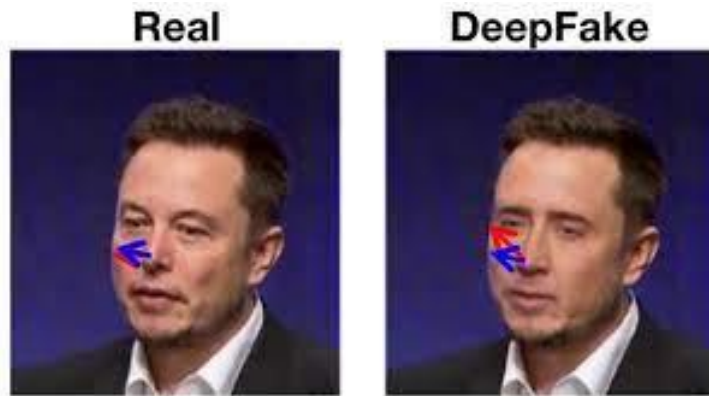

The Truth Behind Deepfakes

— Hal Stewart —

What is a Deepfake?

A Deepfake is any kind of synthetic media where a person in an image or video is swapped with another's likeness.

Deepfakes can also be of text or of voice.



History of Deepfakes

- Deepfakes started in the movie industry for CGI and other special effects
 - EX: Paul Walker in The Fast and Furious Movies
- The term Deepfake came from a Reddit user in 2017.
- Deepfakes are now being referred to as Artificial Intelligence Generated Synthetic Media to include all kinds of Deepfakes and also special effects from movies.



The Machine Learning Behind Deepfakes

- Two of the big ideas from Machine Learning being used mostly now is Generative Adversarial Networks (GANs) and Autoencoders.

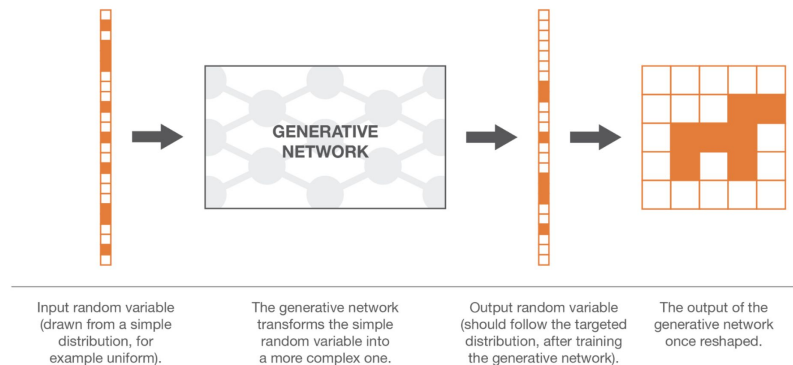


Illustration of the notion of generative models using neural networks. Obviously, the dimensionality we are really talking about are much higher than represented here.

Consequences and Threats of Deepfakes

- Blackmail in relation to Pornography
- Political Deepfakes being created to slander campaigns or start controversy
- Cybersecurity threats coming in the form of scams

Combating Deepfakes

- Analyzing images and checking for imperfections
- Adding digital watermarks
- Litigation and laws put into place

Benefits to Deepfakes

- The artistry behind them and being used in media
- The medical benefits to the technology behind Deepfakes
- GANs helping with X-Rays

Conclusion and What I Learned?

Deepfakes have both benefits and disadvantages to them when it comes to safety and useage.

Personally, I believe that DeepFakes are important or at least the technology behind them is important. What people use with that technology well that's the problem. This has happened before and will continue to happen again and again with technological enhancements. Machine Learning and AI won't stop because of one bad thing created from them.