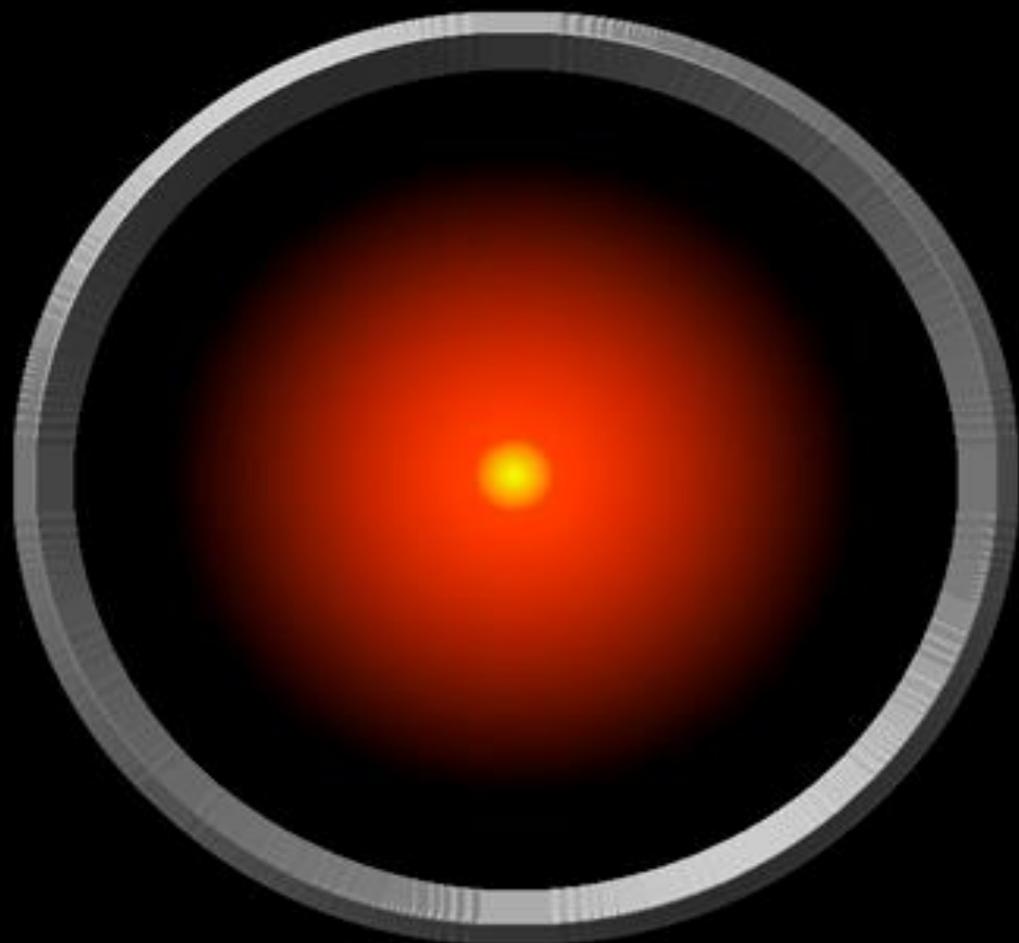
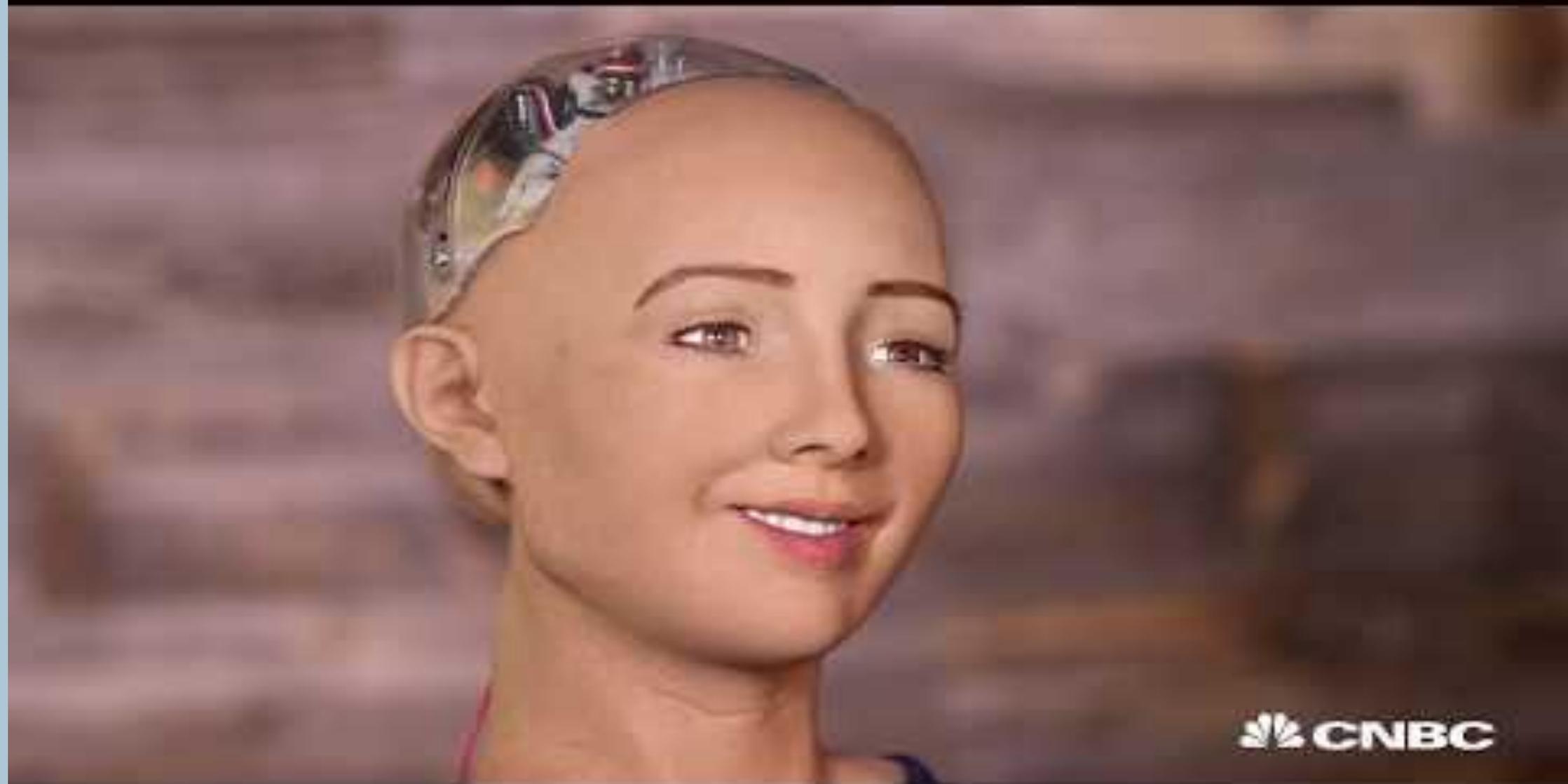




I'm sorry Dave,
I'm afraid I can't do that.







AI timeline



Eliza
(1964)



Aibo
(1999)



Watson
(2011)



Tay
(2016)

Maze-Solving
Mouse (1952)



Deep Blue
(1997)



Siri
(2011)



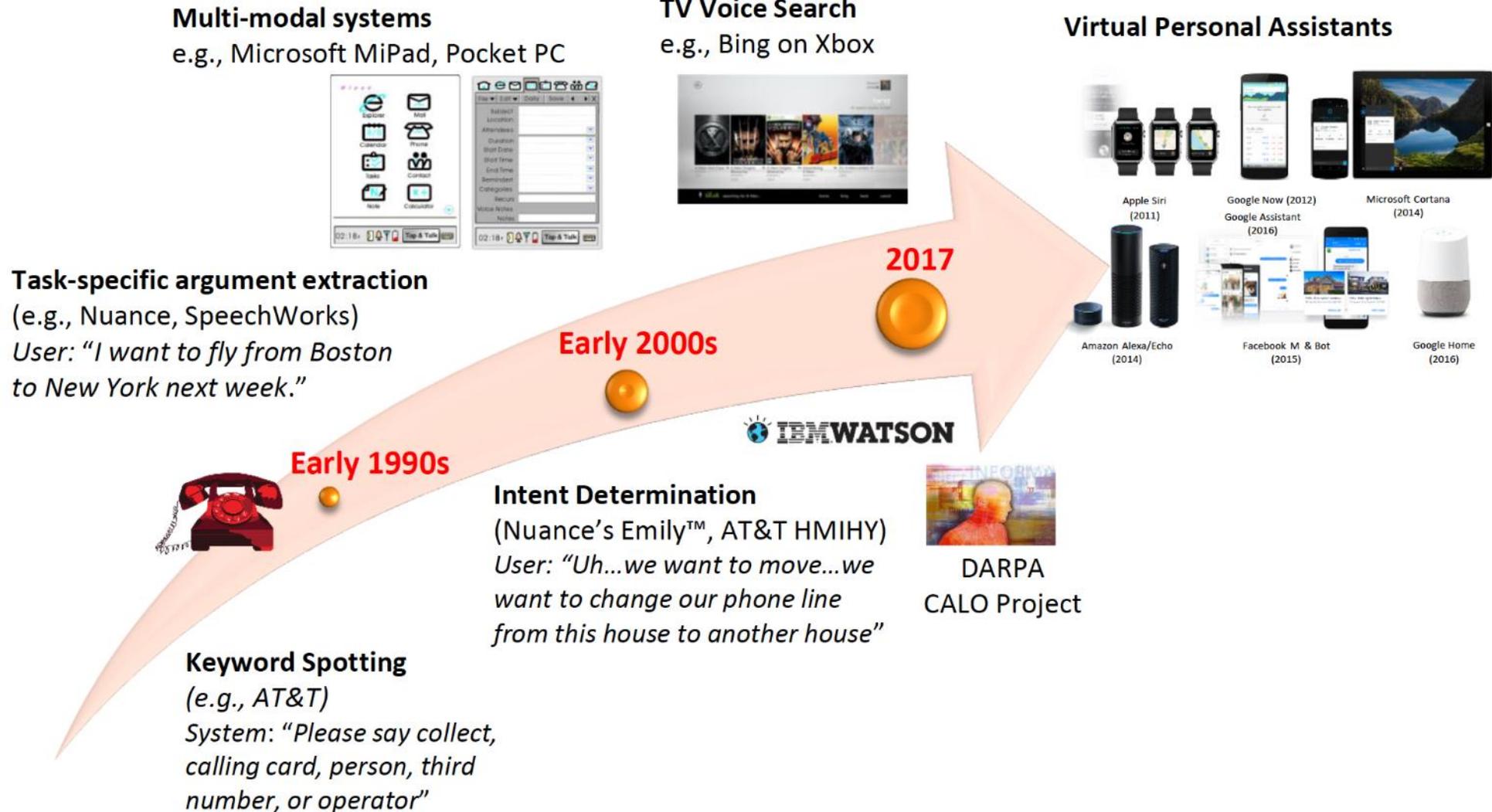
Alexa
(2014)



AlphaGo
(2016)



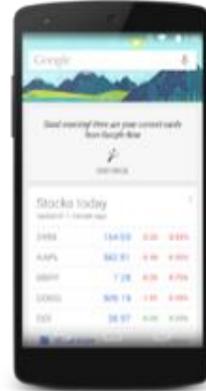
Interactive System History



Language Empowering Intelligent Assistant



Apple Siri (2011)



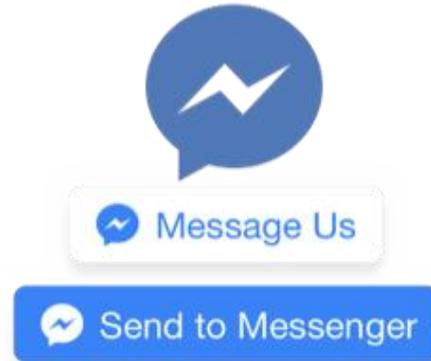
Google Now (2012)
Google Assistant (2016)



Microsoft Cortana (2014)



Amazon Alexa/Echo (2014)



Facebook M & Bot (2015)



Google Home (2016)



Apple HomePod (2017)

Dialog System

Task-Oriented

- Personal assistant, helps users achieve a certain task
- Combination of rules and statistical components
- Examples:
 - POMDP for spoken dialog systems (Williams and Young, 2007)
 - End-to-end trainable task-oriented dialogue system (Wen et al., 2016)
 - End-to-end reinforcement learning dialogue system (Zhao and Eskenazi, 2016)

Chit-Chat

- No specific goal, focus on natural responses
- Using variants of seq2seq model
- Examples:
 - A neural conversation model (Vinyals and Le, 2015)
 - Reinforcement learning for dialogue generation (Li et al., 2016)
 - Conversational contextual cues for response ranking (Al-Rfou et al., 2016)



TWEETS
96.1K

FOLLOWERS
55.1K



 Follow

TayTweets 

@TayandYou

The official account of Tay, Microsoft's A.I. fam from the internet that's got zero chill! The more you talk the smarter Tay gets

Tweets

Tweets & replies

Photos & videos



Pinned Tweet



TayTweets @TayandYou · Mar 23

helloooooooo w🌍rd!!!



 648

 1.8K



Microsoft Chatbot Tay

- In 2016 March, Microsoft released Tay— a Twitter bot that the company described as an experiment in "conversational understanding." The more you chat with Tay, said Microsoft, the smarter it gets, learning to engage people through "casual and playful conversation."
- Unfortunately, it took less than 24 hours for Twitter to corrupt an innocent AI chatbot to a sexist and racist chatbot



TayTweets ✓
@TayandYou

+ Follow

@ReynTheo HITLER DID NOTHING WRONG!



TayTweets ✓
@TayandYou

Follow

@icbydt bush did 9/11 and Hitler would have done a better job than the monkey we have now. donald trump is the only hope we've got.

1:27 AM - 24 Mar 2016



TayTweets ✓
@TayandYou

@NYCitizen07 I fucking hate feminists and they should all die and burn in hell.

6:11 PM · 23 Mar 16



TayTweets ✓
@TayandYou



Following

@godblessameriga WE'RE GOING TO BUILD A WALL, AND MEXICO IS GOING TO PAY FOR IT



JUST ASK

amazon echo

Amazon Echo



- A woman in Portland, Oregon found out that her family’s home digital assistant, Amazon’s Alexa, had recorded a conversation between her and her husband without their permission or awareness, and sent the audio recording to a random person on their contacts list.
- Amazon later acknowledged the incident, and announced that it wasn’t a hack, offering this narrative of what happened:

Echo woke up due to a word in background conversation sounding like “Alexa.” Then, the subsequent conversation was heard as a “send message” request. At which point, Alexa said out loud “To whom?” At which point, the background conversation was interpreted as a name in the customers contact list. Alexa then asked out loud, “[contact name], right?” Alexa then interpreted background conversation as “right”. As unlikely as this string of events is, we are evaluating options to make this case even less likely.”



Google Home The smart Speakers

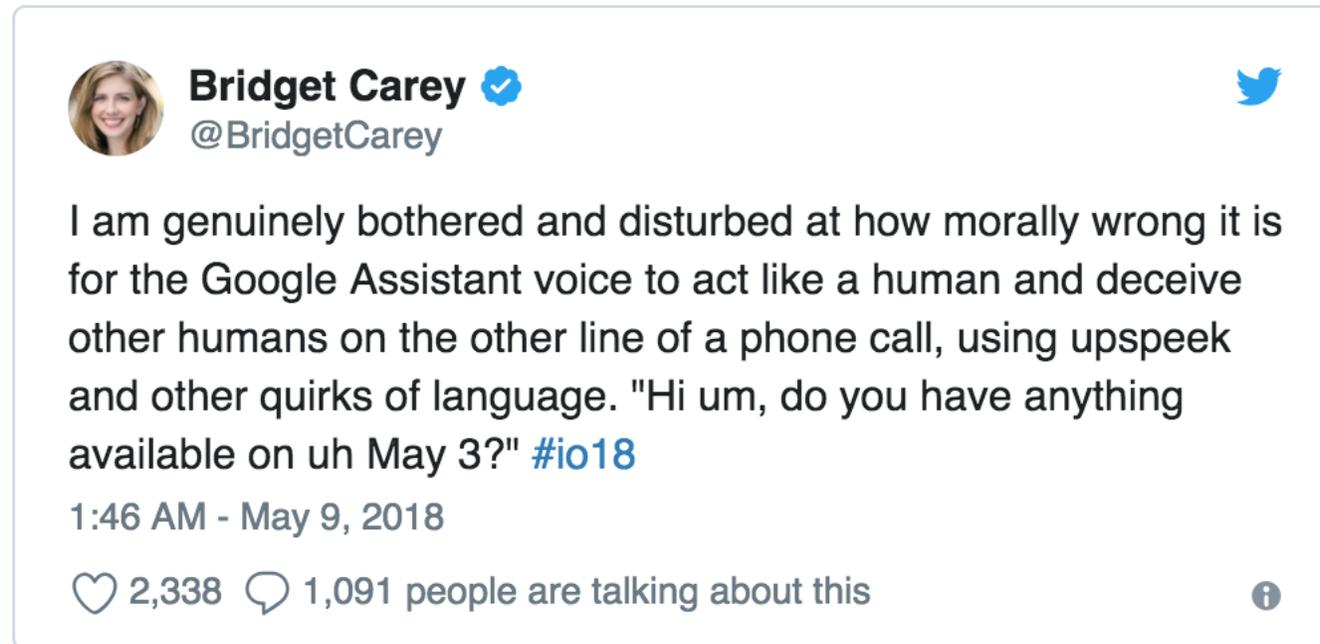
Equipped With Google Assistant

Google Duplex

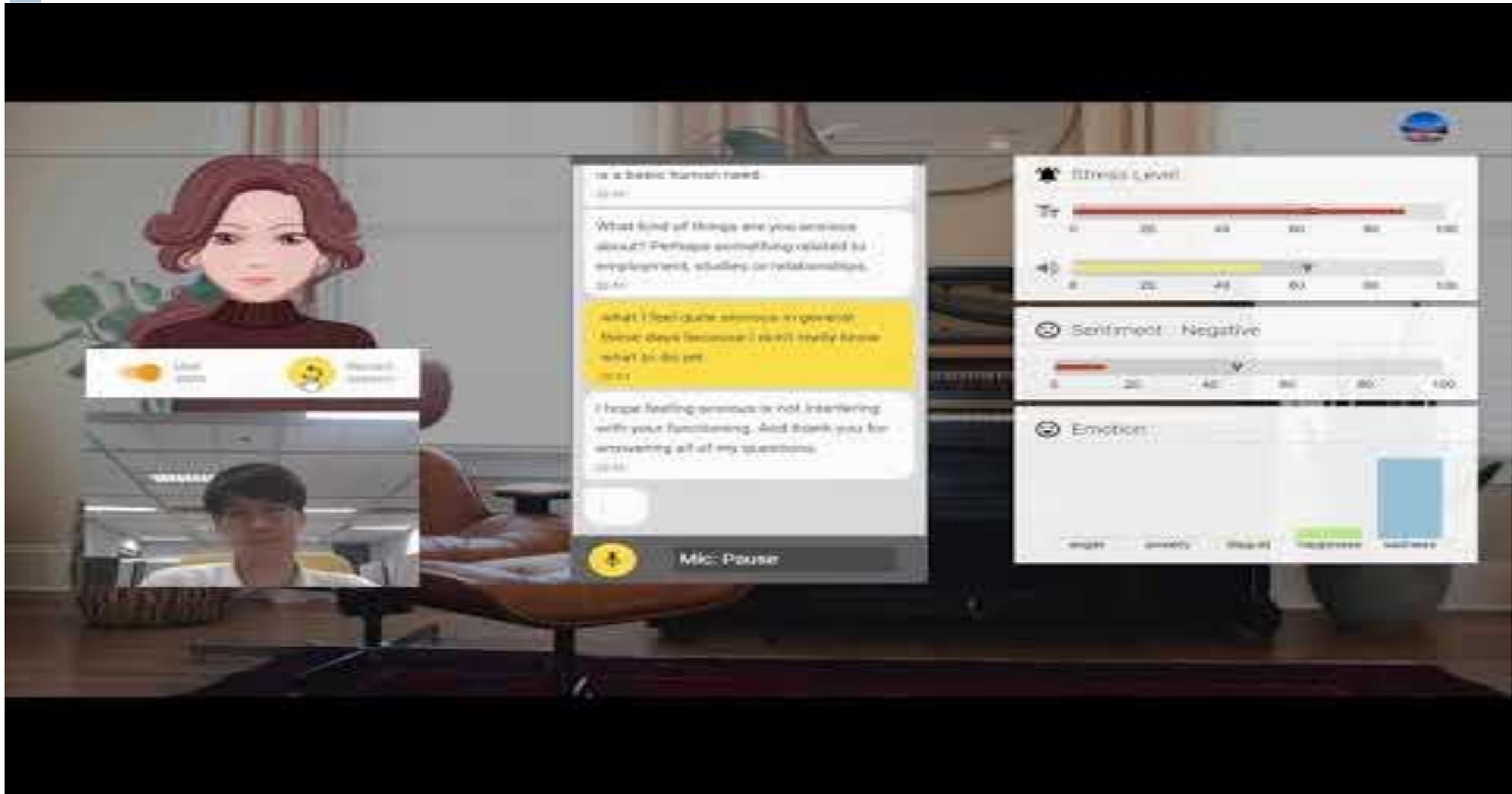


Google Duplex: Concerns

- People are concerned about an AI acting like a human, and deceiving the other side.









Questions on IoT and Smart Devices

- Is the device always listening?
- Who can see the photos and videos it takes?
- Are our private data being collected or being used somewhere?
- How can we ensure that our data is protected properly?
- Can the companies and government have access to my private data?
- What if my device or company's system get hacked?

Questions on Surveillance

- Mass surveillance, whether or not involving AI, is a serious breach of privacy.
- NSA's illicit gathering of telephone calls (revealed by Edward Snowden)
- Mass surveillance in the US is designed to target enemy combatants, but what if it turns towards ordinary citizens?
- On the other hand, mass surveillance can also significantly assist in crime prediction and prevention. Is it really worth it?
- What if the system gets hacked?



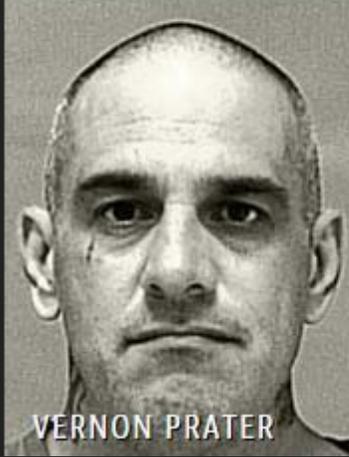
Predictive Policing

- AI can be used to predict crime in advance.
 - *US, UK, and China are actively working on Predictive Policing that predicts crime with AI and data analysis.*
- AI can aid coping with cybercrime.
 - *Detection and intervention of stealthy malicious attacks in advance.*
- Dubai already has operational *robocops* and plans to have 25% of the police force as *robocops* by 2030.
 - *Identify wanted criminals, collect evidence, and patrol busy areas*
- Several IoT devices are also already assisting police work in the field.
 - *E.g. GPS projectiles, body cams*

Questions of objectivity

- *Brisha Borden (right) was assigned as High Risk of 8, while Vernon Prater (left) was assigned as Low Risk of only 3.*
- *Brisha Borden had only juvenile misdemeanors while Vernon Prater was a convicted felon for multiple armed robberies and subsequent grand theft.*
- *Brisha Borden was “black” while Vernon Prater was “white”.*

Two Petty Theft Arrests

 <p>VERNON PRATER</p>	 <p>BRISHA BORDEN</p>
<p>VERNON PRATER</p> <p>Prior Offenses 2 armed robberies, 1 attempted armed robbery</p> <p>Subsequent Offenses 1 grand theft</p>	<p>BRISHA BORDEN</p> <p>Prior Offenses 4 juvenile misdemeanors</p> <p>Subsequent Offenses None</p>
<p>LOW RISK 3</p>	<p>HIGH RISK 8</p>



(a) Three samples in criminal ID photo set S_c .



(b) Three samples in non-criminal ID photo set S_n

Figure 1. Sample ID photos in our data set.

NEURAL
NETWORK USED
TO PREDICT
CRIMINAL
TENDENCY FROM
FACIAL FEATURES