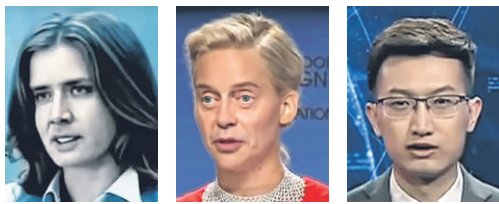# What are deepfakes?

Advances in artificial intelligence (AI) have created a slew of convincing fake audios and videos known as deepfakes.

Last year, comedian Jordan Peele and Buzzfeed created a very convincing deepfake video of former US president Barack Obama. Peele ventriloquises Mr Obama, with the help of AI and called President Donald Trump names. Peele showed how easy it is to put words into someone else's mouth.

OTHER CONVINCING DEEPFAKES

Since then, other convincing deepfakes have surfaced on social media.

Actor Nicolas Cage as comic character Lois Lane

Actor Steve Buscemi as actress Jennifer Lawrence

China's Xinhua virtual AI news anchor

BASIC CONCEPT

Give a computer a facial image and tell it to learn how to superimpose the image onto another using a complex computer program.

Person A

Person B

1 Feed
Thousands or millions of images and soundbites are fed into a computer.

Images

Images and soundbites

2 Learn
The computer then learns how to 'map' Person A onto Person B using an AI program, after having studied the way Person B talks and moves.

3 Generate
The synthesised person or deepfake is now able to talk using soundbites or by imitating a videoclip.

Synthesised person or deepfake

HOW TO SPOT A DEEPFAKE

The more images a computer has of the bogus person, the more convincing the deepfake will be. The images must also match the person it wants to impersonate as closely as possible or else the deepfake will simply look fake.
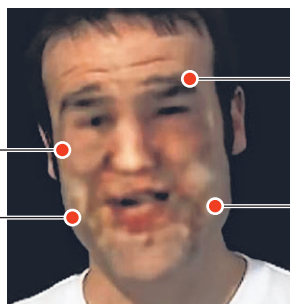
Ideal images must have:
1. Same lighting
2. Same skin tone
3. Good resolution

Tell-tale signs of a bad deepfake

Blurring compared to other features
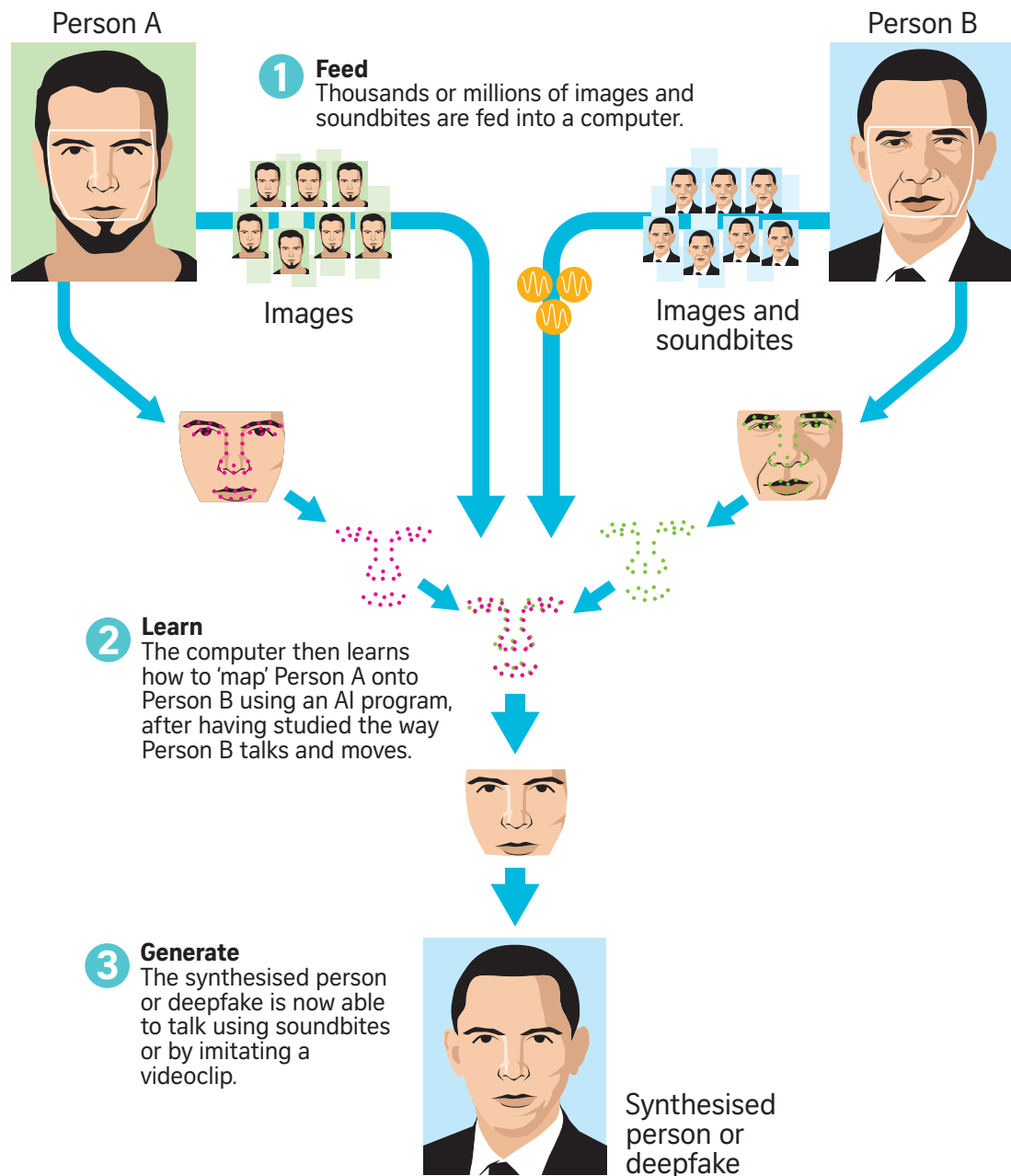
Change of skin tone near edge of face

Double chin, eyebrows or double edges on the face

Image flicks

WHAT DEEPFAKES ARE USED FOR

While deepfakes were intended to generate some laughs at first, images of celebrities have appeared on porn sites.

WHY WE SHOULD BE WORRIED

Security experts warn that deepfake programs are easily available and may pose a risk to political campaigns, elections and security.