

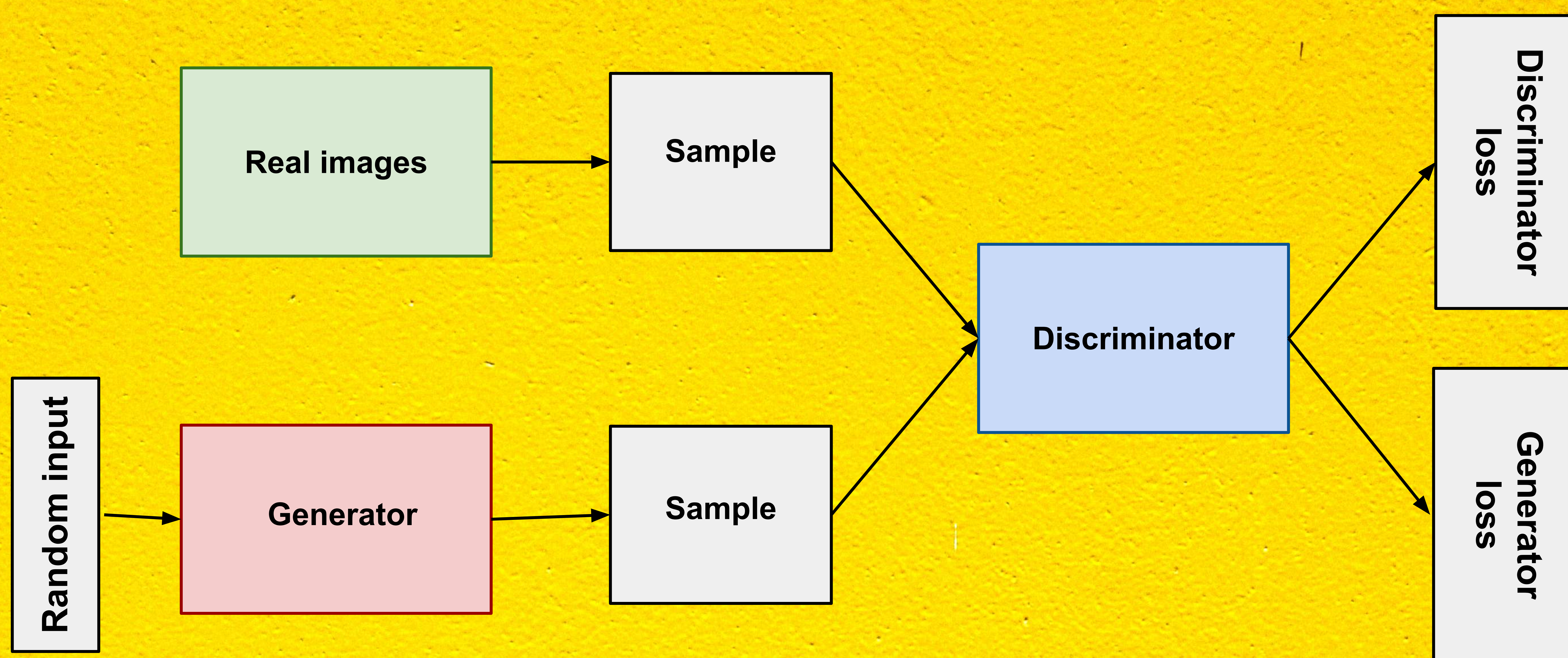
CONVERT IMAGE TO TOONIFY (Using Machine learning)





TOONIFY YOURSELF

- It is a cool application of GAN's.
- Where you can give your face image and see what you'd look like in an animated movie.
- Don't miss the 9th slide for a working example.



source - Google developers

HOW GAN'S WORK??

- GANs consists of two networks, a Generator, and a Discriminator. They both work simultaneously to learn and train a model.
- They both play an adversarial game where the generator tries to fool the discriminator by generating data similar to those in the training set.
- The Discriminator tries not to be fooled by identifying fake data from real data.



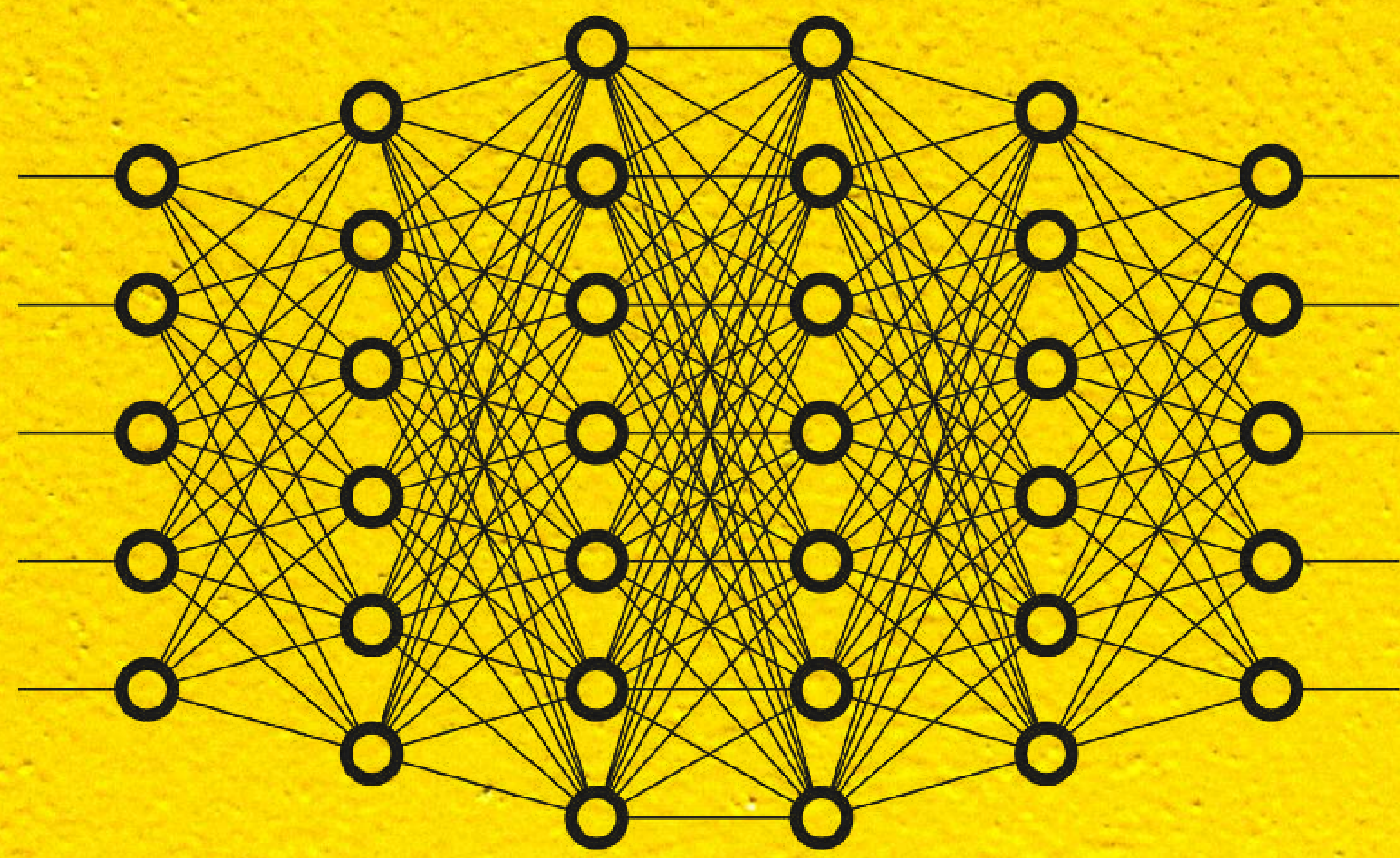
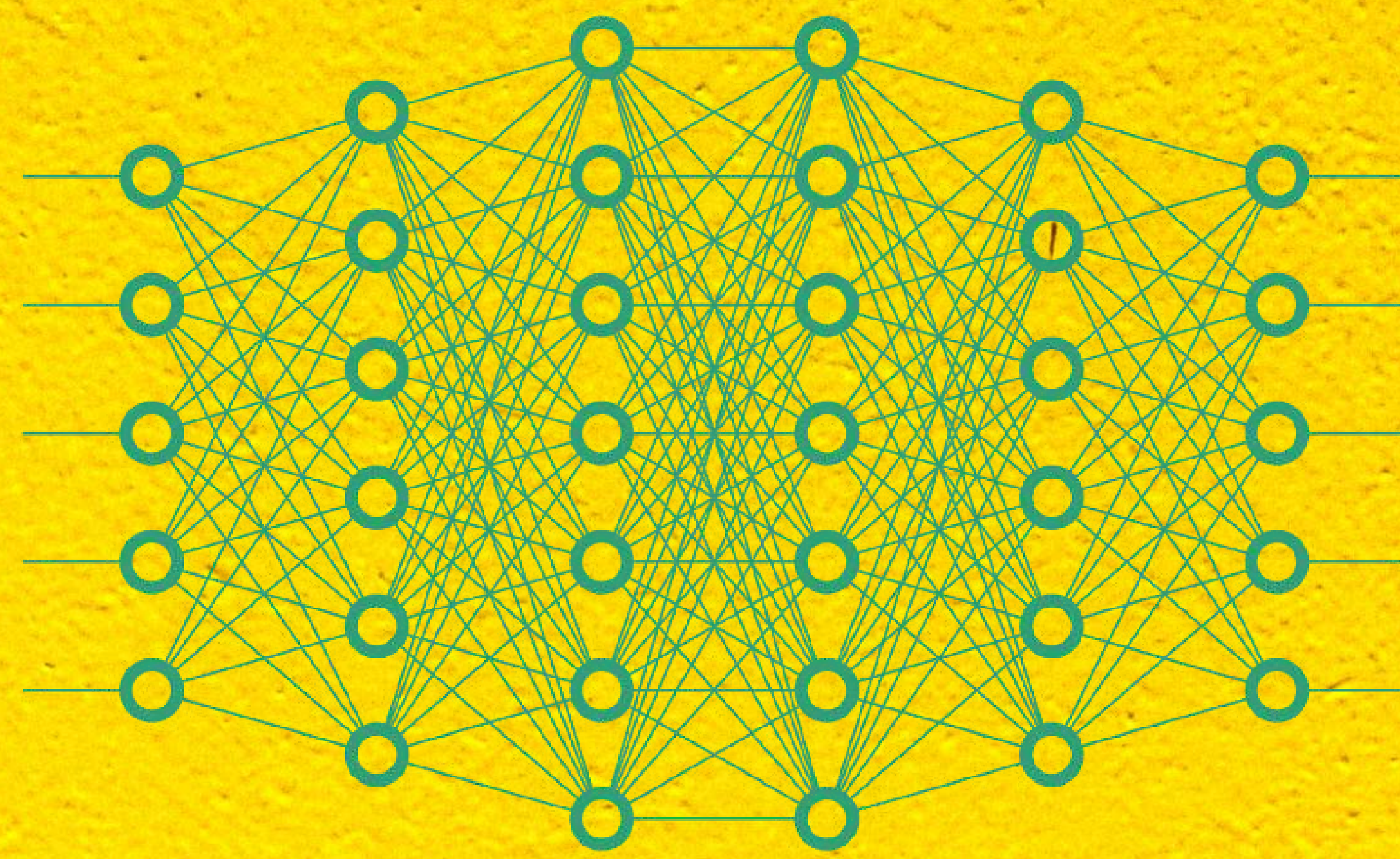
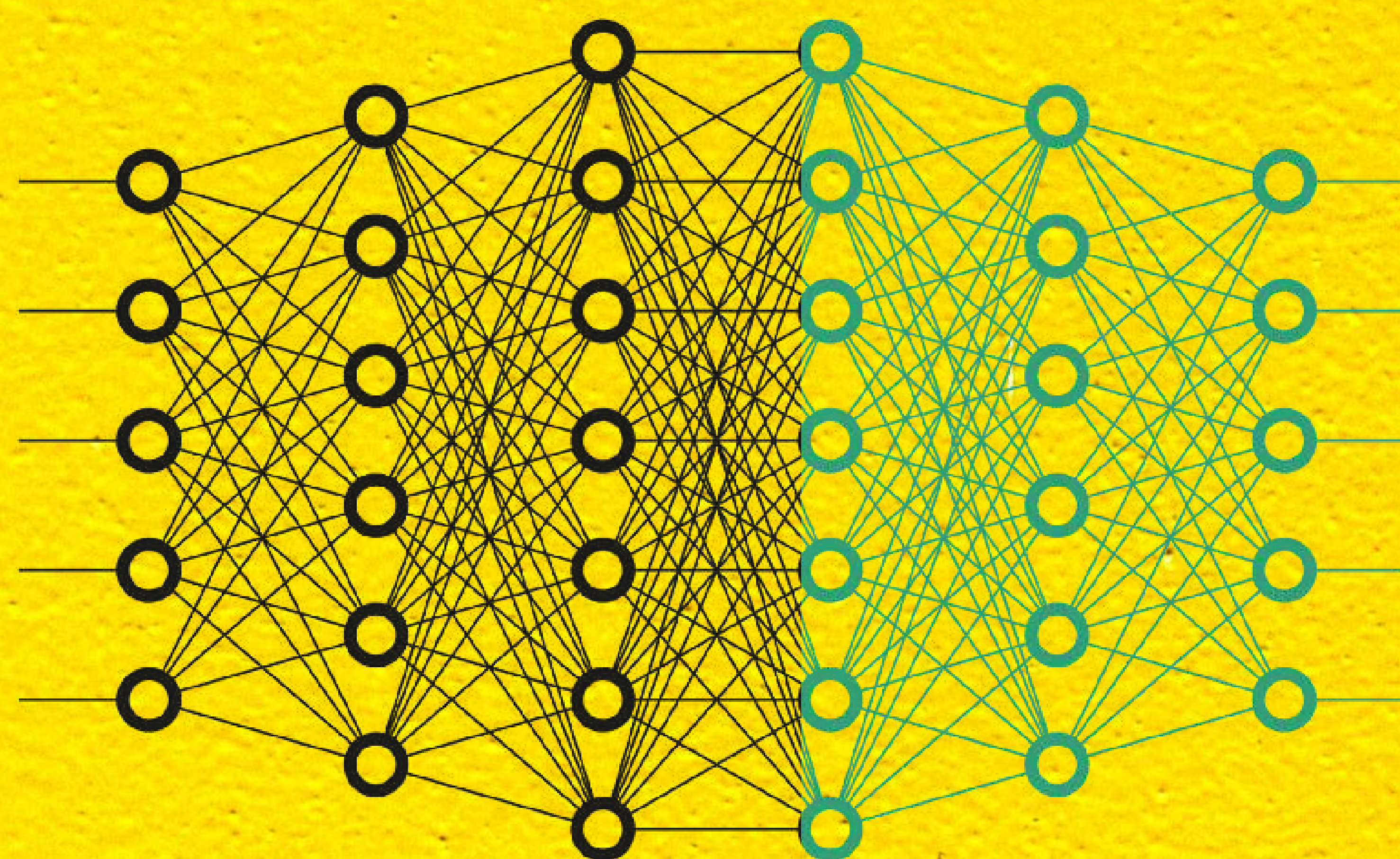
WHAT CAN GAN'S DO?

- It can create virtual models.
- Animating portraits like Monalisa.
- Turning line drawings into people.
- Estimating how roman emperors look like just by looking at their statues.
- Manual slowmo to super slowmo.
- Black and white images/videos to colour.
- Reconstructing face image just by listening to their voice.
- Many more applications....



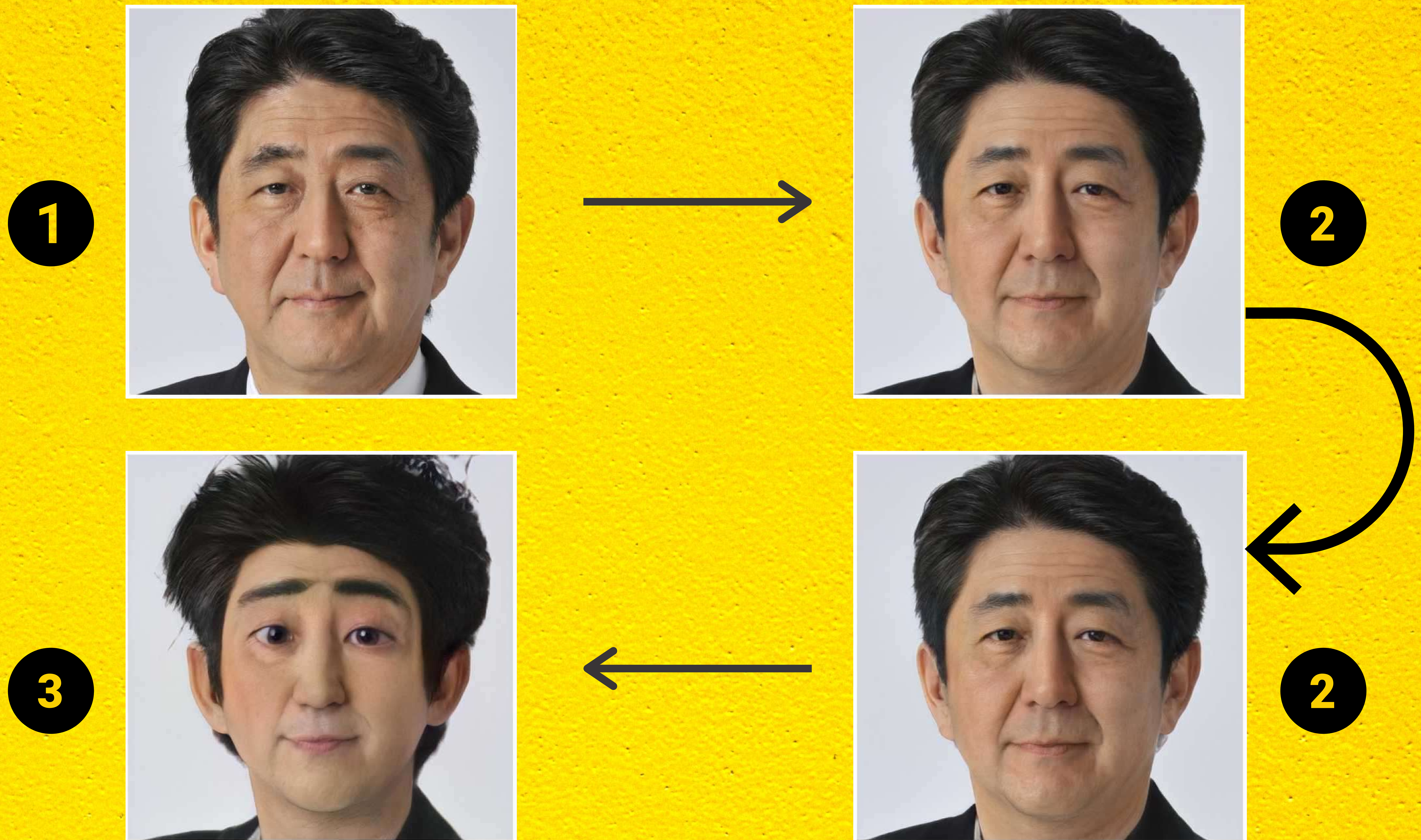
HOW TOONIFY WORKS? - 1

- They used a technique called transfer learning
- Creators of toonify used a pre-trained model called StyleGAN and fine-tuned the model on a dataset of various characters from animated films.
- The output is OK for such a small amount of training on a small dataset.

**Cartoon model****StyleGAN model****Hybrid model after layer swapping**

HOW TOONIFY WORKS? - 2

- They performed a trick called layer swapping.
- In the StyleGAN architecture, different layers affect the appearance in different ways.
- So they tried to take the high-resolution layers from the original model (StyleGAN), and the low resolution from his fine-tuned cartoon model.
- The final model has the structure of a cartoon face, but photorealistic rendering!



GENERATING THE OUTPUT

- 1 - Give the original image as an input to the StyleGAN model.
- 2 - IT will produce an output which looks almost exactly like the face you're looking for.
- 3 - Now you have a code (Latent vector) that represents a face, you can give this as input to the blended model and get the same face, but modified to look like a "toon" version!

RESOURCES

CLICK THE LINKS TO GET RESOURCES

@learn.machinelearning

- [Find all resources here](#)