Deep Convolutional GAN (DCGAN)

We use Conv nets.

Discriminator

input $\rightarrow$ D $\rightarrow$ $\frac{0}{1}$ fake / real

Zoom in

Conv $\rightarrow$ Conv $\rightarrow$ Conv $\rightarrow$ flatten $\rightarrow$ FC

to get stable architecture

(no max-pooling, Stride = 2)

no hidden fc

Zoom in

Batch Norm, Leaky ReLU

32, 32, 3 input

16, 16, 128 Conv1

8, 8, 256 Conv2

4, 4, 512 Conv3

flatten $\rightarrow$ FC $\rightarrow$ $\frac{0}{1}$

sigmoid

Leaky ReLU
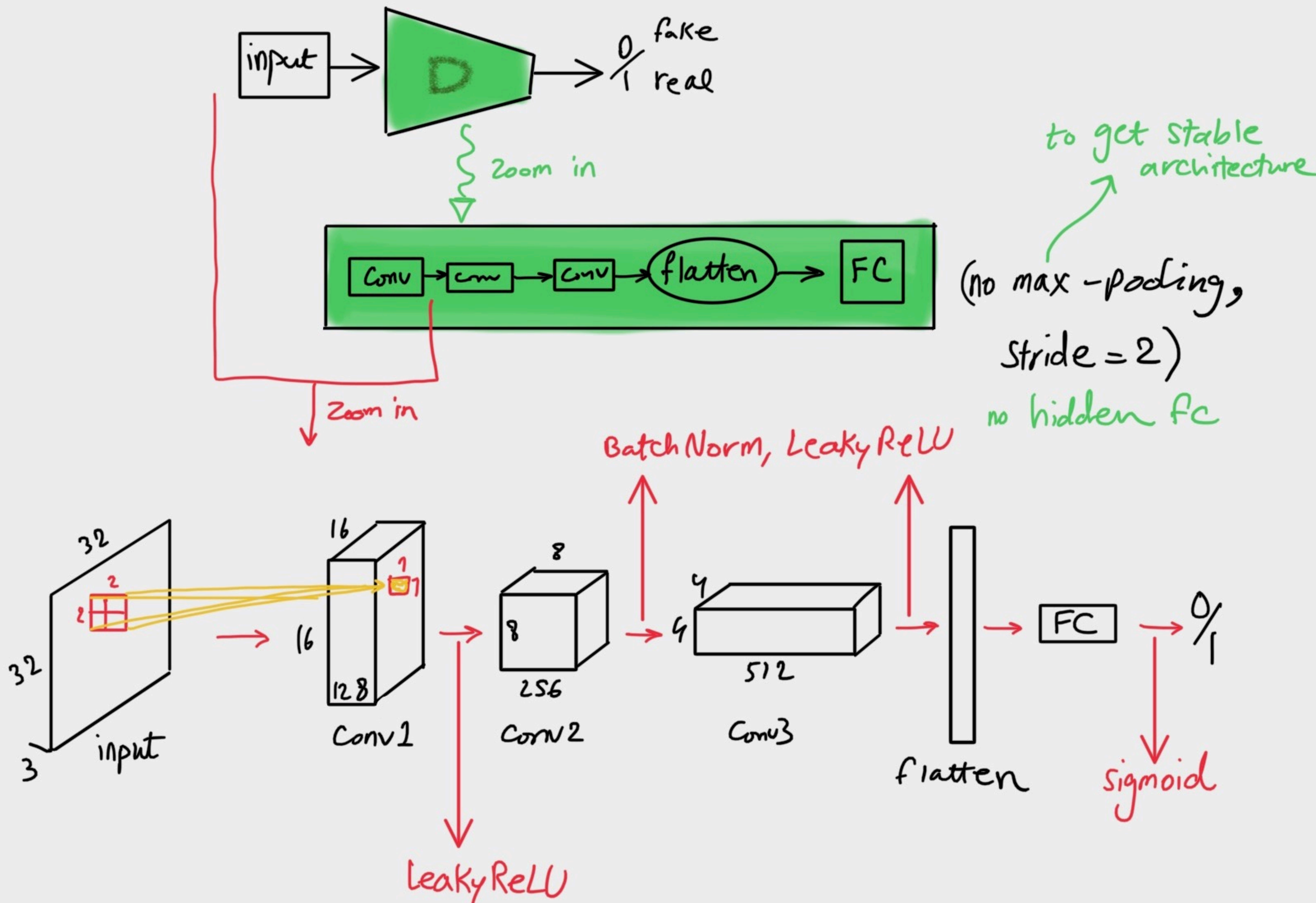
Generator
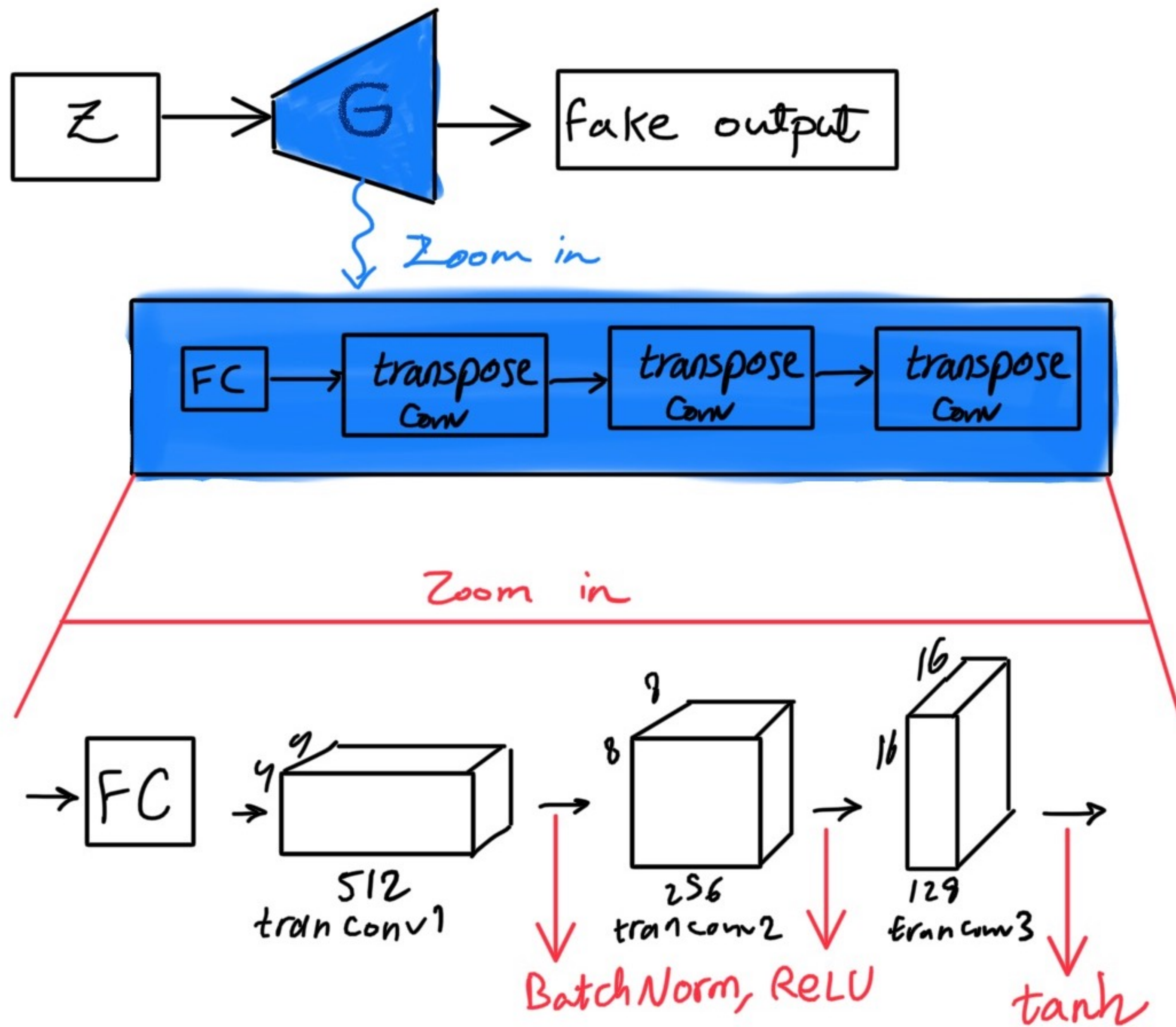
Batch Normalization

- during training, normalize each layer's input by using the mean and variance of values in current batch. (subtract by mean, div by batch std dev)
- it helps because when the distribution of inputs to each layer is similar, training a model becomes more efficient.
- each iteration becomes slower but in converges faster overall.
- Can be used with higher lr's.