RSAConference2020
Asia Pacific & Japan

A Virtual Learning Experience | 15–17 July

HUMAN ELEMENT

SESSION ID: **RMG-R05V**

Reality Under Attack: Just How Serious Is the Deep Fake Threat?

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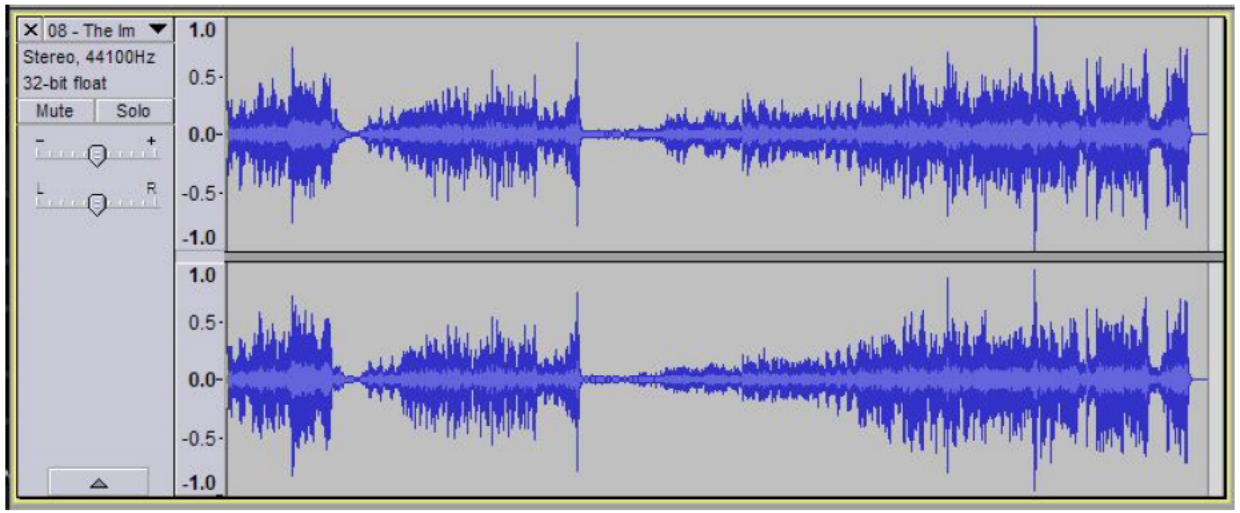
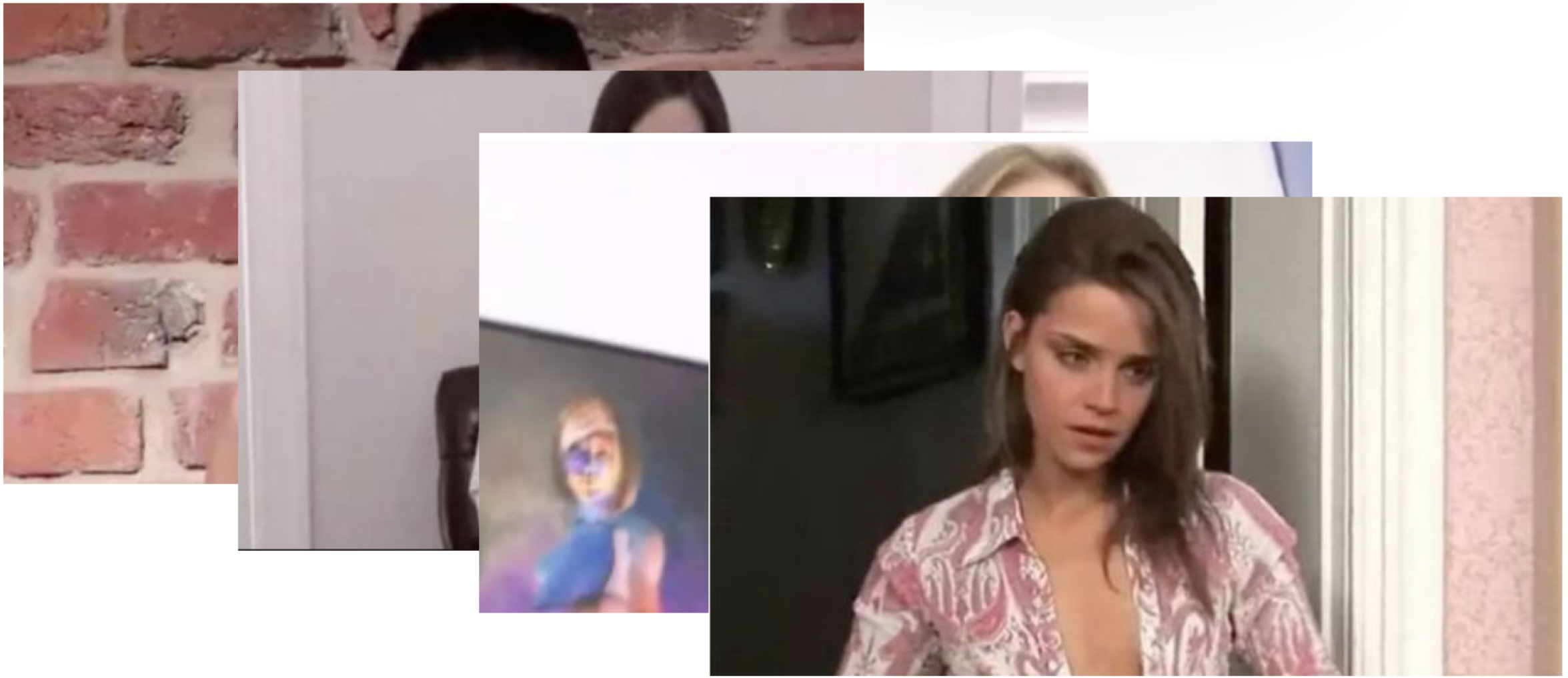
What Are Deepfakes?



A quick history on the rise of deepfakes



Turning Political

Business leaders

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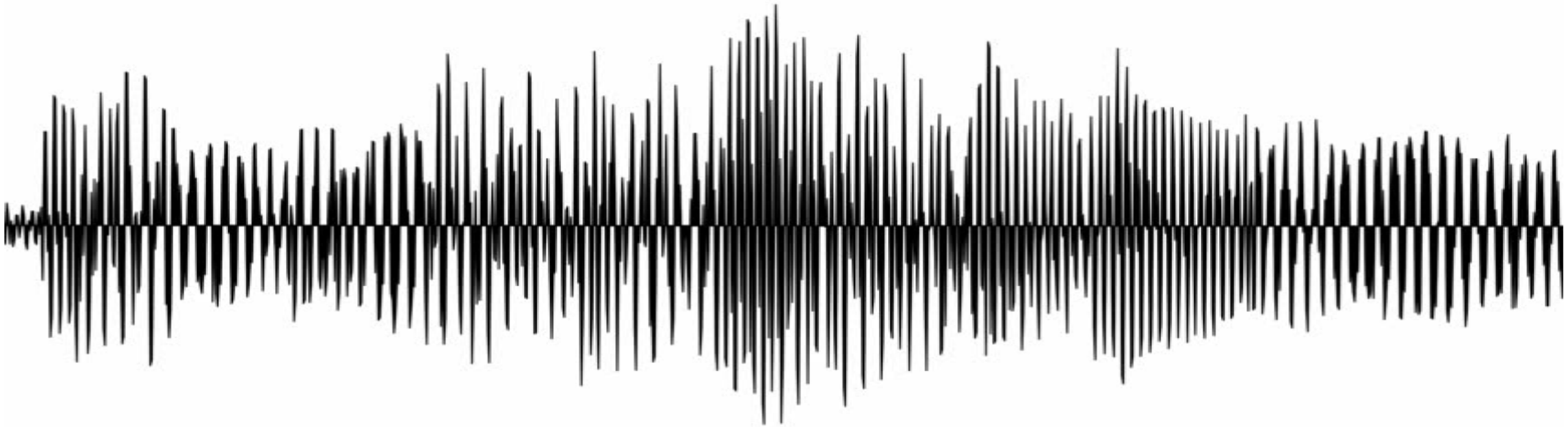
The Untold Business Impact

Threats to business



SOCIAL ENGINEERING

Threats to business

EXTORTION

Threats to business

“OUTSIDER” TRADING

Threats to business

FINANCIAL/MARKET MANIPULATION

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How Serious is this Really?

Understanding GANs

Target Media

Generator

Training Set

Discriminator

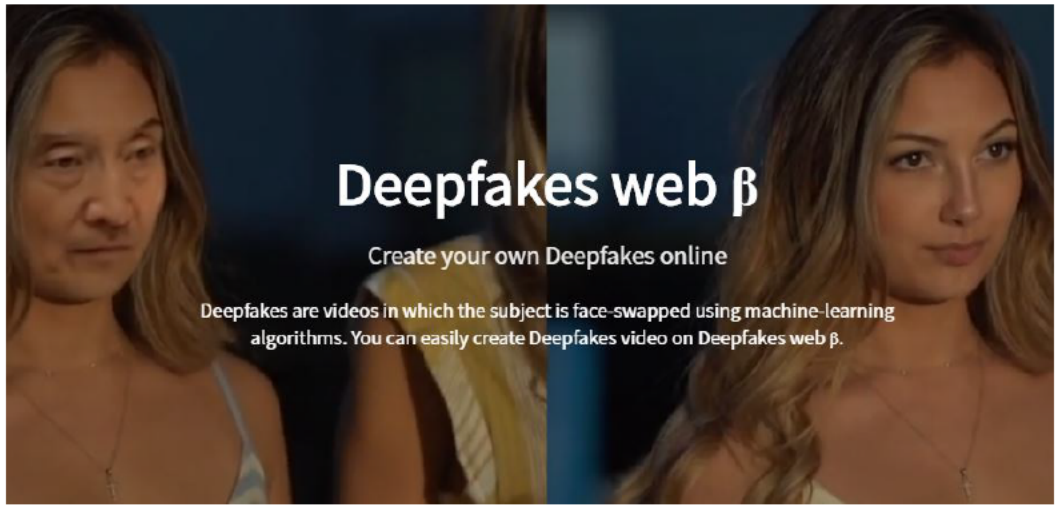
Fake

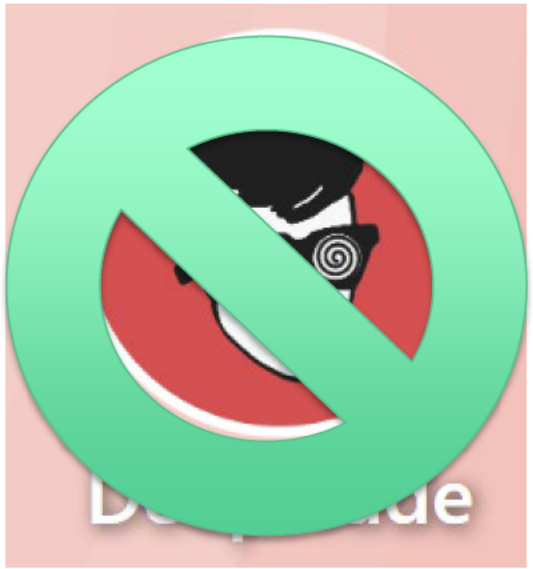
Real

Creating Deepfakes

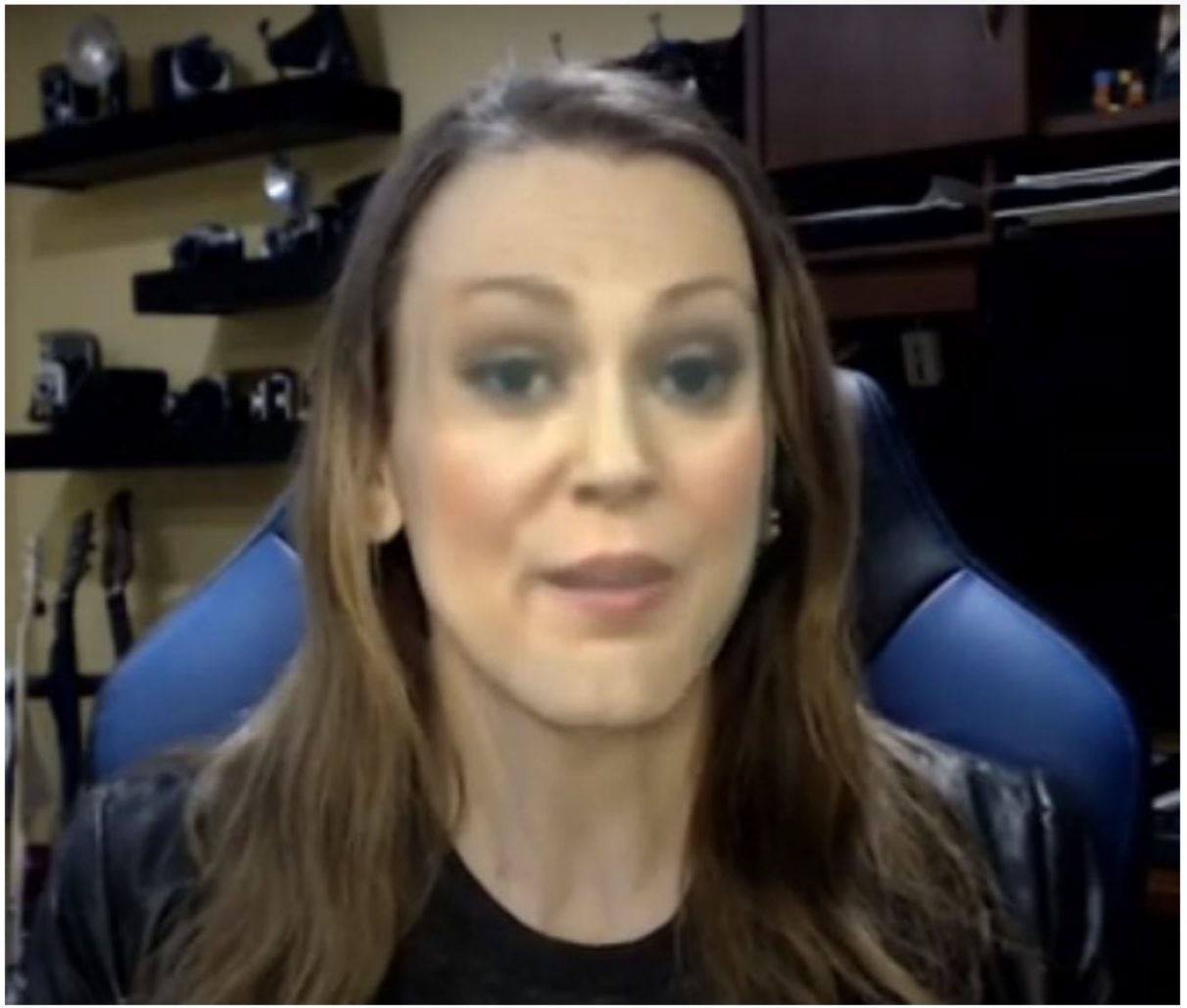
FAKEAPP

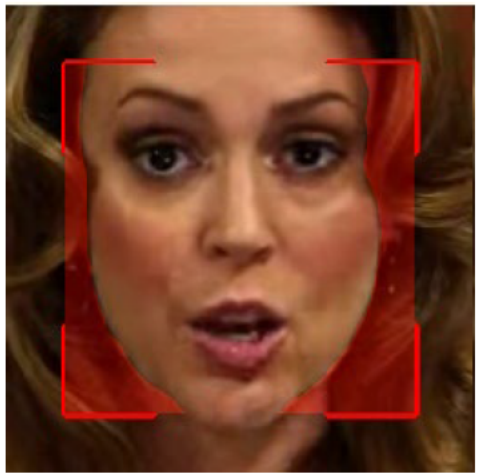
faceswap





Not So Easy Afterall…





Detecting Deepfakes

Image: Phys.org

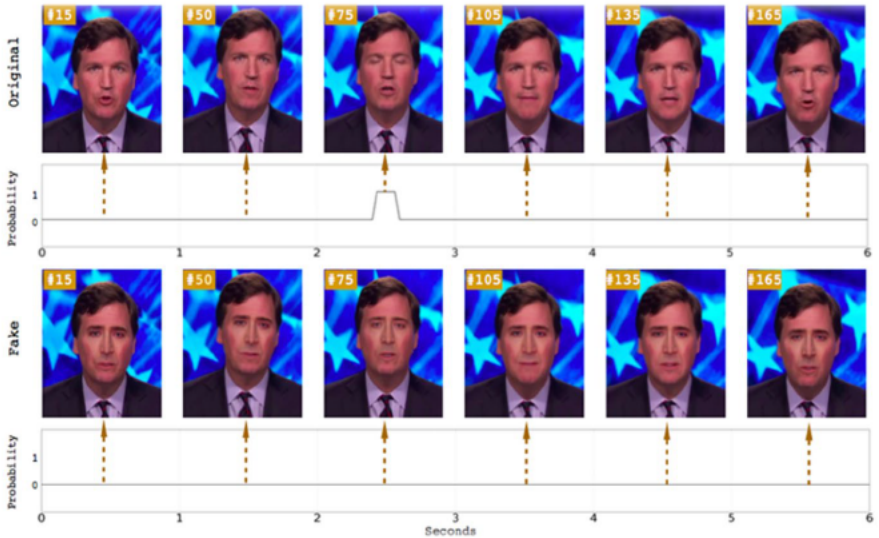
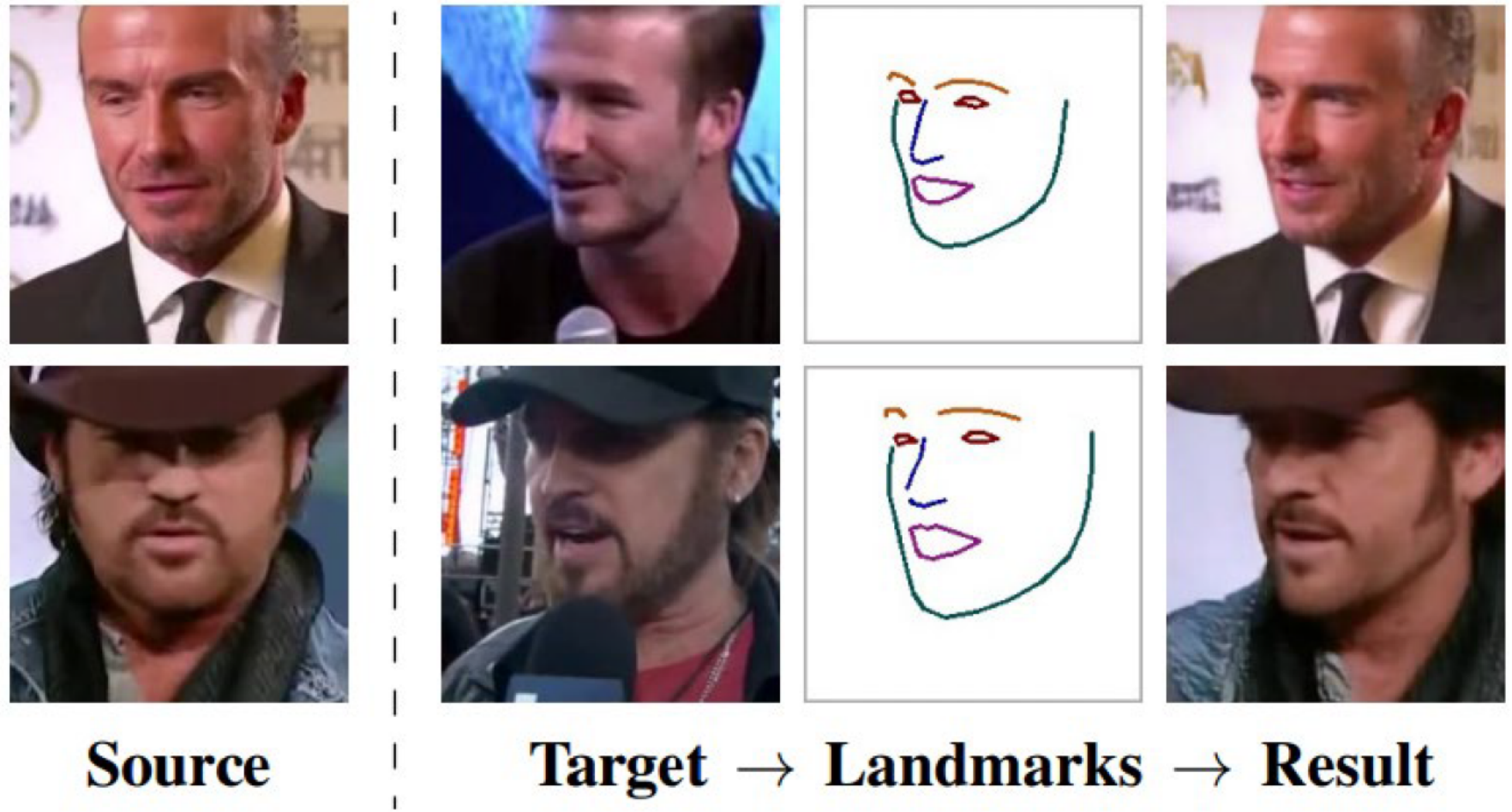


Image: University at Albany, SUNY

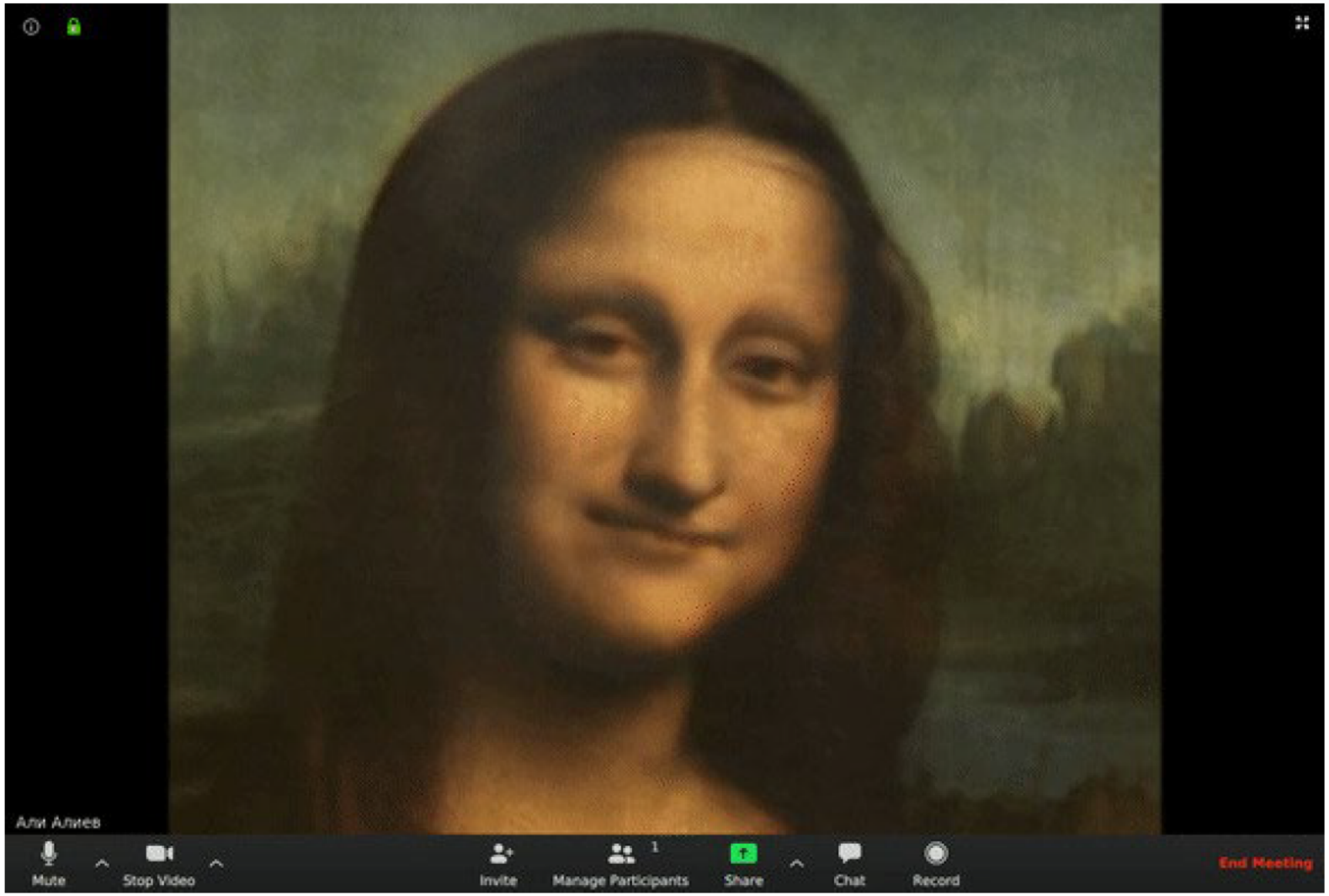
Image: Berkeley & USC

A New Approach



Current Limitations

Avatarify (Plugin for Video Conferencing)



Can we prevent deepfakes from being created?

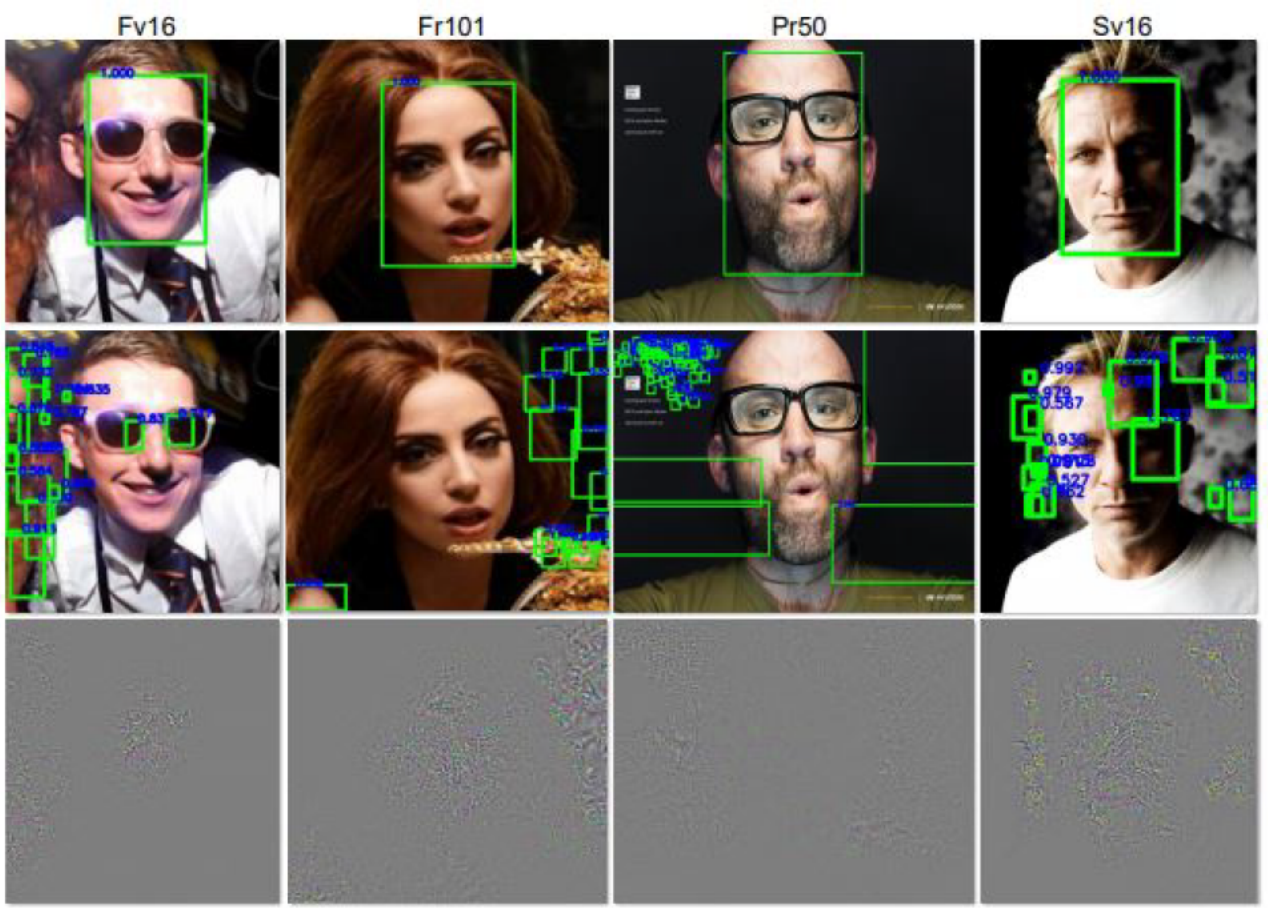


Image: Cornell University

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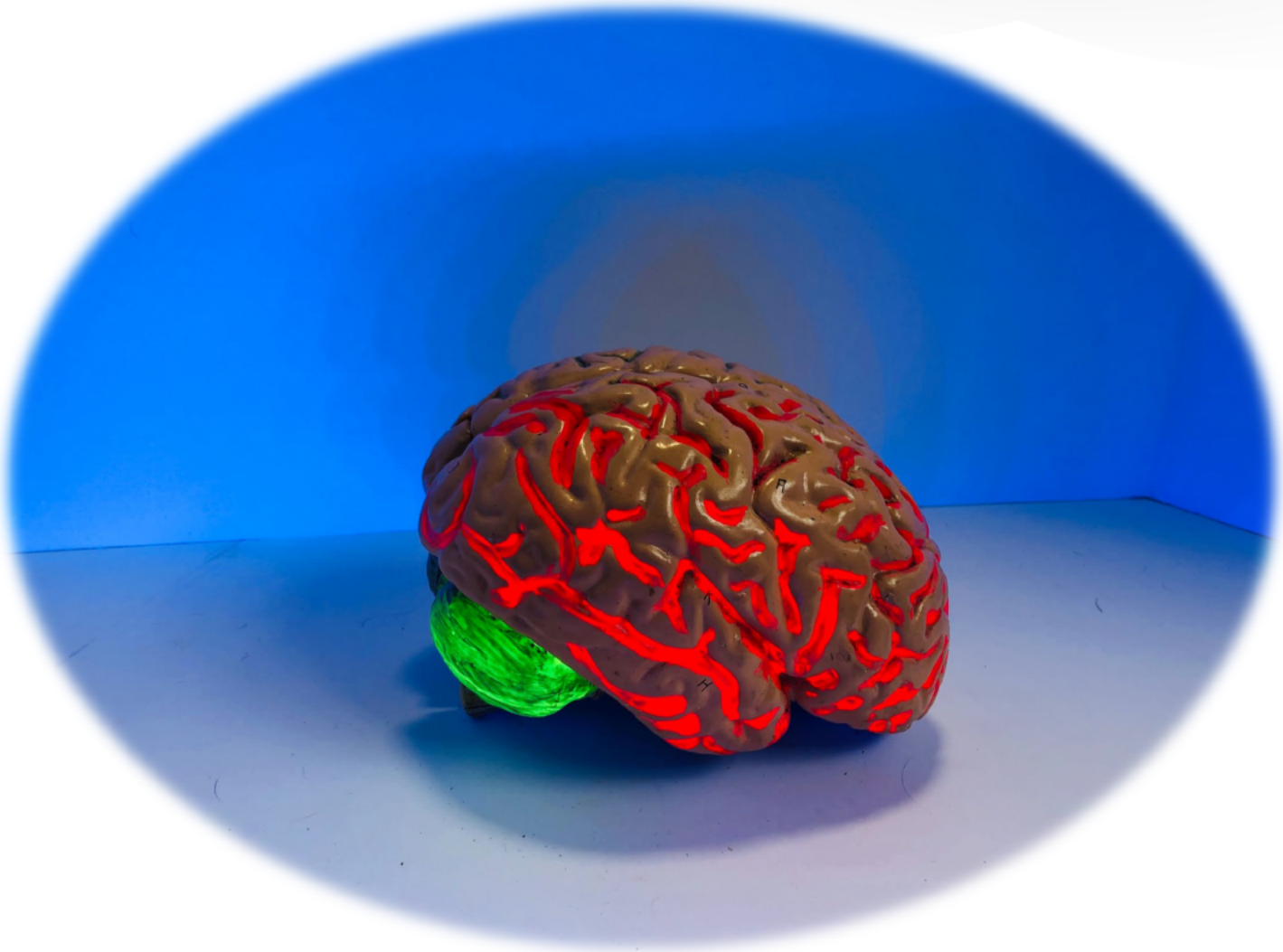
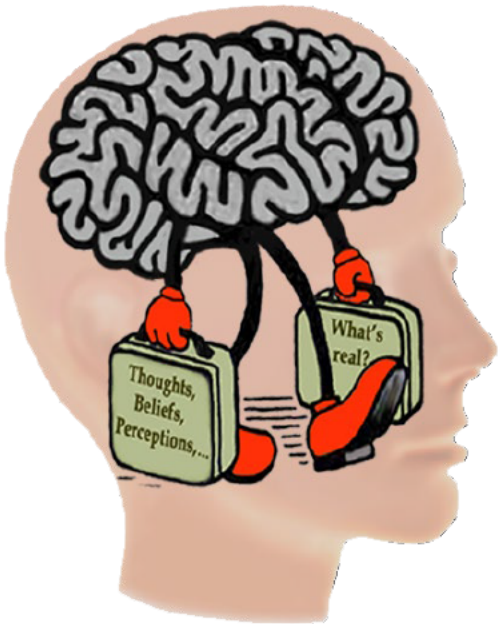
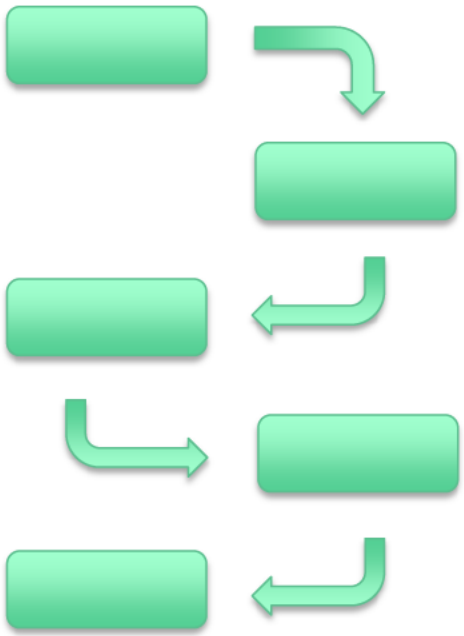
Combating Deepfakes

Misinformation is a Human Problem

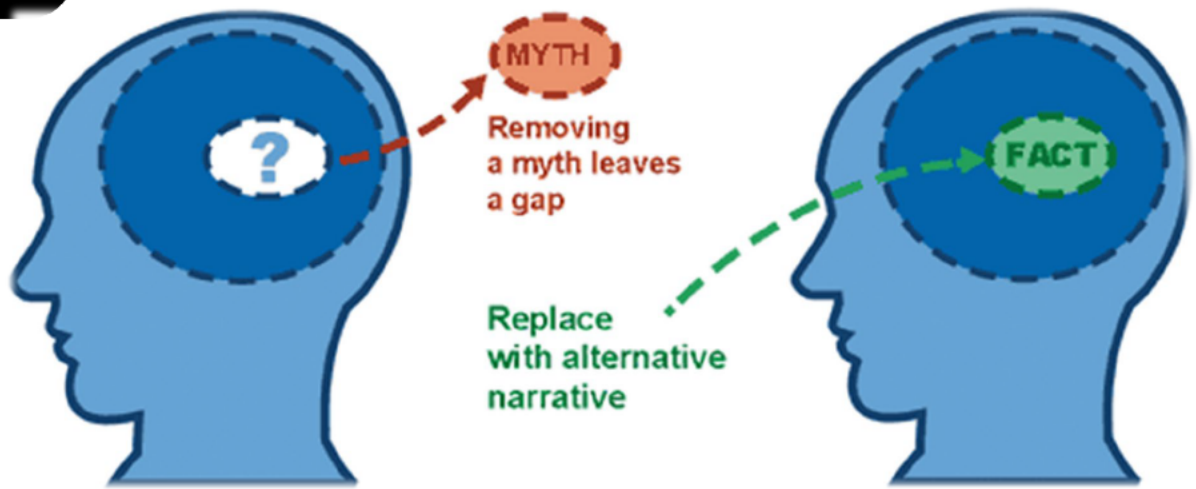


The Disinformation Problem





Combating Disinformation



References

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Exposing DeepFake Videos By Detecting Face Warping Artifacts
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Protecting World Leaders Against Deep Fakes
http://openaccess.thecvf.com/content_CVPRW_2019/papers/Media%20Forensics/Agarwal_Protecting_World_Leaders_Against_Deep_Fakes_CVPRW_2019_paper.pdf

Hiding Faces in Plain Sight: Disrupting AI Face Synthesis with Adversarial Perturbations
https://arxiv.org/pdf/1906.09288.pdf

What Should Businesses Do?

- Immediately
  - Minimize channels for company communications
  - Drive consistent information distribution
- Prepare for the Future
  - Develop a disinformation response plan (treat these as incidents)
  - Organize a centralized monitoring and reporting function
- For the long term
  - Encourage responsible legislation and private sector fact verification
  - Monitor development of detection and prevention countermeasures