

RSA® Conference 2020

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HUMAN
ELEMENT

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Look Who's Talking: How Fraudsters Steal Voices and Make Billions



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#RSAC

MARKET FORCES ALTERING STRATEGIES



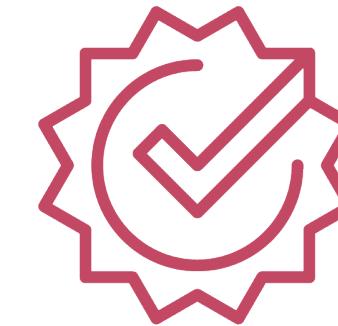
Multigenerational Customers

Different preferences
Different use of technology
Different expectation on CX



Voice as a Channel

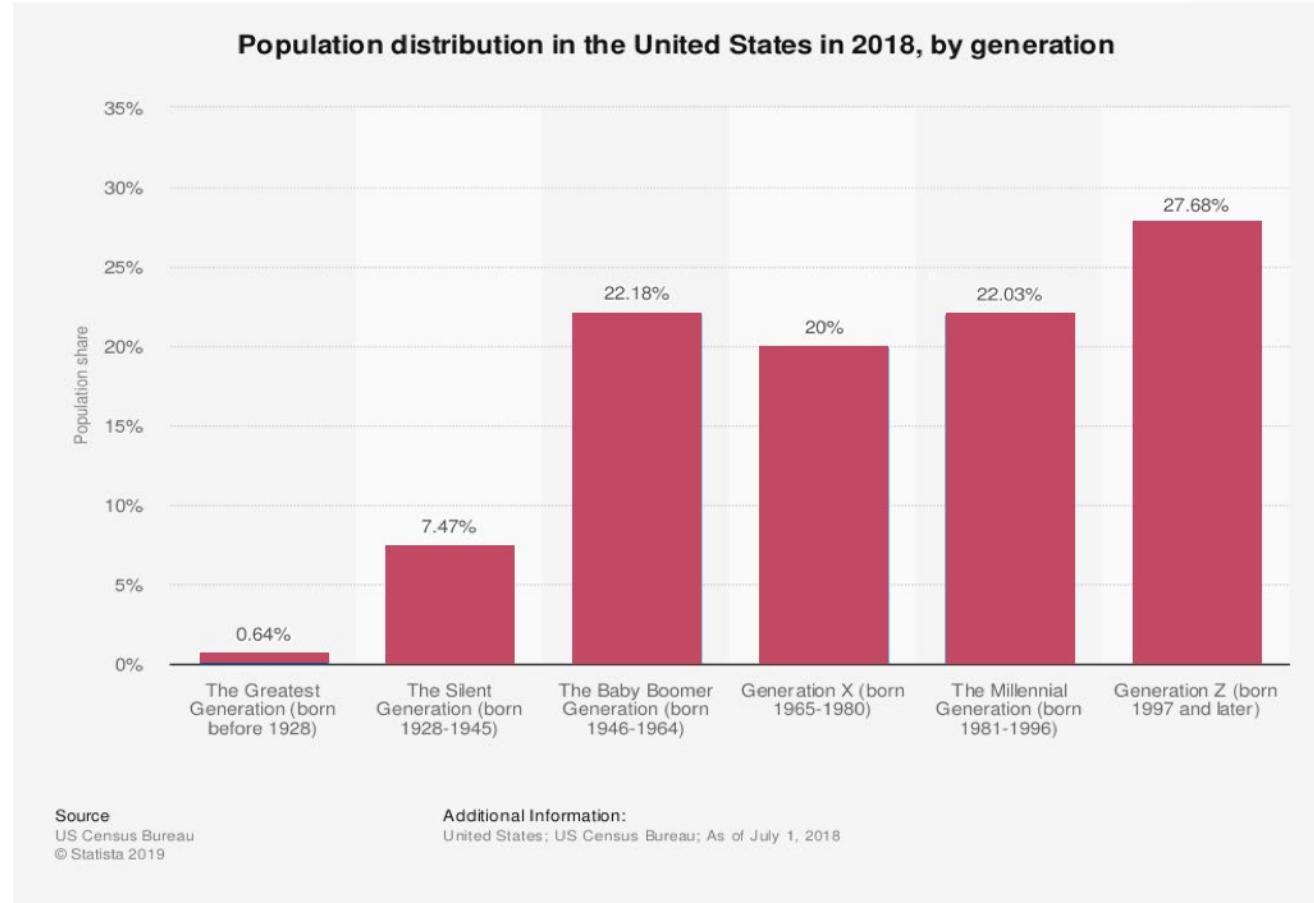
More usage of Voice
Creation of new voice devices
Phone channel is still most preferred



CX Becomes Strategic

- Business will compete on CX over product and price
- CX will start to impact revenue and loyalty
- Customers will churn based on 3 or fewer poor experiences

SERVING FIVE GENERATIONS OF CUSTOMERS



- Calls - 48%, Email - 24%
- 57% of baby boomers and Gen Z prefer calls
- 55% believe calls solve problem quickest

VOICE IS PERSUASIVE



70%
Have used a voice assistant



40%
Have tried voice commerce



49%
refers phone channel

CUSTOMER EXPERIENCE IS STRATEGIC



Now Strategic Imperative



Causes Churn Quickly



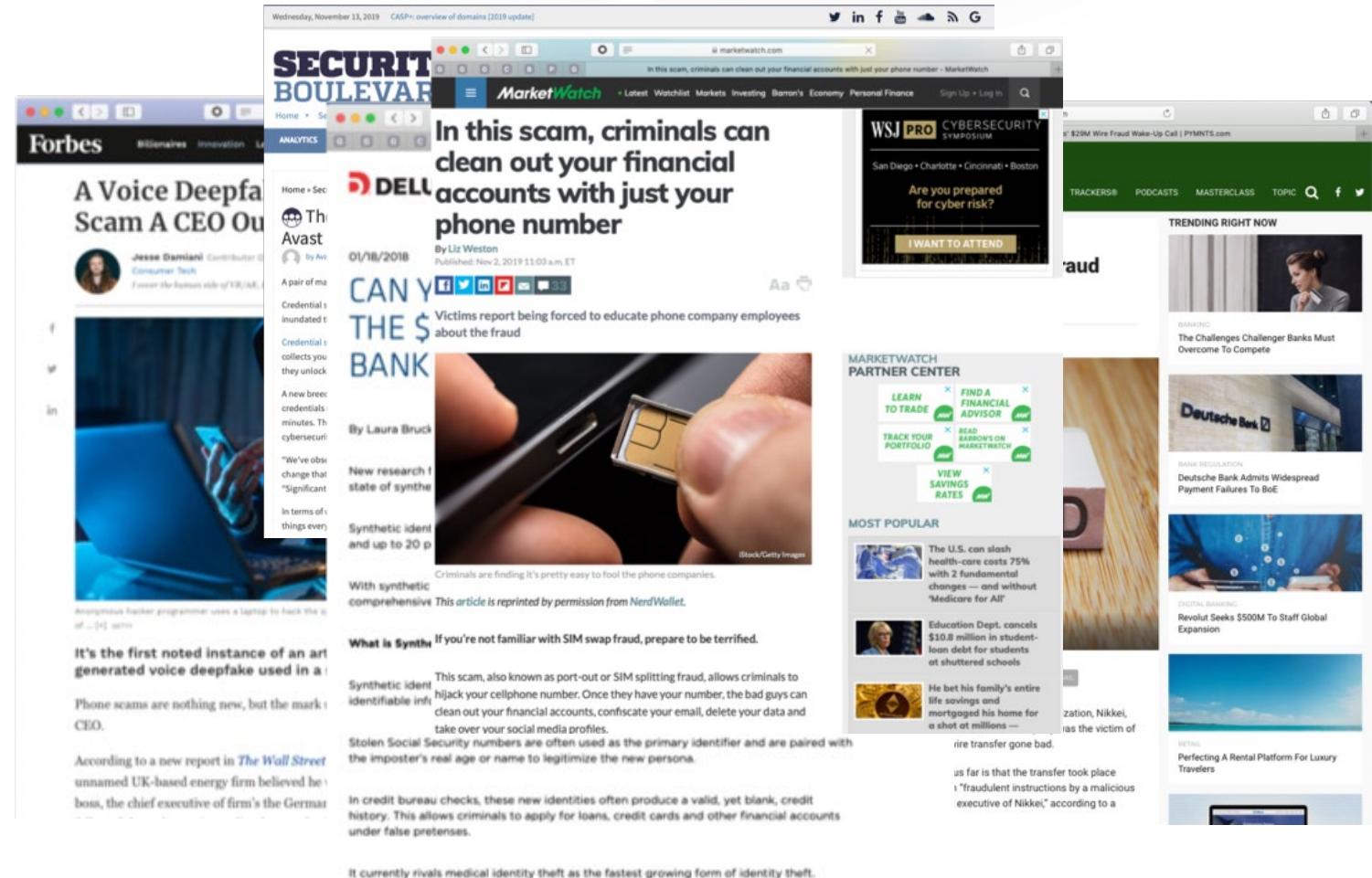
20% Revenue Impact



Personalization vs. Speed

FRAUD CONTINUES TO ESCALATE AND EVOLVE

- Phone Fraud is Increasing
- Data breaches fuel Account takeover
- Synthetic Identity becomes the fastest growing financial crime in the US
- Deepfake audio and video starting to impact enterprises
-and on and on



INNOVATION BY CHANNEL

SINCE 00'S

Bot Mitigation

Behavioral Analytics

Cloud DNS

CDN

DDoS Scrubber

IPv4 & IPv6 Peers

WAF

Load Balancer

IPS/IDS

SINCE 00'S

Agent KBAs



Web & Mobile

Multiple layers of security between client's device and browser to on premise equipment.



Call Center

Anti-fraud and authentication reliant on what callers know (single factor detection).

COST OF VOICE FRAUD TODAY

Fraud Loss



\$14B

Annual loss caused by fraud

Reputation Risk



41%

Consumers blame the brand for fraud happening

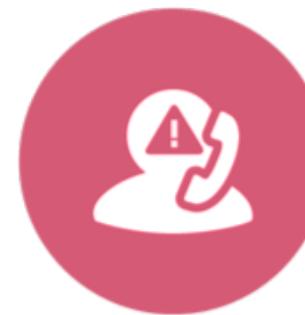
High Operations Cost



\$1M

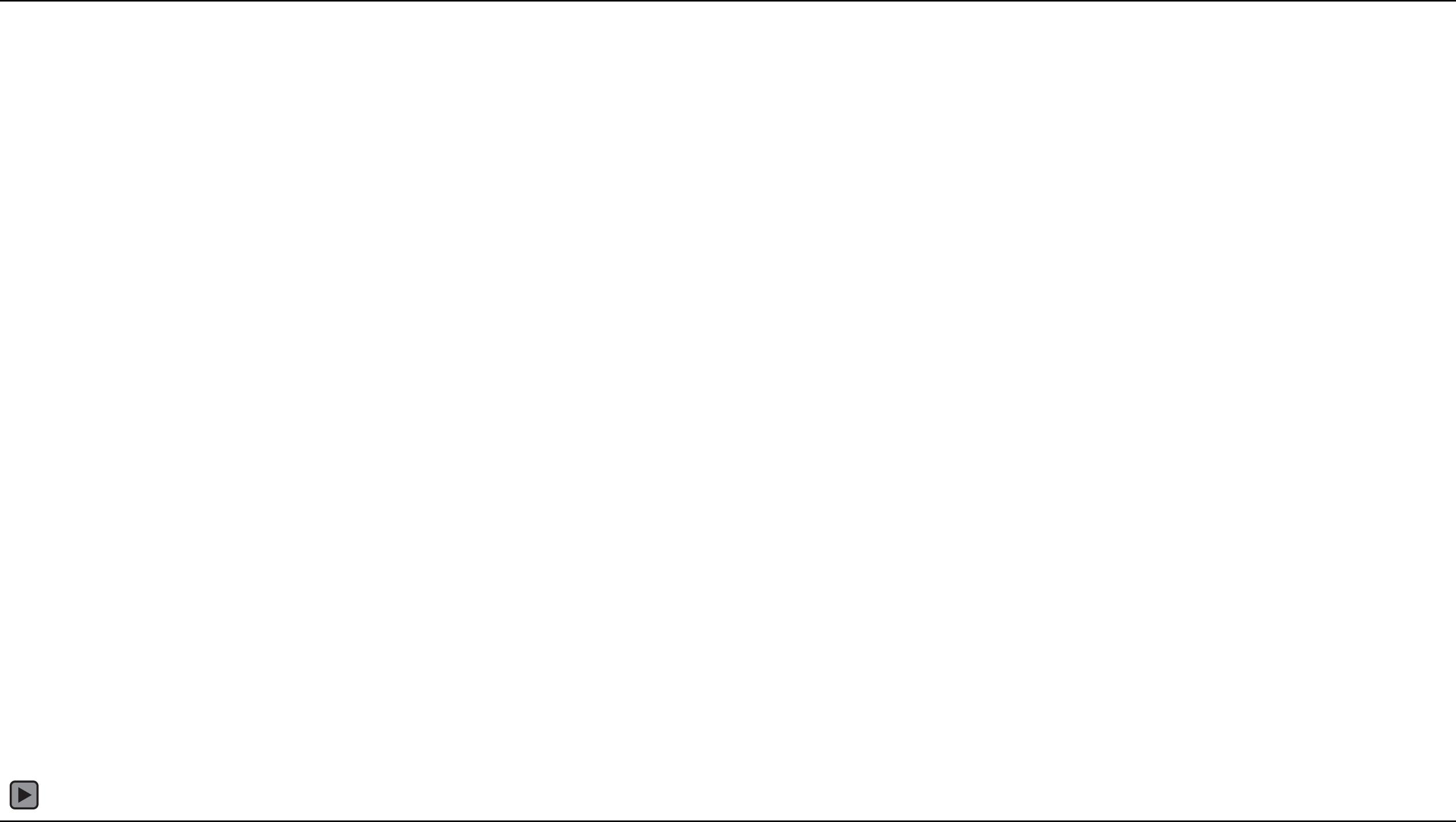
Annual expense from 1 second

Poor Customer Experience



30%

of callers unable to authenticate due to KBA



STRONG ECONOMIC INCENTIVES

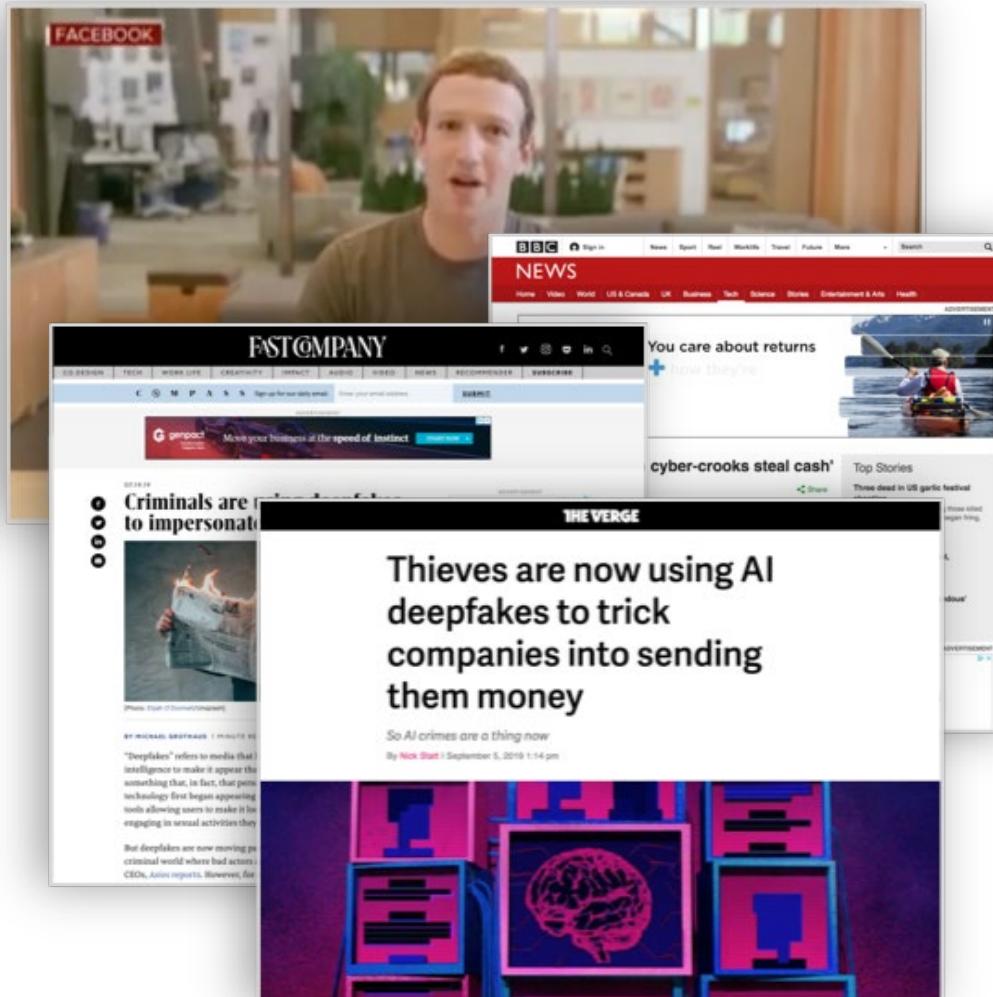


“ The Federal Trade Commission thinks a 5 billion dollar fine is going to stop us from violating people's privacy. Suckers. ”



Synthesized Mark Zuckerberg

ATTACKS - THREAT TO THE PRIVATE SECTOR



August 30th, 2019: Criminals used AI-based software to impersonate a chief executive's voice and demand a fraudulent transfer of €220,000 (\$243,000). The CEO of a U.K.-based energy firm thought he was speaking on the phone with his boss, the chief executive of the firm's German parent company, who asked him to send the funds to a Hungarian supplier.

July 19th, 2019: BBC reported on three successful audio attacks on private companies. In each, a company's "CEO" called a senior financial officer to request an urgent money transfer. Millions of dollars were stolen from each company, whose names were not revealed.

June 11th, 2019: A fake video of Mark Zuckerberg giving a sinister speech about the power of Facebook has been posted to Instagram. The company previously said it would not remove this type of video.

FAKE PRESIDENT FR

Someone purporting to be a senior officer of the company, typically the COO, CFO or Chief Executive



Win the confidence of the target

Publicly Available Data

Company Website

Social Media

Private Data (Intranet)

Data Breach

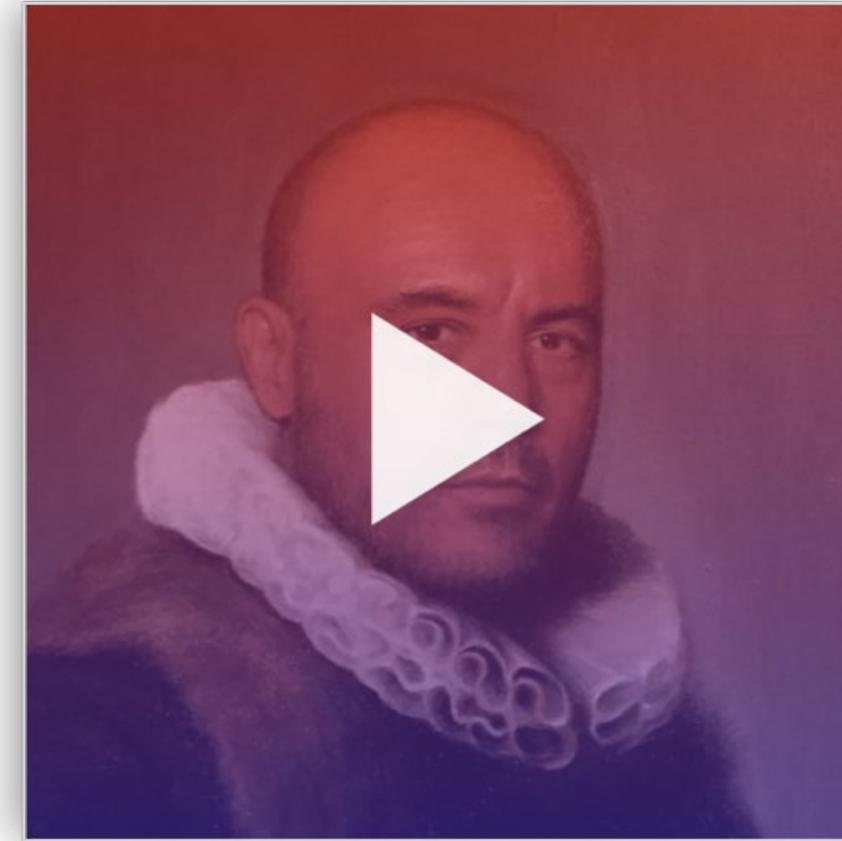
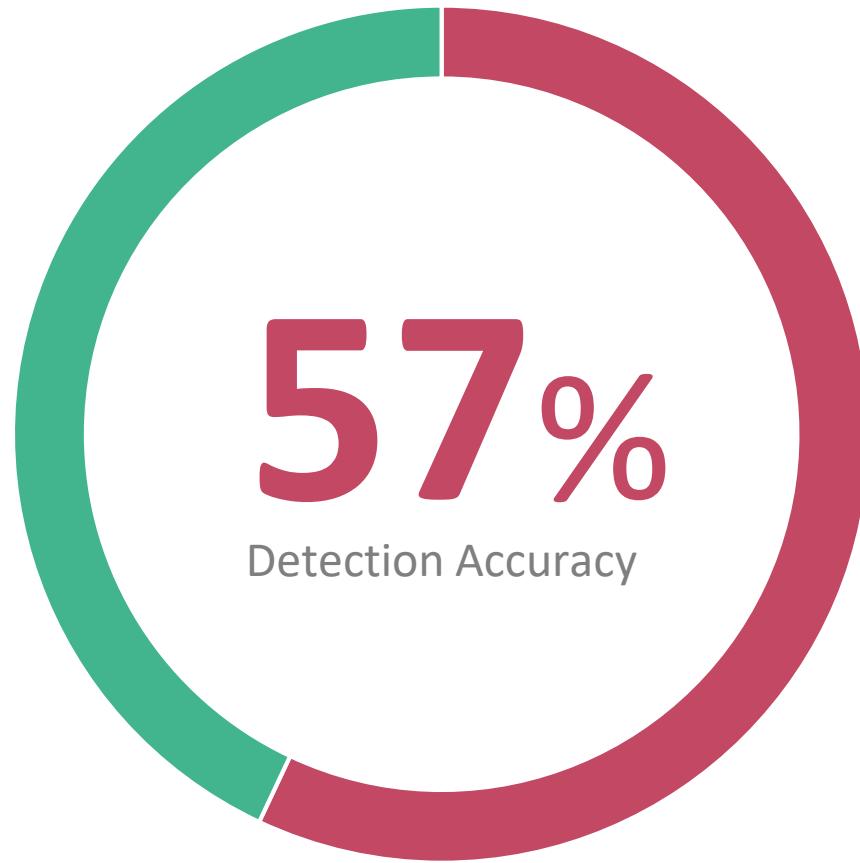
Physical Access

Email Compromise

Audio (e.g. meetings)

Someone in the accounts department with responsibility for making payments

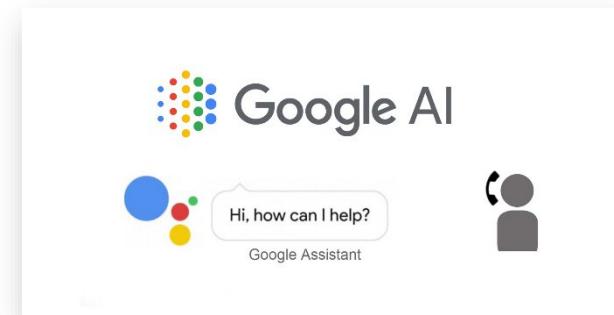
HUMAN VS. MACHINE SURVEY



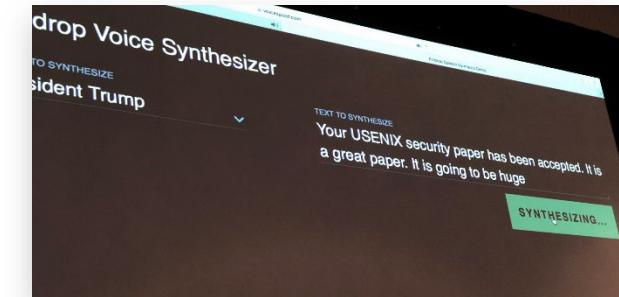
CURRENT SOLUTIONS: SYNTHETIC SPEECH DETECTION



Speech Synthesis from Lyrebird



Detection of Wavenet and Tacotron 2



Custom Speech Synthesis Engine

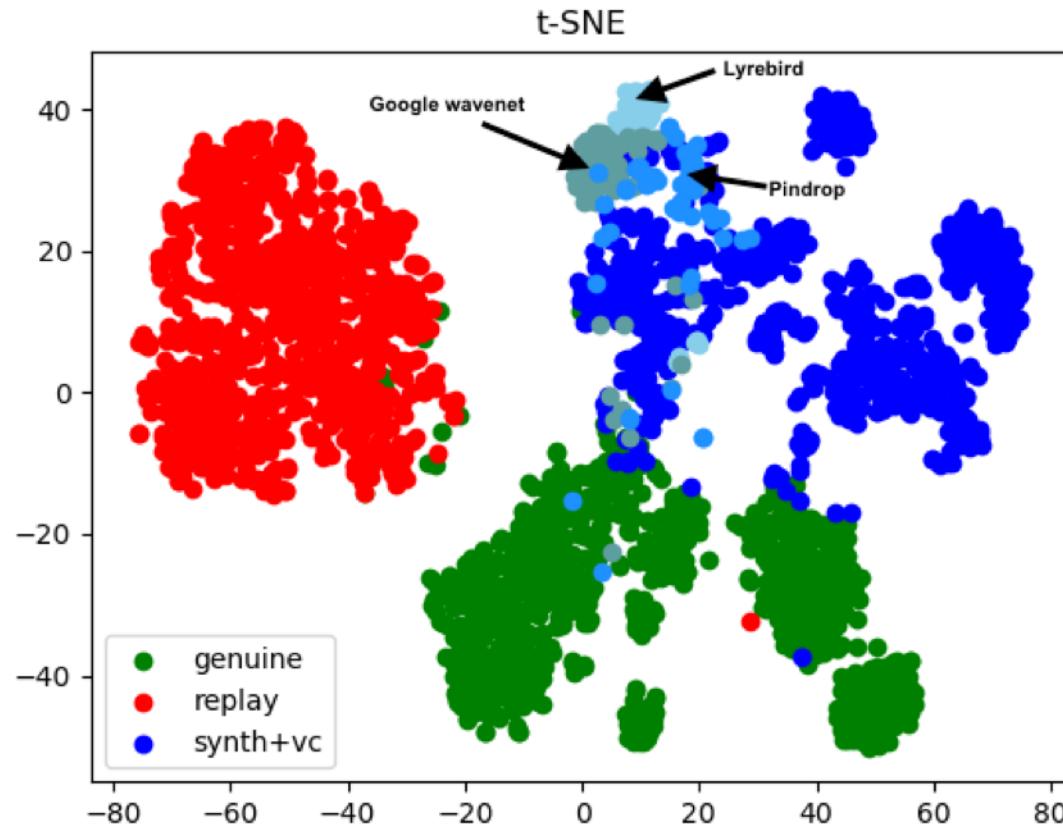
DETECTING DEEPFAKES

US Patent App.

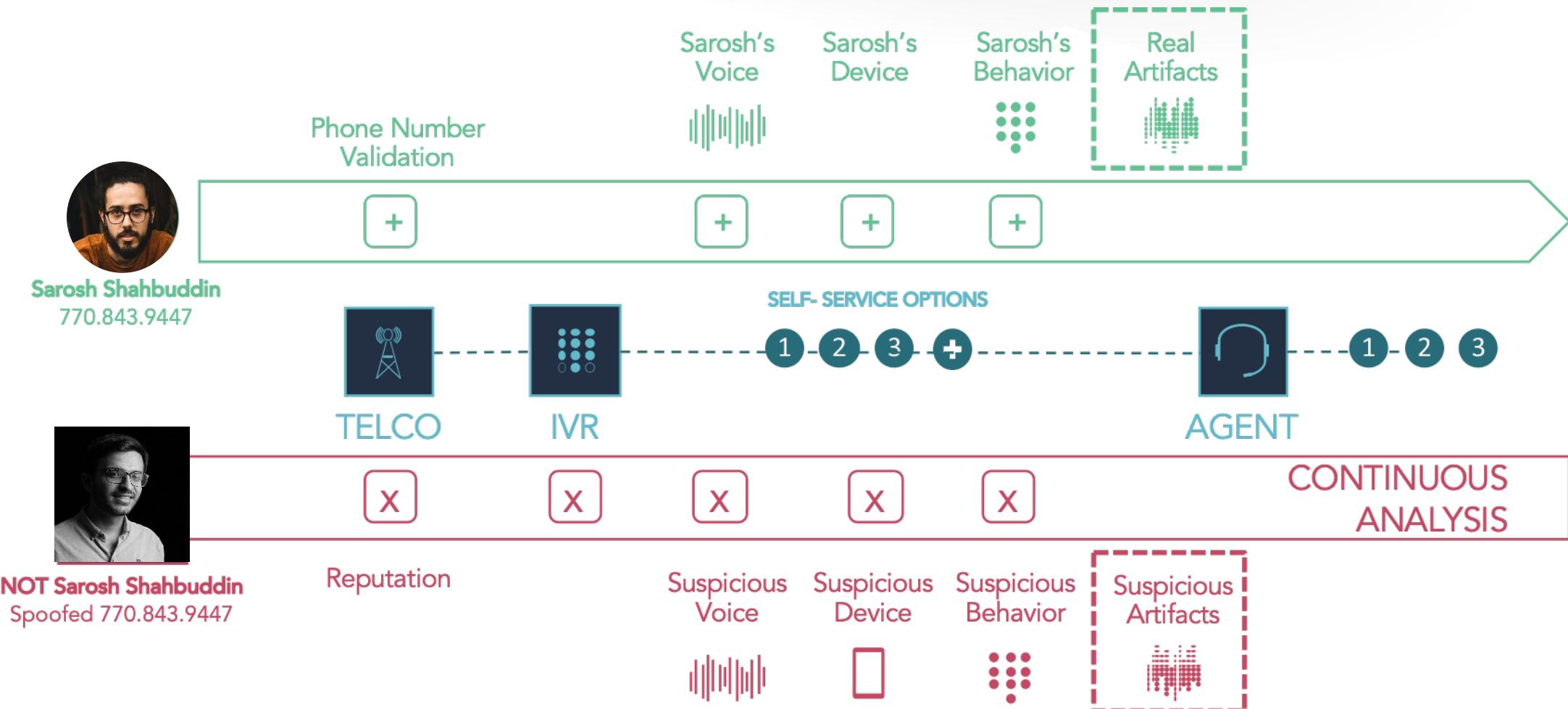
15/910,387: Method and apparatus for detecting spoofing conditions (March 2, 2018)

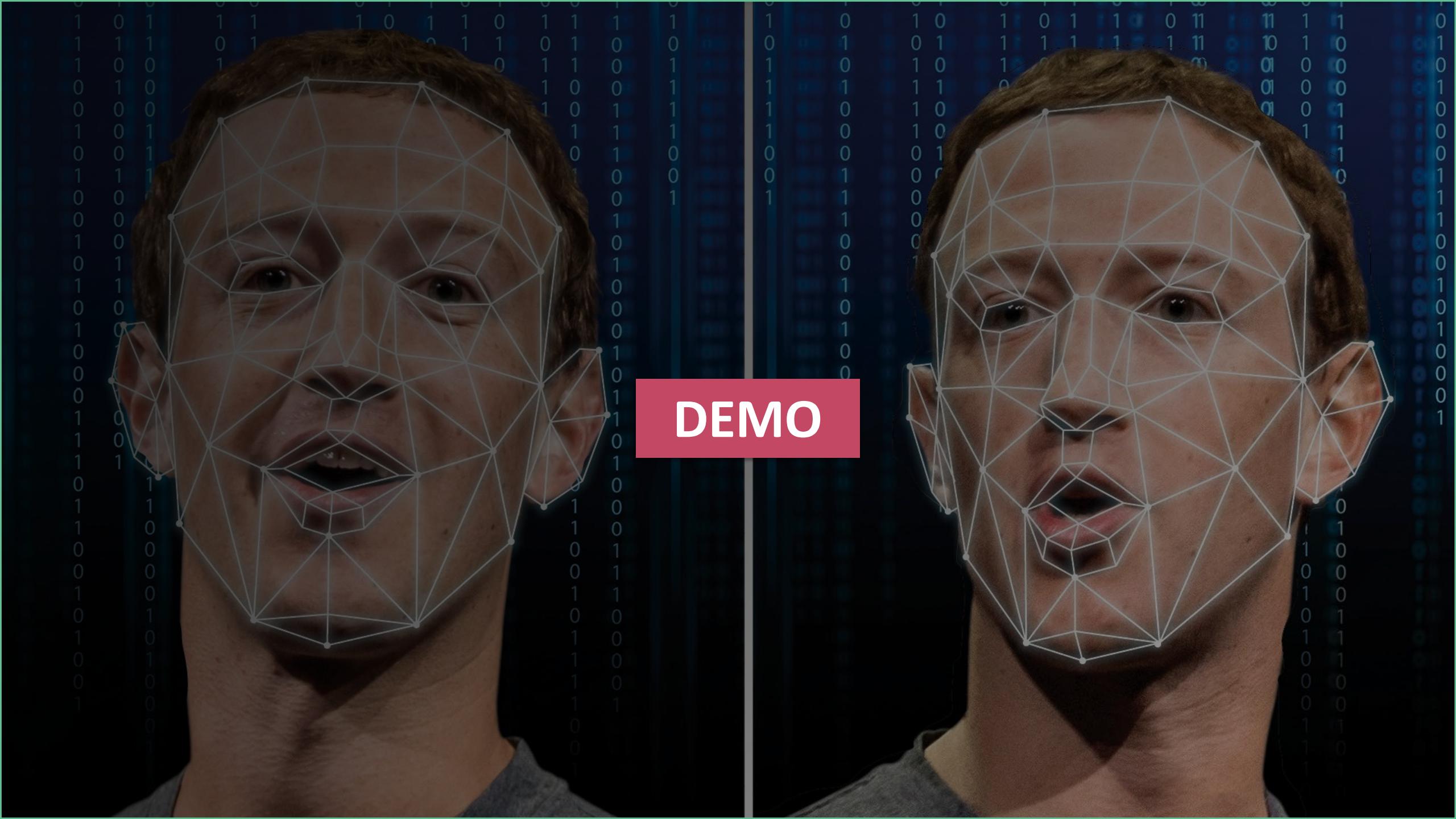
Trained on various voice spoofing attacks including most recent Deepfake attacks

Among Top performing systems at ASVspoof 2019



NEW BINARY CLASSIFIER FOR SYNTHETIC SPEECH





DEMO