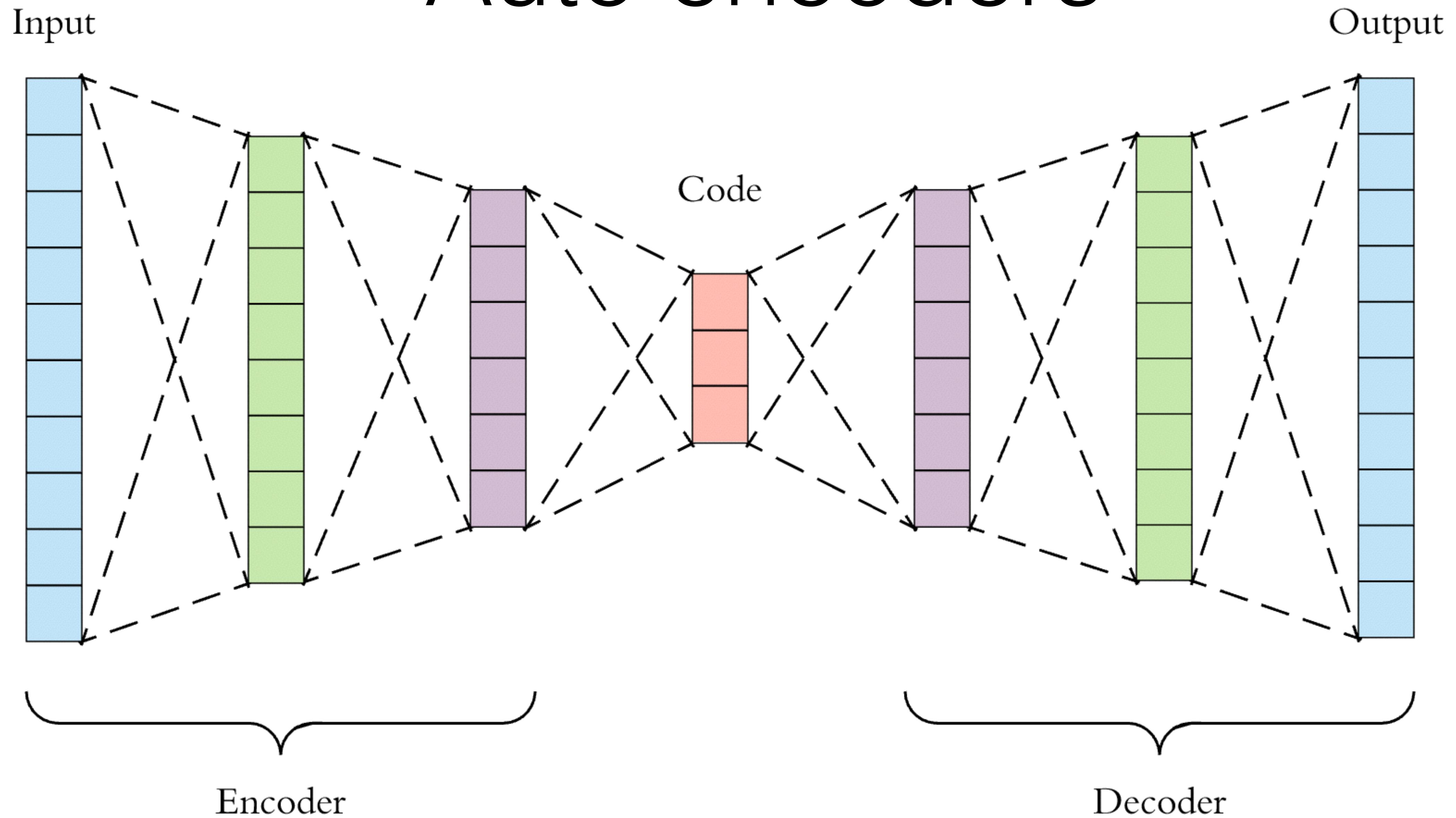
Reference photo



Result



Auto encoders



11

22

22

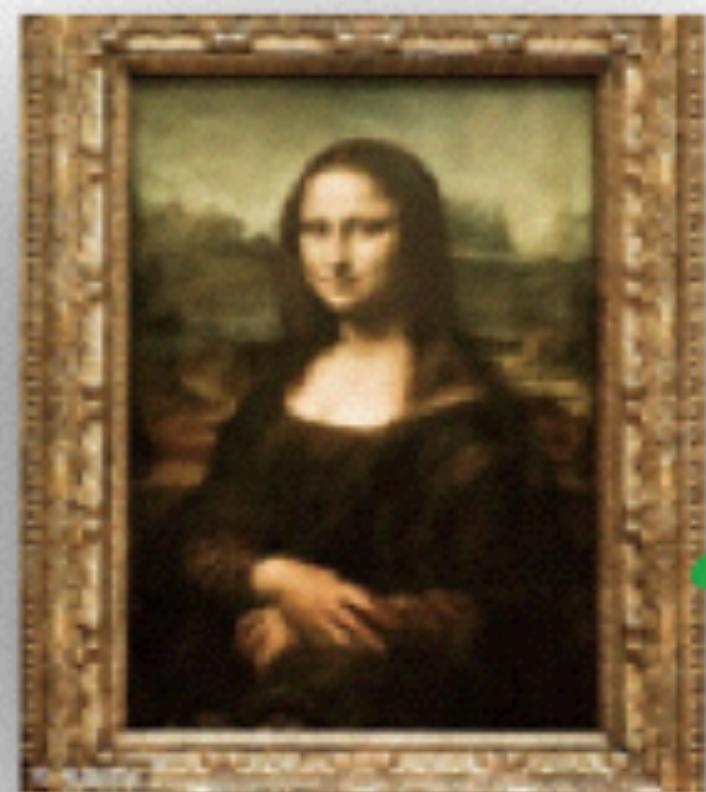
66

Interpolation in Latent Space





Generative Adversarial Networks



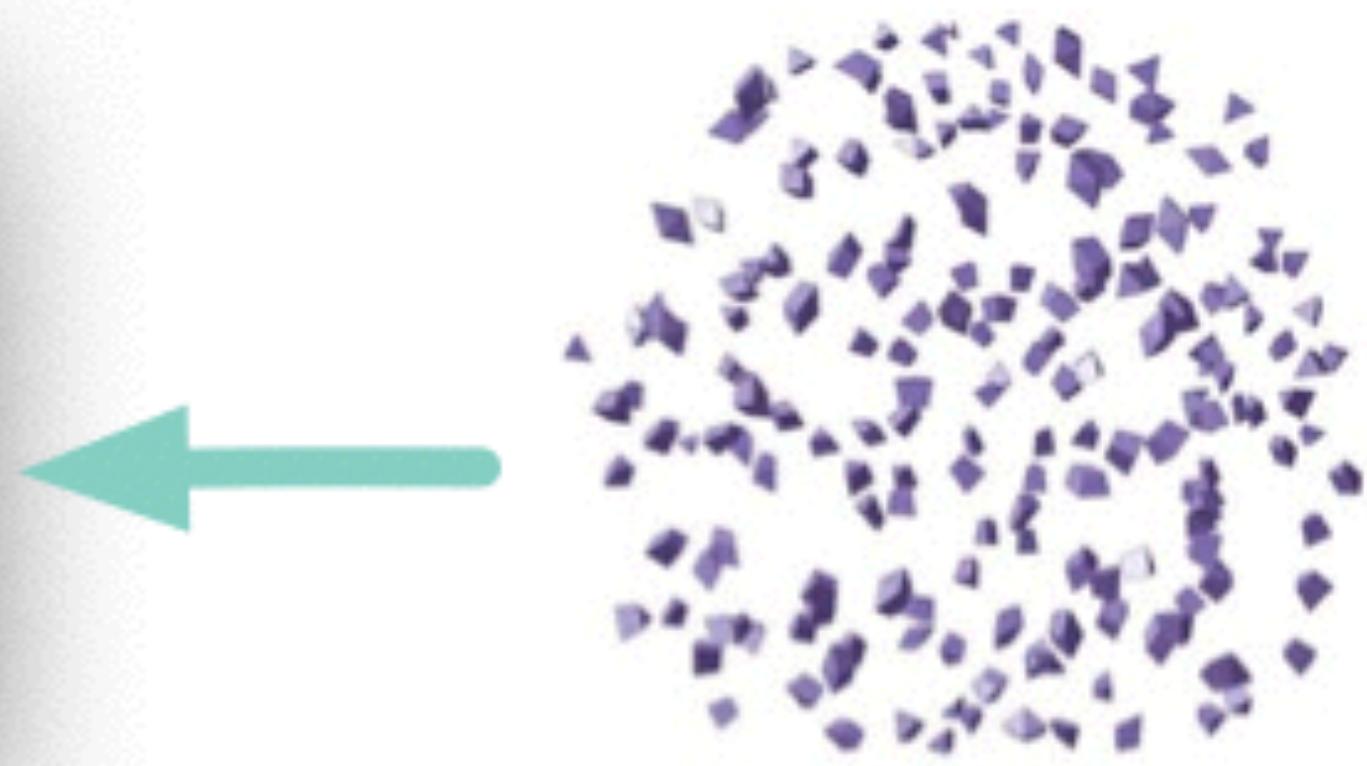
R: Real Data



D: Detective



G: Generator (Forger)



I: Input for Generator

Nvidia Celebrities

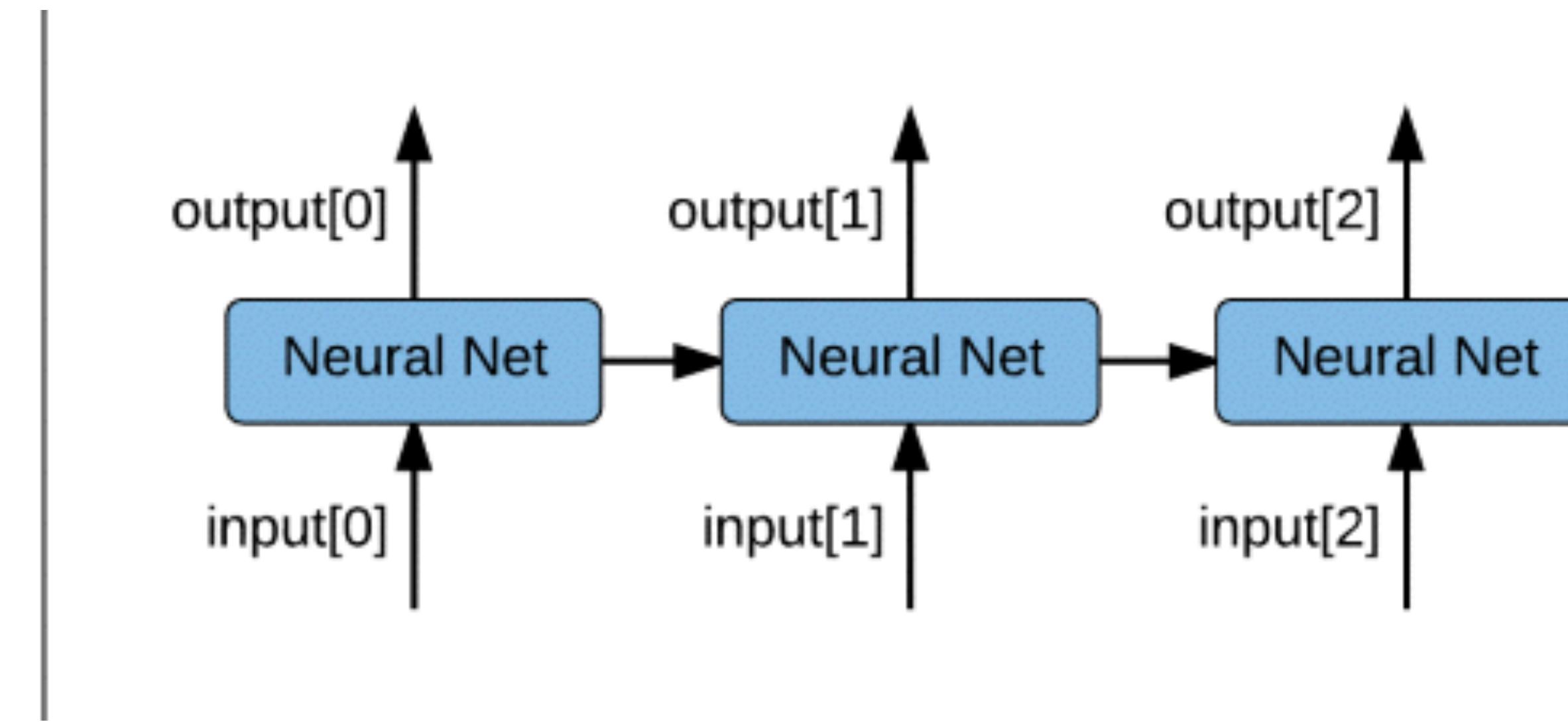
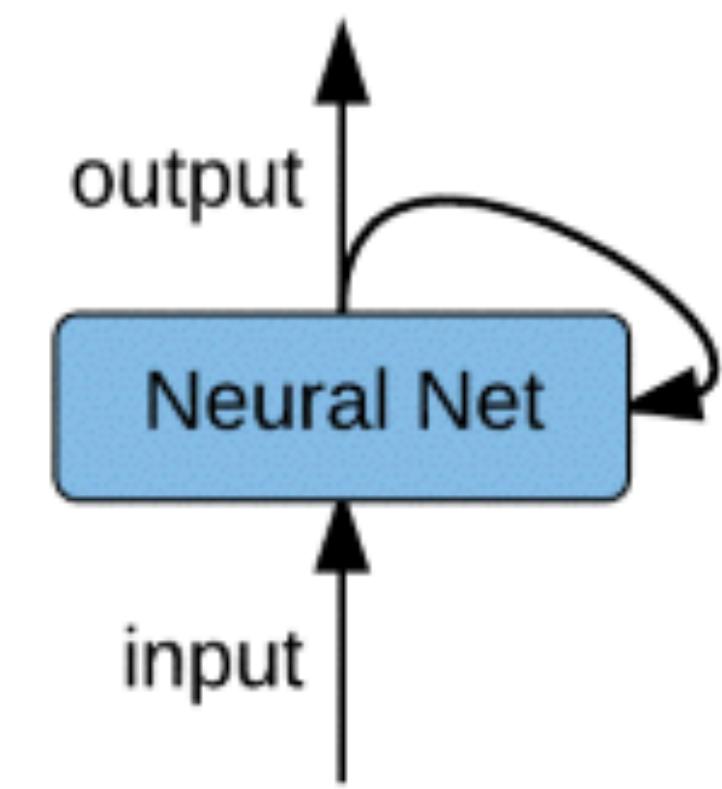
T-Sne

<https://experiments.withgoogle.com/ai/drum-machine/view/>

<https://experiments.withgoogle.com/ai/bird-sounds/view/>

B. Sound

Recurrent Neural Networks

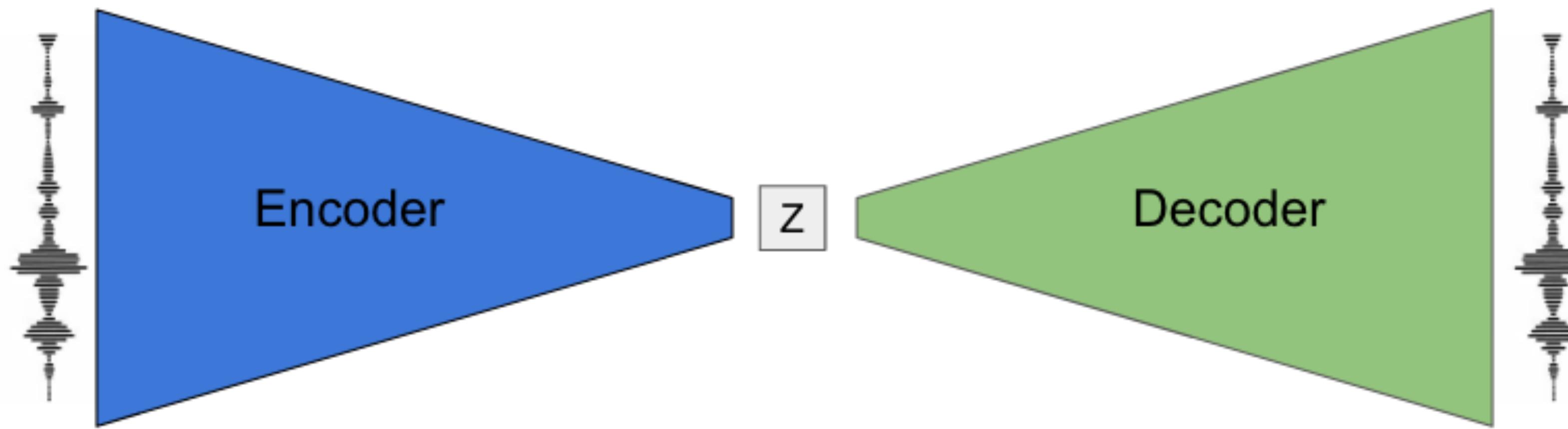


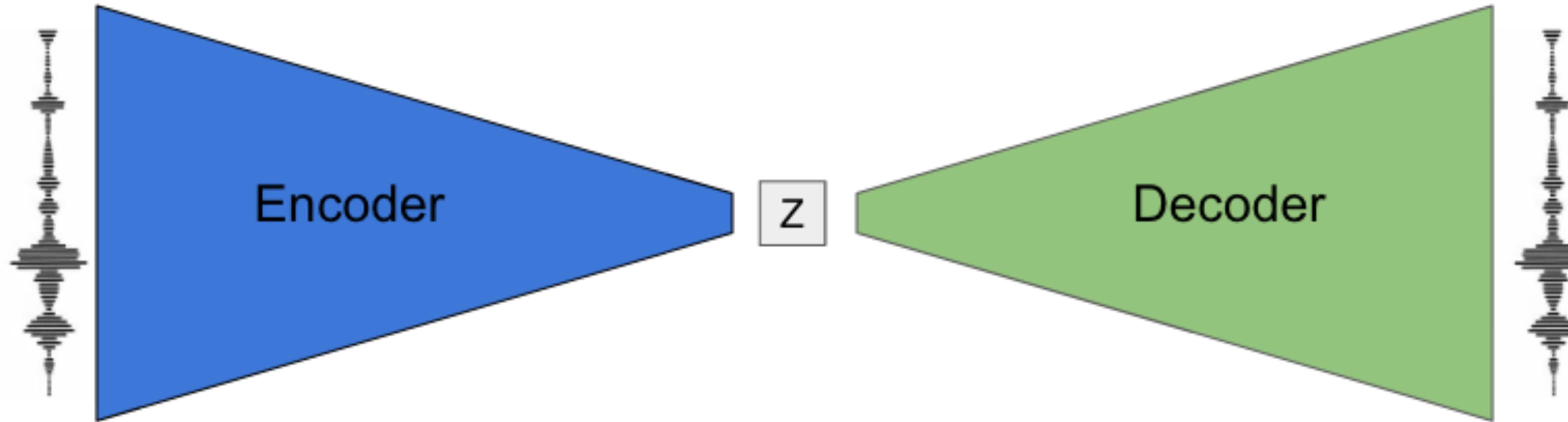
http://bachbot.com/#/?_k=9n6yey

https://deeplearnjs.org/demos/performance_rnn/index.html

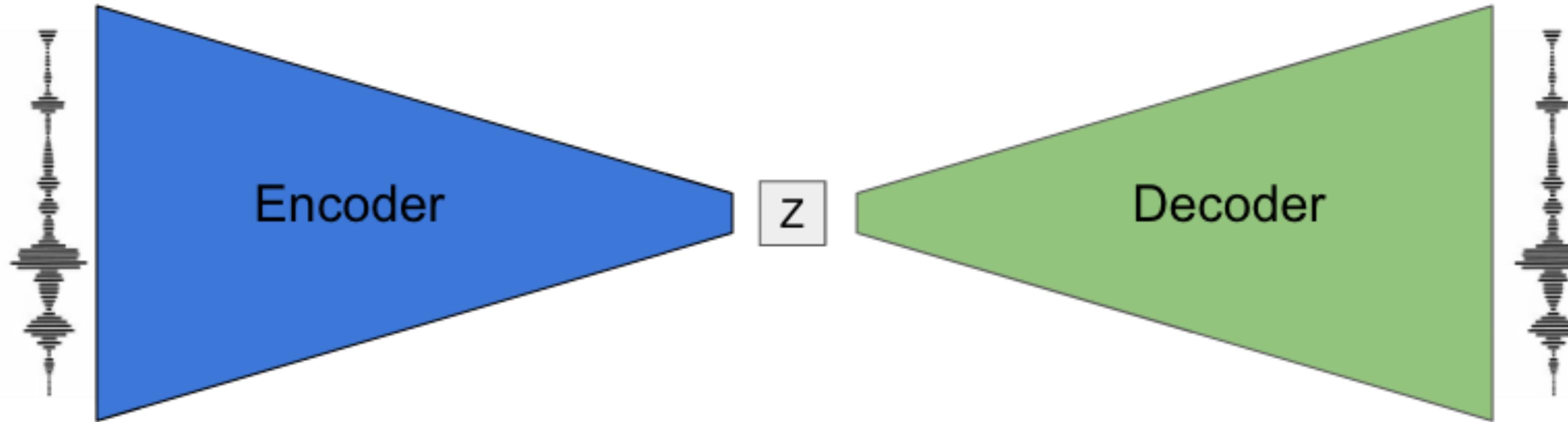
<https://experiments.withgoogle.com/ai/sound-maker/view/>

<https://lyrebird.ai/my/voice/>





Mix between originals cat & flute



Mix between latent space (z) cat & flute

Class Structure/Assignments/Etc.