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What is Deep Fake Technology?

Deep fakes are computer-generated audio or video forgeries that falsely depict a person saying or doing things that never happened. Deep fakes use machine-learning—an artificial intelligence (AI) technology—to superimpose already existent photos and manipulate voice recordings to create realistic fake videos.

- Research on deep fake technology is conducted in academic, government, and private sector settings. A Reddit user expanded public knowledge of deep fake technology through posts on social media and then created a free software for constructing fake videos. Between January and June 2018, this software was downloaded 120,000 times. Today, deep fake video technology is available at no cost to any person with a computer or phone and Internet access.

- With access to the software all that is required to construct a deep fake is a collection of photos of the target. Photo images are readily available online. In 2017, a non-profit found 1,000 selfies are uploaded to Instagram every second. The more pictures of the target, often the more realistic the deep fake.

A still image from Buzzfeed's deep fake of former President Barack Obama (Source: Buzzfeed)

- Celebrities and public figures are common targets for deep fake videos. In April 2018, Buzzfeed created a deep fake video of former President Barack Obama with a voiceover from comedian Jordan Peele to warn about the technology's ability to manipulate reality. Midway through the video, which received 4.8 million views between April and September, Peele revealed that the video was a fake.

Members of Congress, alarmed about the potential national security risks associated with deep fakes, requested that the Director of National Intelligence assess hostile actors' possible use of deep fake technology and any countermeasures to prevent or detect deep fakes in the future. In June, the House Intelligence Committee held an open hearing on deep fake technology and AI-generated synthetic data to examine the national security threats posed and what efforts can be done to deter and combat this technology.

Additional Resources:
CNN Newsroom Deepfake Overview
Congressional Letter to the Director of National Intelligence
House Intelligence Committee Hearing on Deep Fakes
Office of the Director of National Intelligence: 2019 Worldwide Threat Assessment

This is the NTIC's first product in a series focused on deep fakes at the UNCLASSIFIED level. Be on the look out for future products including how this technology can be used to spread disinformation and how to detect it. Check out this publication and more at ncrintel.org.