

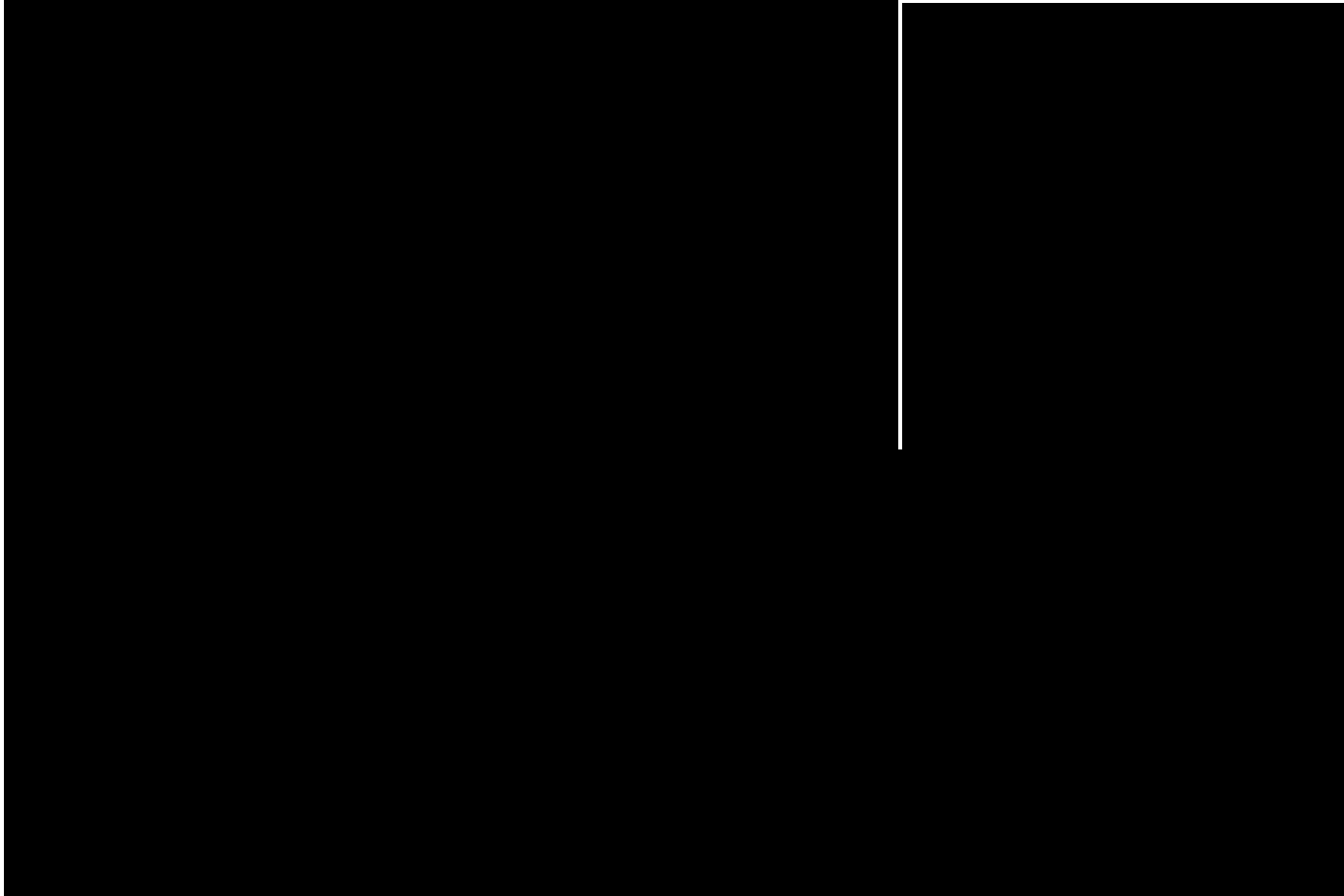
The background features a complex network of thin grey lines connecting various points, forming a web-like structure. Scattered throughout are numerous triangles of different sizes and orientations, some with solid black dots at their vertices. The overall aesthetic is technical and digital.

# **Ethicacy: Deepfake Technology**

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Peter Tsun  
Brian Mueller

# Which ONE is real?



**WHAT**  
deepfakes are

**01**

**HOW**  
deepfakes work

**02**

**PROS**  
of deepfakes

**03**

# DEEPFAKES

**04**

**CONS**  
of deepfakes

**05**

**SUMMARY**  
of deepfakes

**06**

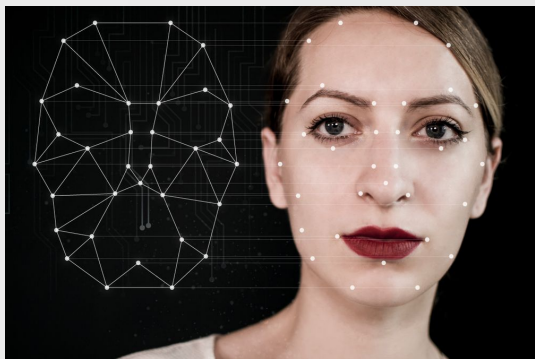
**REFERENCES**  
All the goodies



# 01

**WHAT deepfakes are**

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## **Deepfake is**

a computer-rendering  
of a virtual imitation  
of a real person in an  
audio or video  
recording



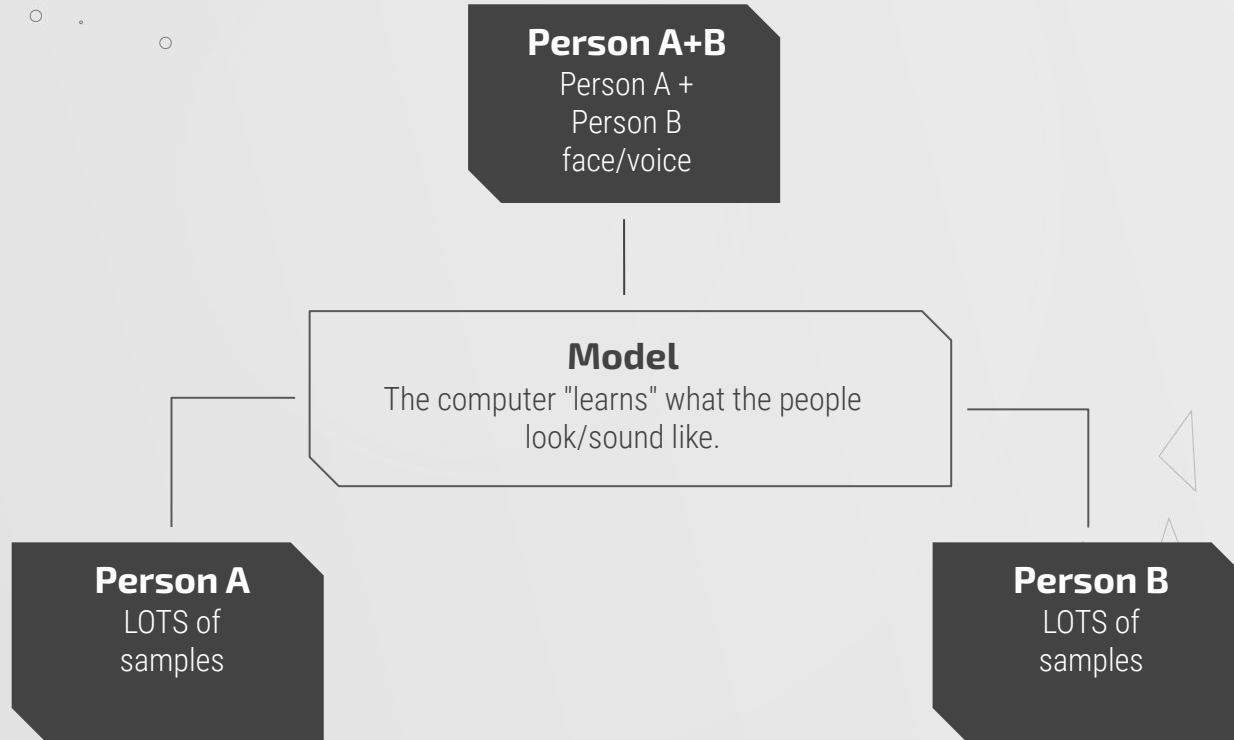


02

**HOW deepfakes work**

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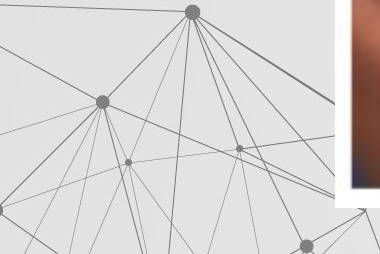
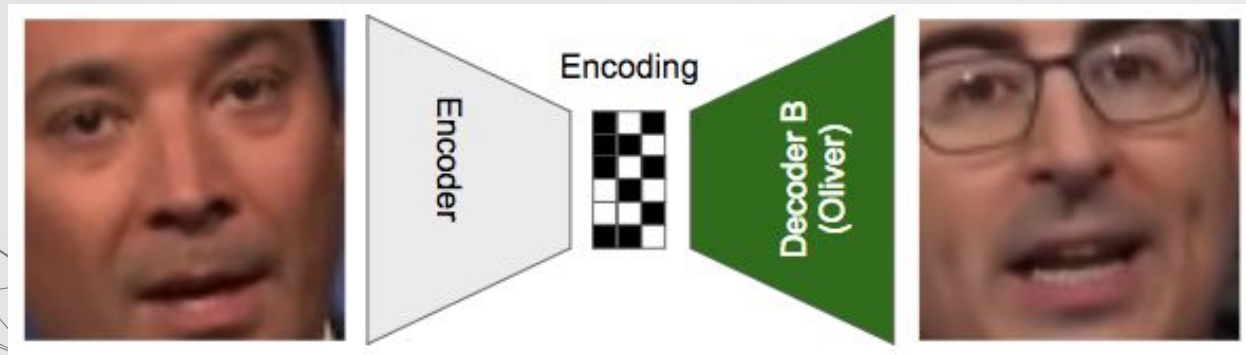
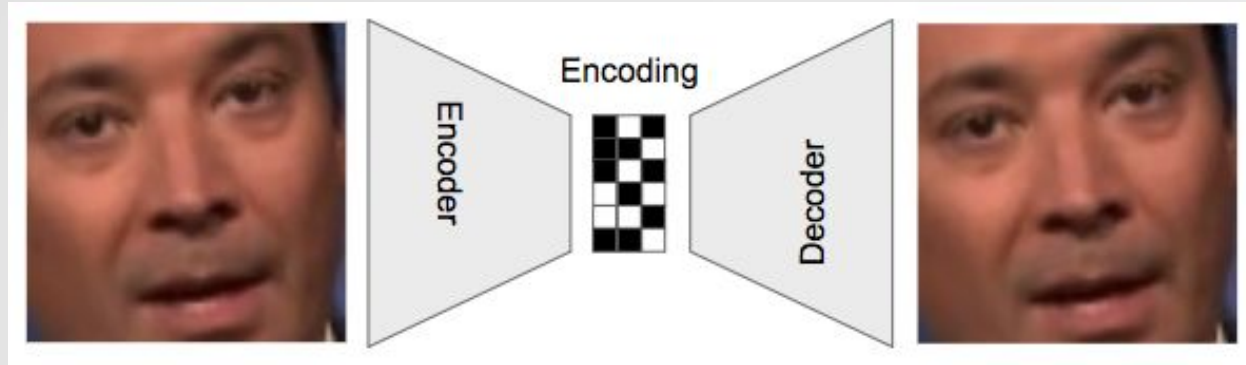
# Machine Learning (ML) model



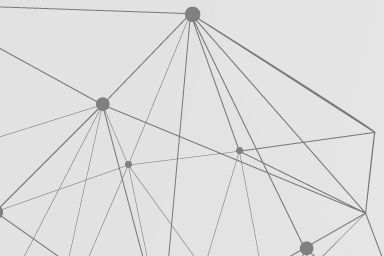




"A deep neural network learns how to take an input, compress it down into a small representation or encoding, and then to regenerate the original input from this encoding."



# RESULT



Original



Swapped





# 03

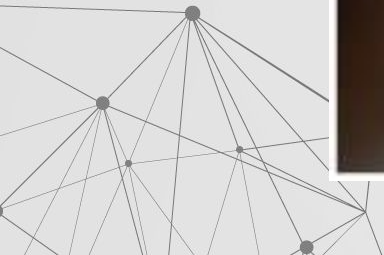
## **PROS of deepfakes**

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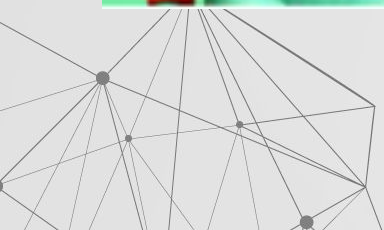
# Replacing actors (deceased, stunts, preference)



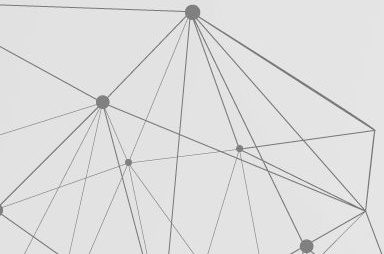
VIA 9GAG.COM



# Fashion / Targeted Advertisements



# Harmless Entertainment



# 04

## CONS of deepfakes

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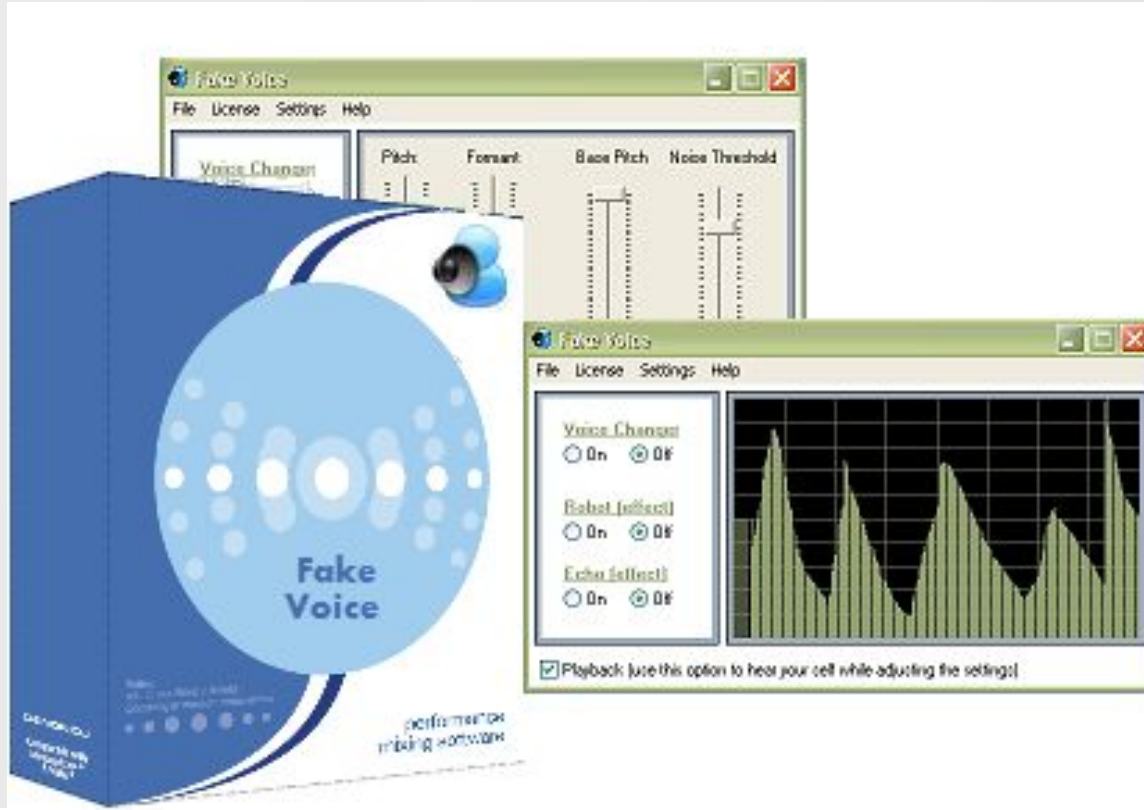


# Numerous Examples of Egrigious Government Misconduct





# The End Justifies the mean - just get the conviction



**Ruin a person's reputation with superimposed face.**



## Doctored Audio

A reputable person was smeared with an audio recording supposedly showing the person accepting bribes when the audio is a really computer-rendering of the person's voice.




# 05

## SUMMARY



# SUMMARY

- Like any technology, there is the potential for good/bad
  - New opportunity for programmers to create programs that make virtual reality look real (games, movies)
  - Leads to new breakthroughs in machine learning and artificial intelligence
    - Modern developments are turning text to audio/video
  - Potential problems can happen when people cannot tell real recordings from realistic-looking fake ones
    - Video outlets (news, Youtube, Facebook, etc) will need to continue to develop their machine learning models to detect deepfakes
- 



06

# REFERENCES

# REFERENCES

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- <https://goberoi.com/exploring-deepfakes-20c9947c22d9>
- <https://www.youtube.com/watch?v=VQgYPv8tb6A&vle=en>
- <https://9gag.com/gag/a3Lozd1>
- <https://www.thecrimson.com/article/2016/3/26/snapchat-face-swap/>
- <https://towardsdatascience.com/realistic-deepfakes-c0lab-e13ef7b2bba7?qi=d14052cd9f95>





**Thank you!**