

SOUS LE HAUT PATRONAGE DE SA MAJESTÉ LE ROI MOHAMMED VI

A large, abstract graphic on the left side of the slide features a complex network of orange and white dots connected by thin lines, forming a globe-like structure that suggests a global network or data flow.

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A stylized, metallic blue robotic hand is positioned in the upper right corner of the slide, pointing towards the title text.

Artificial intelligence: The Future of Software

DEVOXXTM
MOROCCO



NOVEMBER 14-16, 2017
@Casablanca Morocco

#DevoxxMA

Artificial Intelligence: The Future of Software

@MatthewRenze
#DevoxxMA



General AI



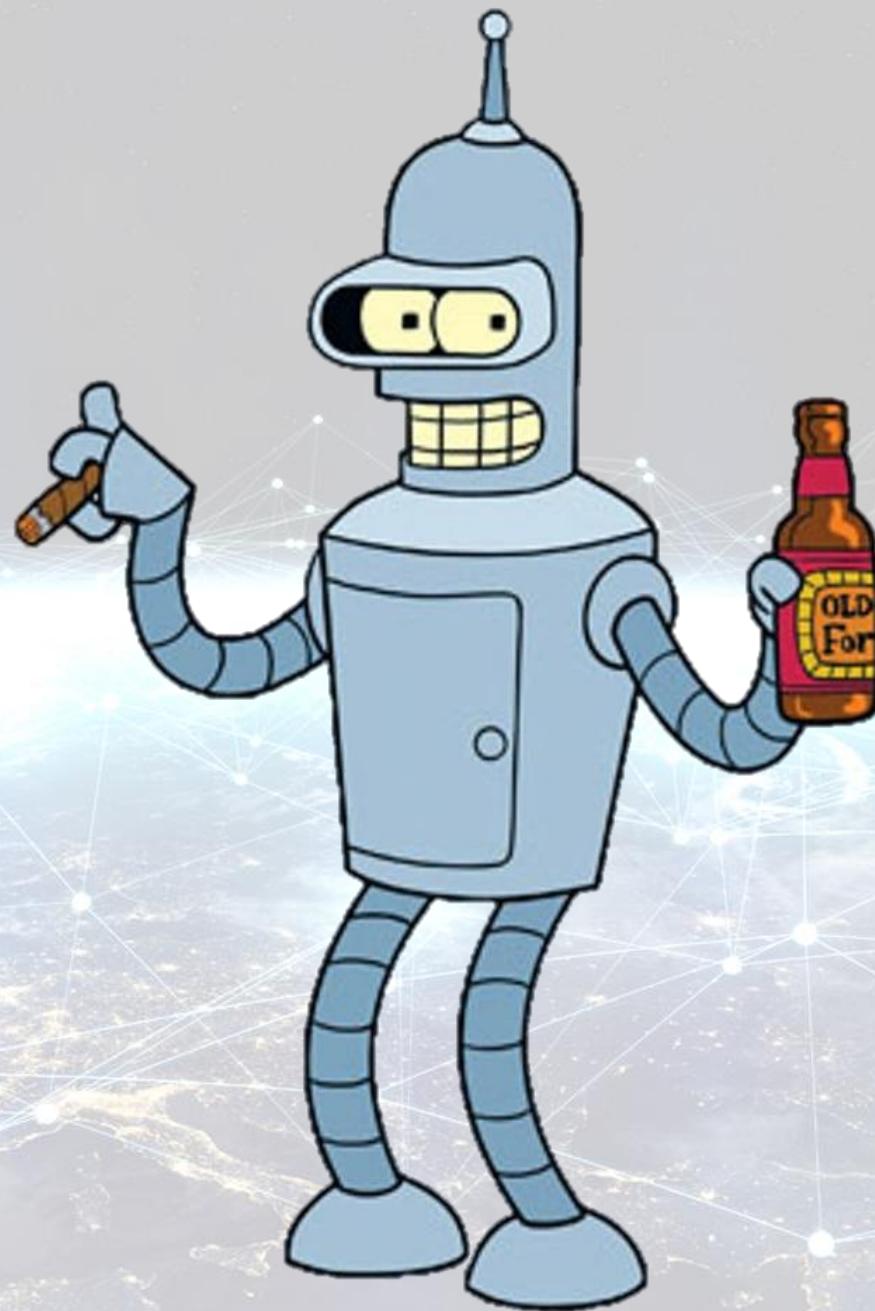


Source: IBM, Amazon, Google



Narrow AI

Source: IBM, Amazon, Google



A cartoon illustration of Bender, the blue-skinned robot from the TV show Futurama. He is standing on a stylized Earth with a network of white lines and dots representing a global communication or neural network. Bender is holding a cigar in his right hand and a bottle of Old Forester bourbon in his left hand. A large blue speech bubble originates from his head, containing the text "You meatbags had your chance!"

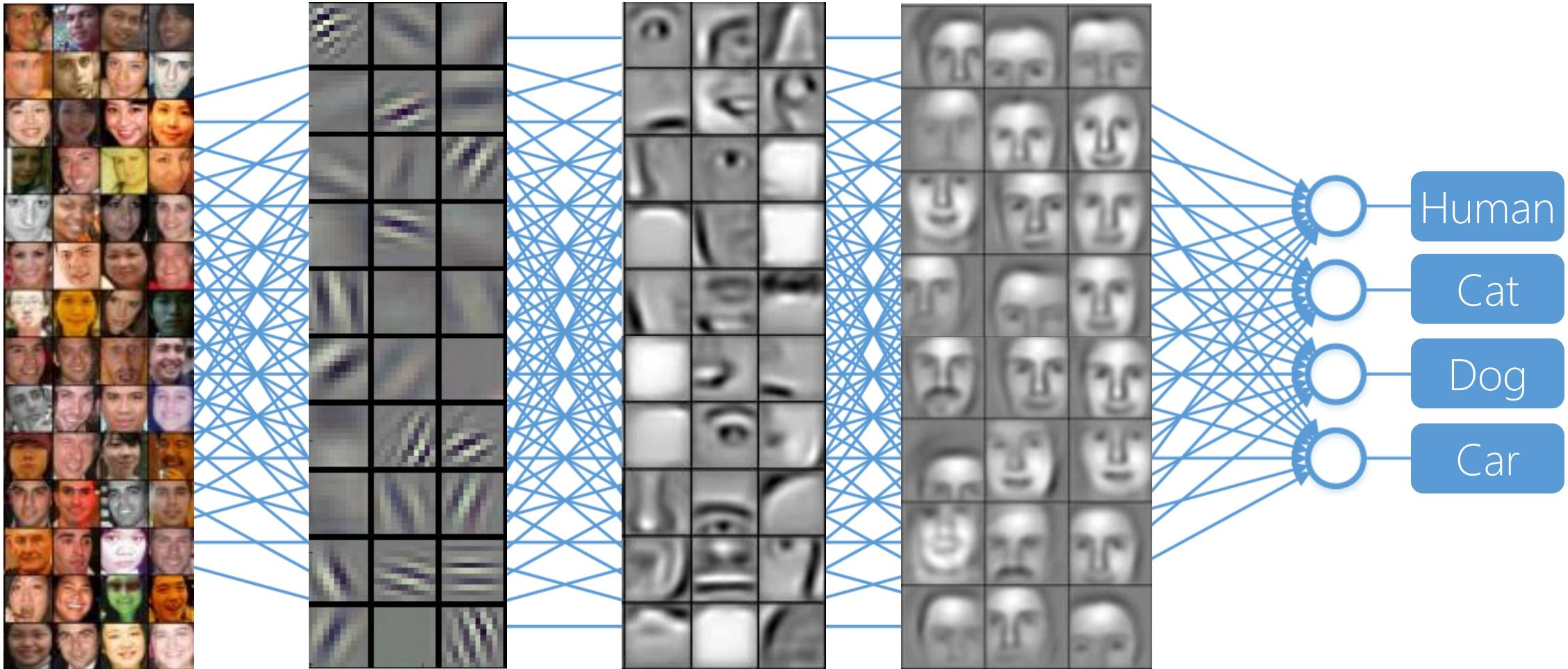
You meatbags
had your chance!



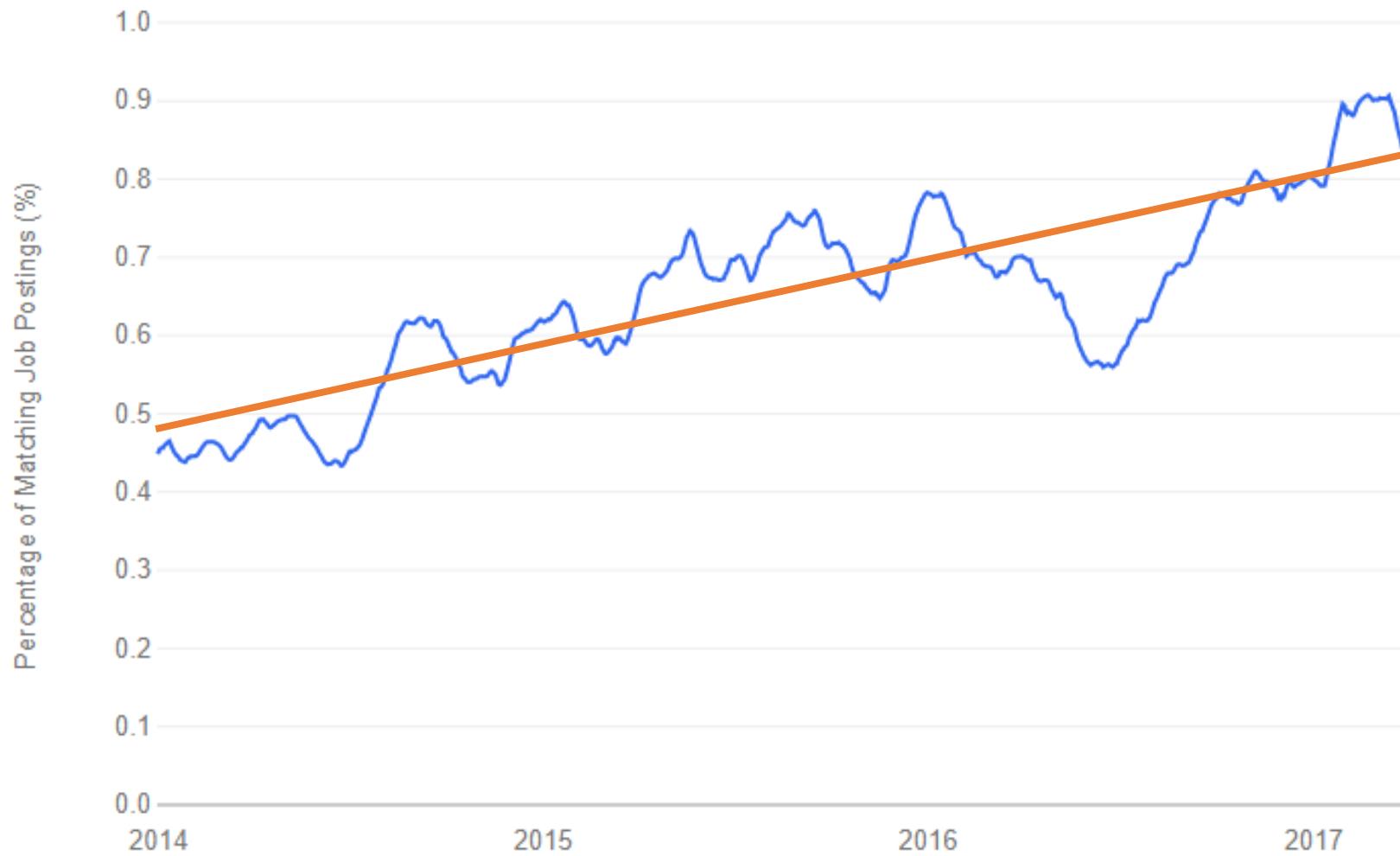






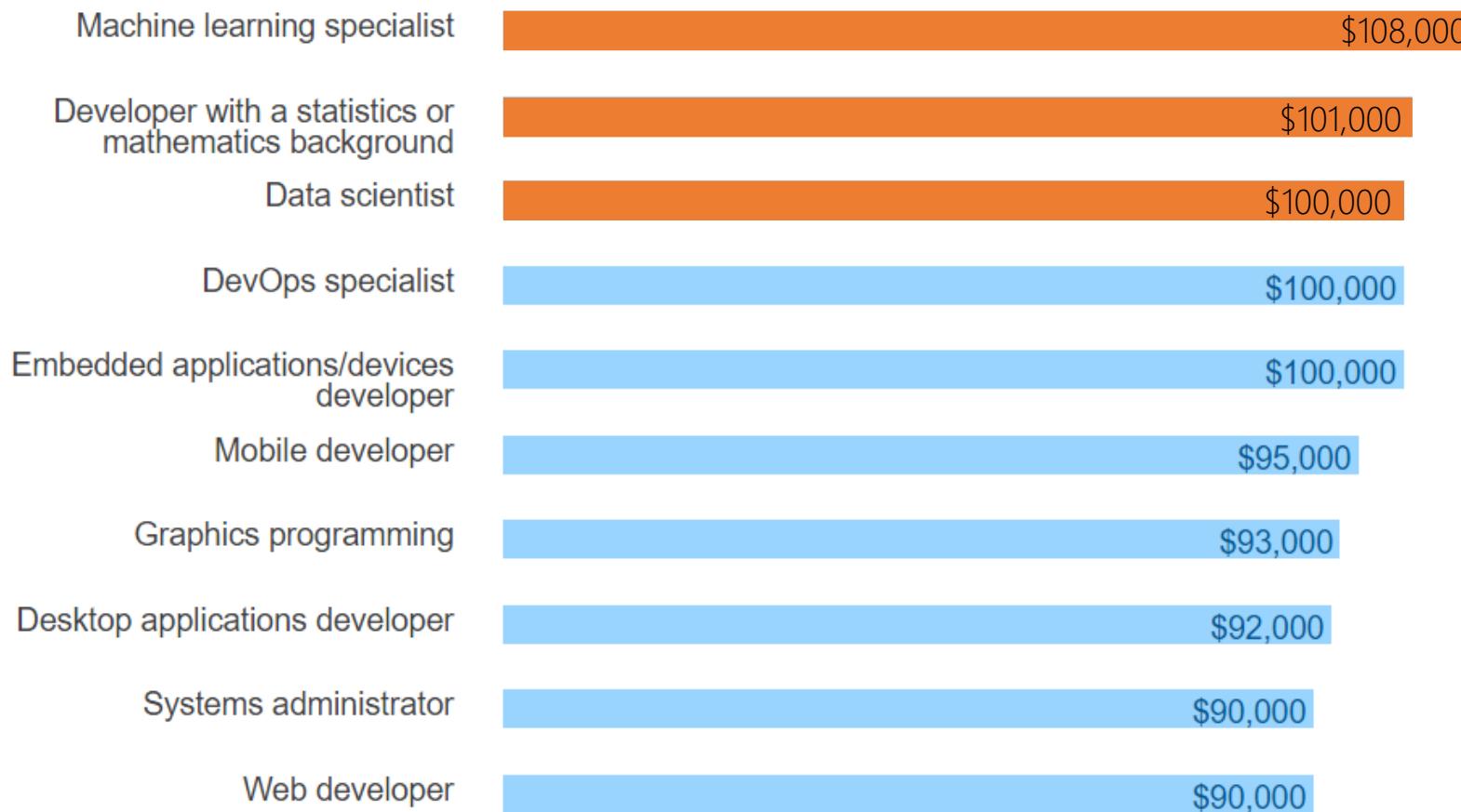


Job Postings for Machine Learning



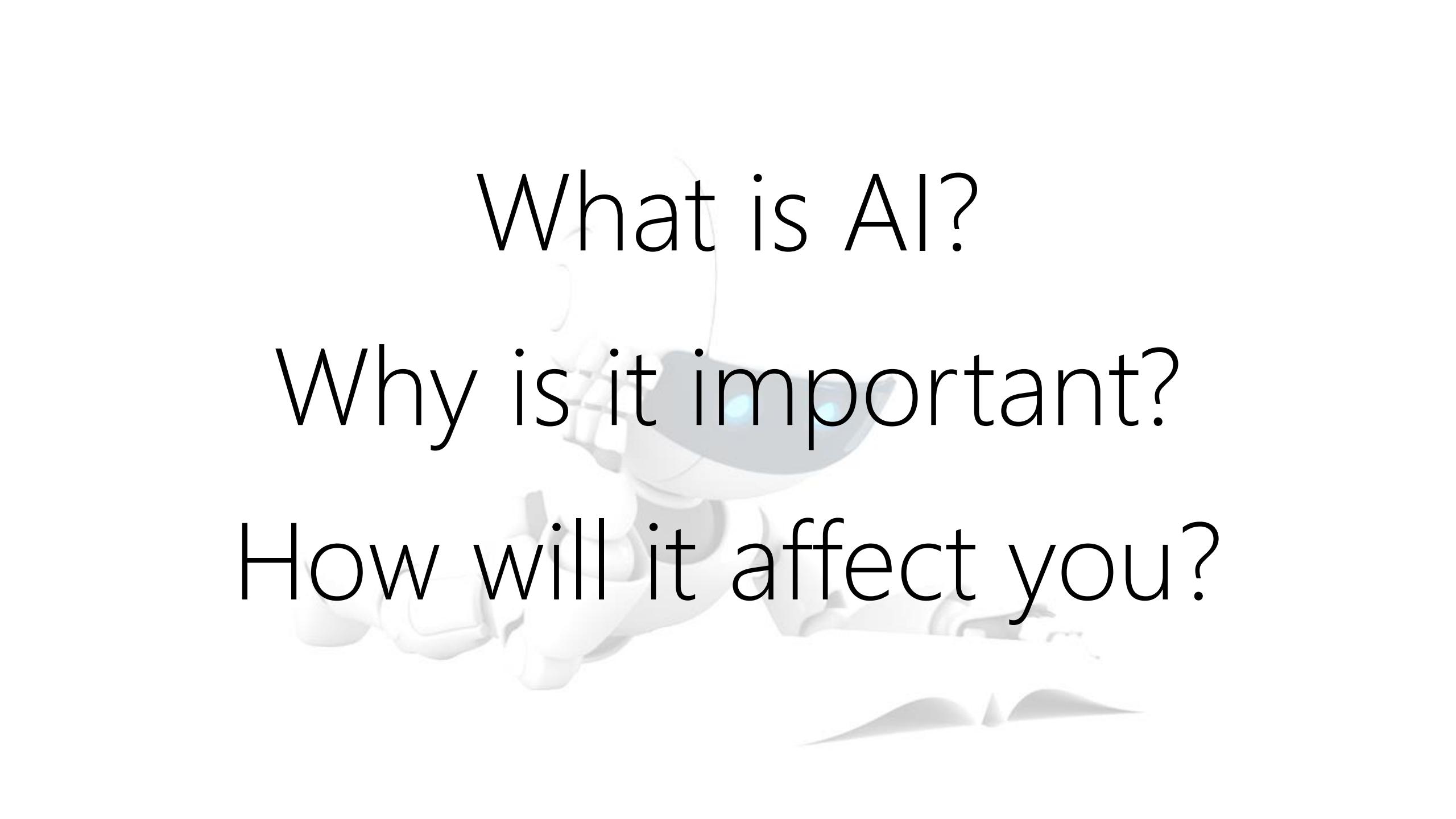
Source: Indeed.com

Average Salary by Job Type (USA)



Source: Stack Overflow 2017

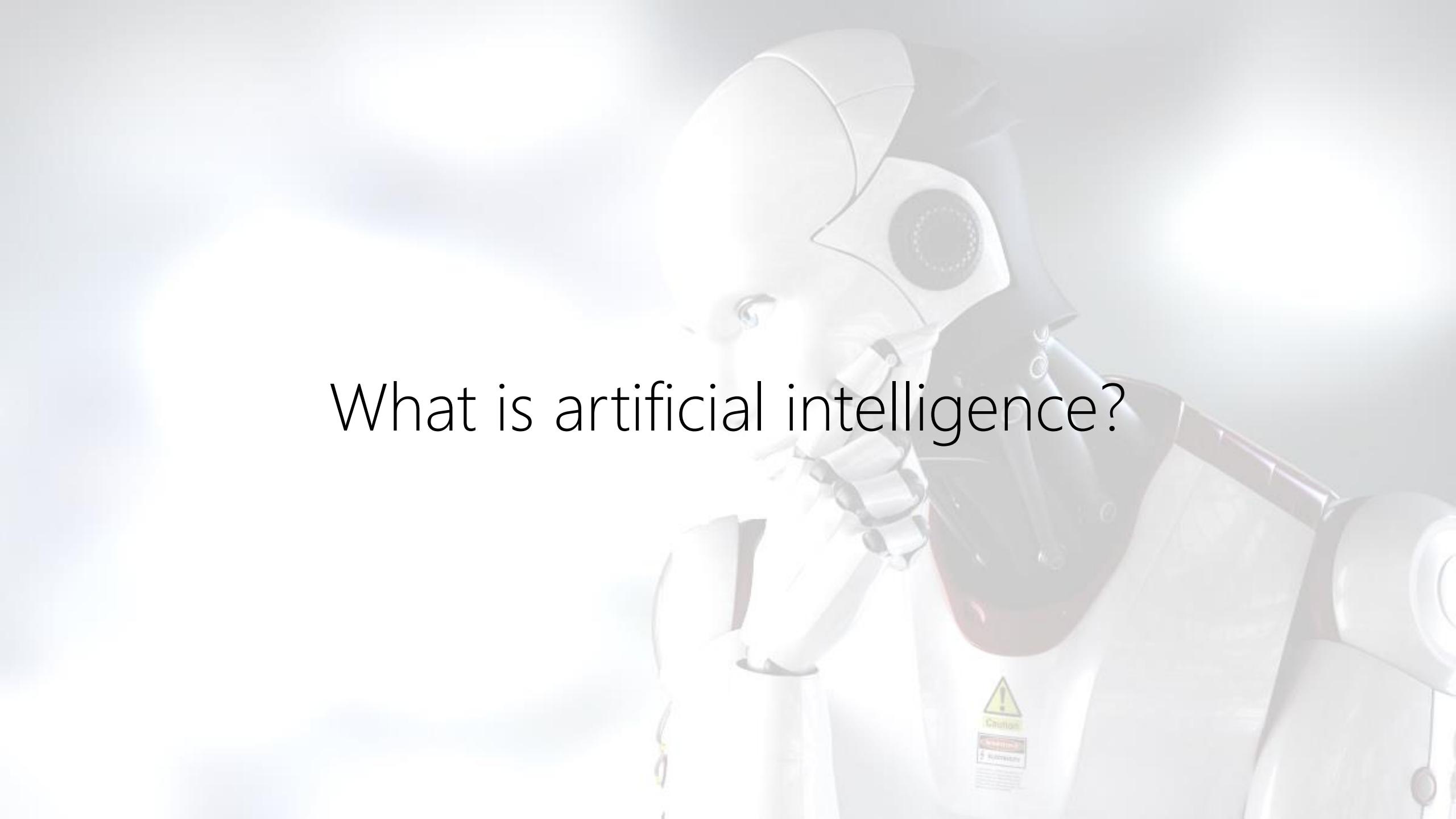




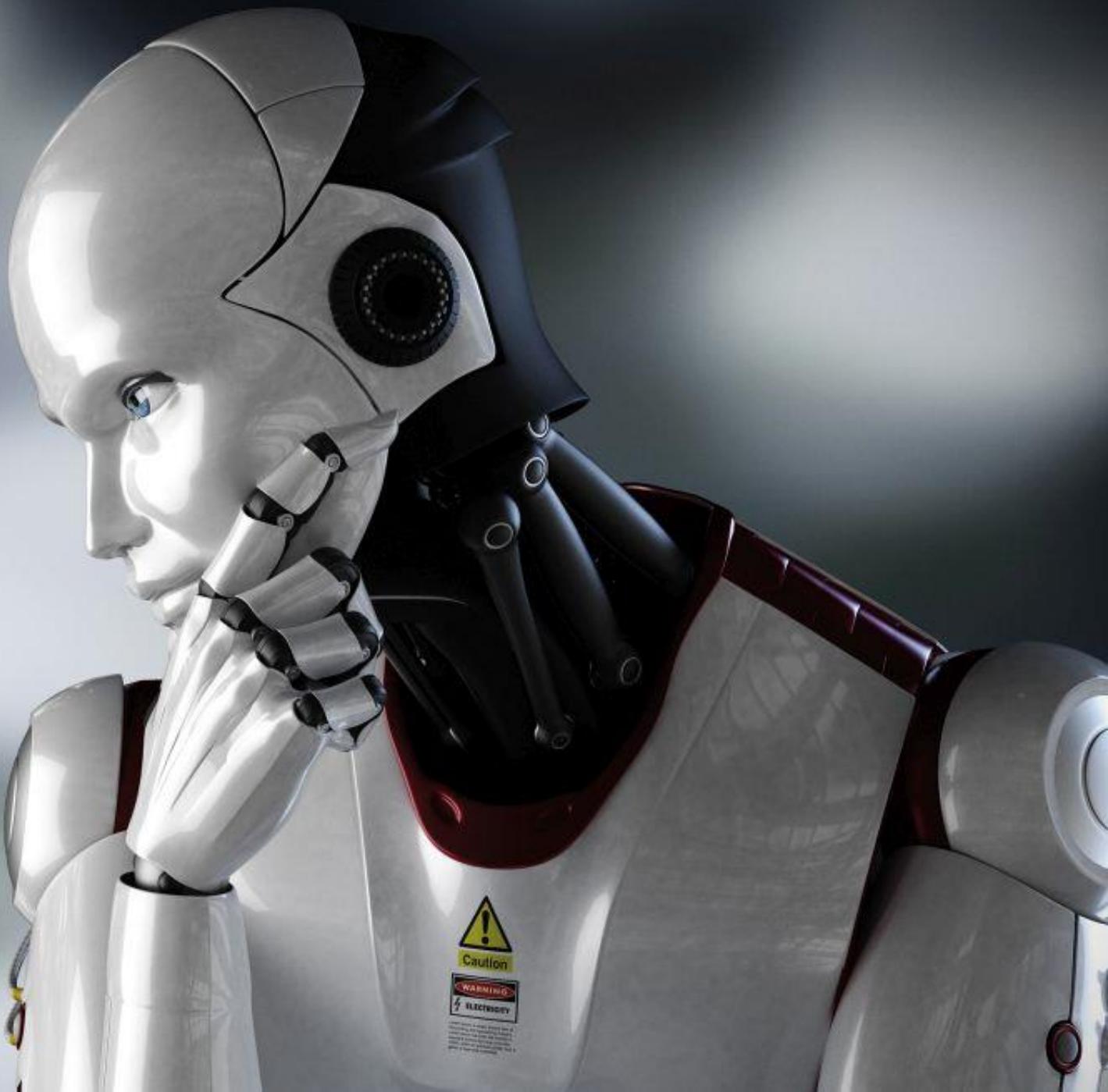
What is AI?

Why is it important?

How will it affect you?

A white robot arm with a red shoulder and a yellow warning label on its chest.

What is artificial intelligence?



HUMAN
BRAIN

WIN

ELECTRONIC
BRAIN

'BERTIE
BRAIN'
by
Rogers Majestic



CHOOSE Rogers Majestic for LASTING SATISFACTION

Rogers Majestic
Tele & Television
Radio & Electronics

ROGERS MAJESTIC
SILVER JUBILEE

Designed Engineered and built in Canada's

1965
ROGERS





Source: Evan Amos



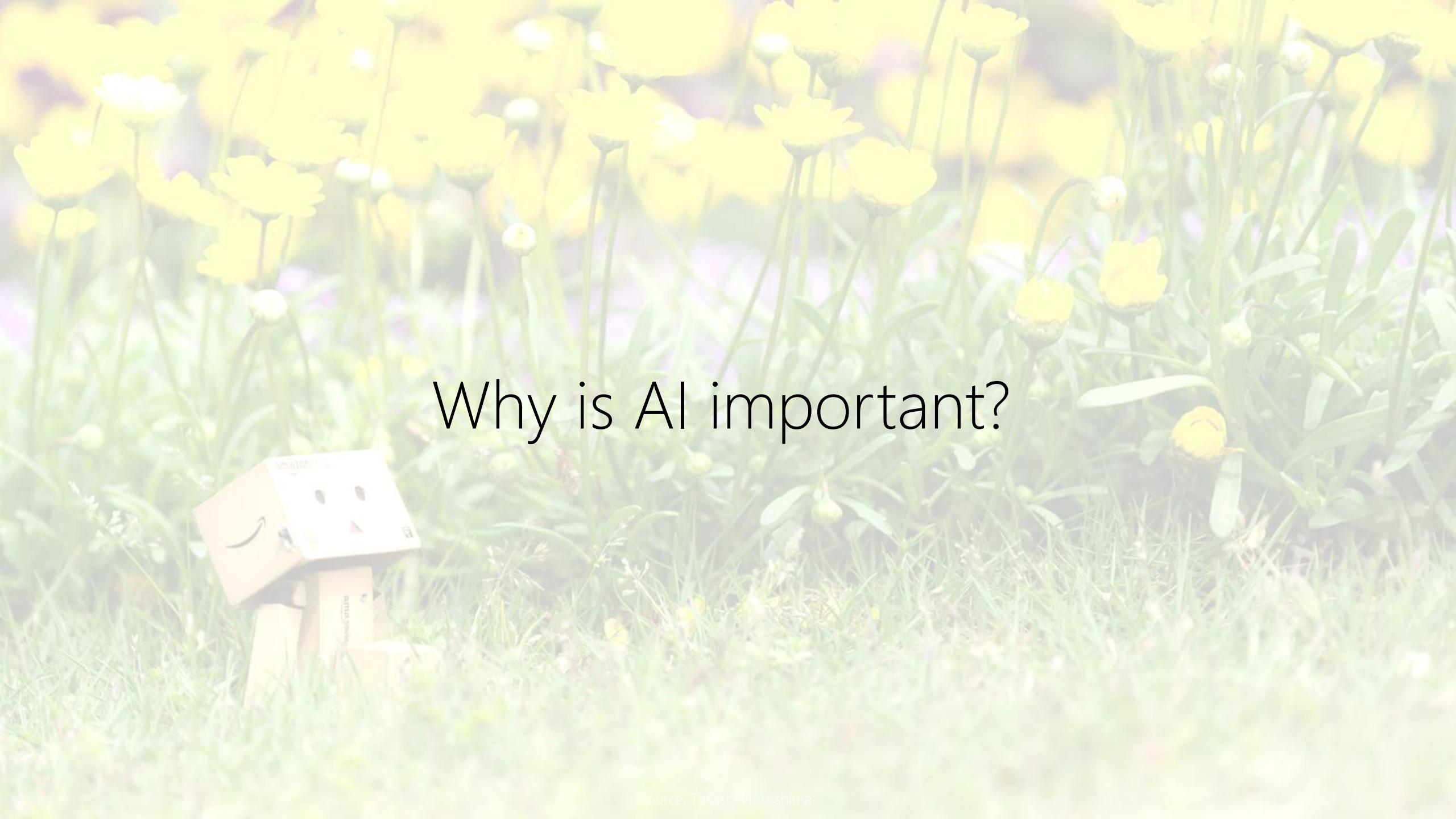


A dark, blurry silhouette of a person standing in a field of tall grass under a cloudy sky.

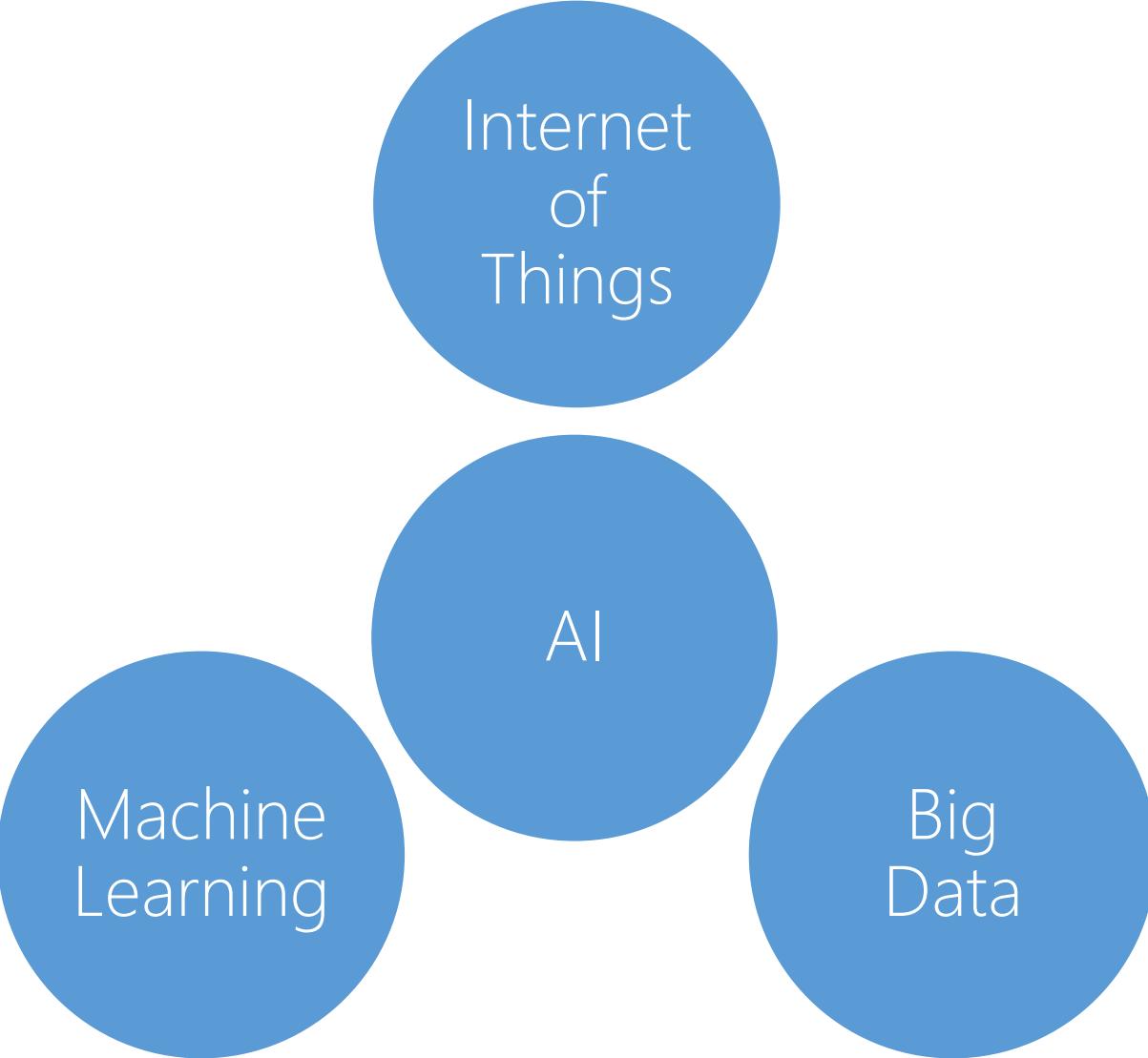
AI Winter
1970s – 2000s



Source: Takashi Hososhima

A photograph of a field of yellow flowers, likely buttercups, with green grass in the foreground. A small Amazon delivery box stands upright in the grass on the left side of the frame.

Why is AI important?

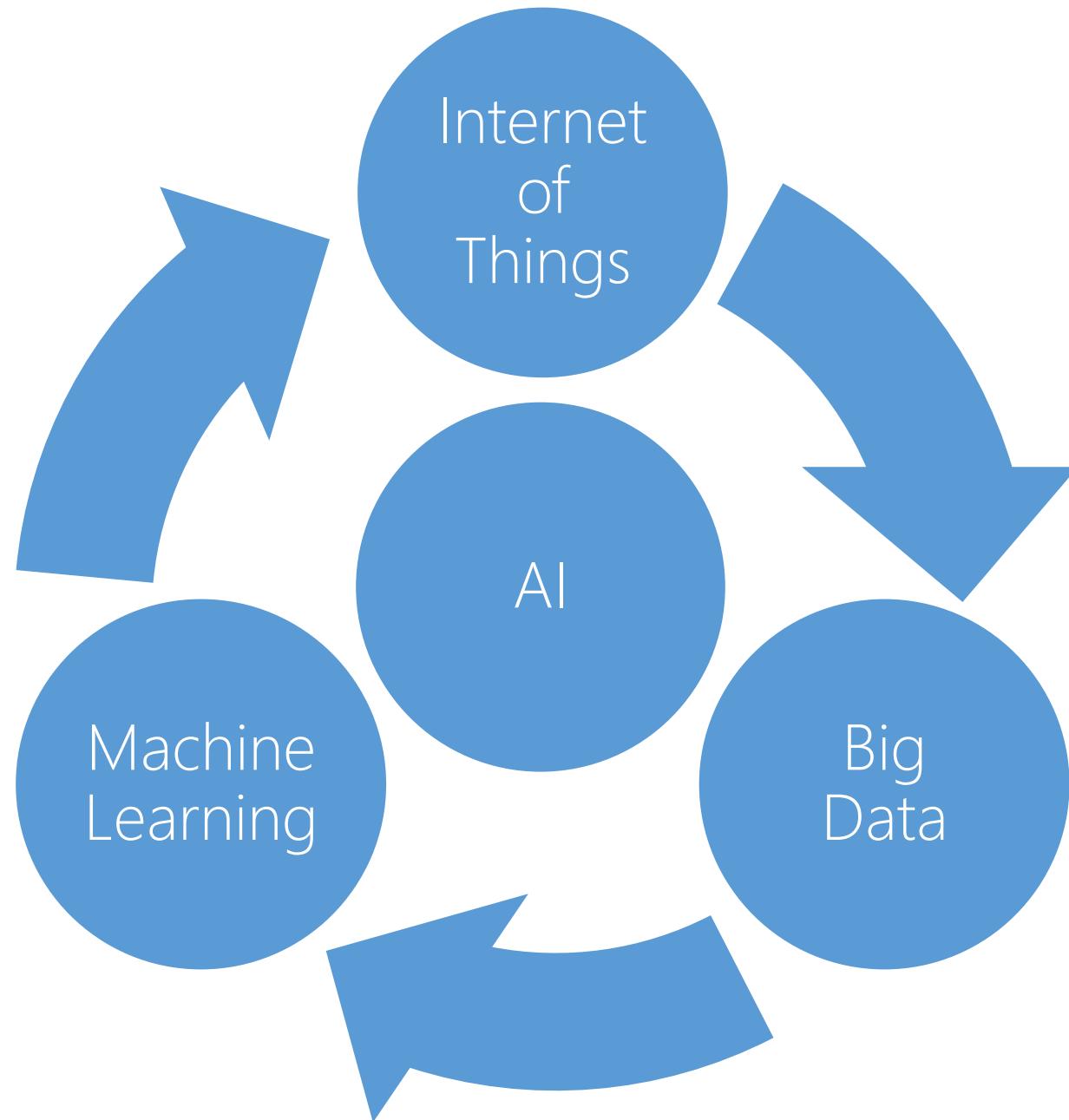


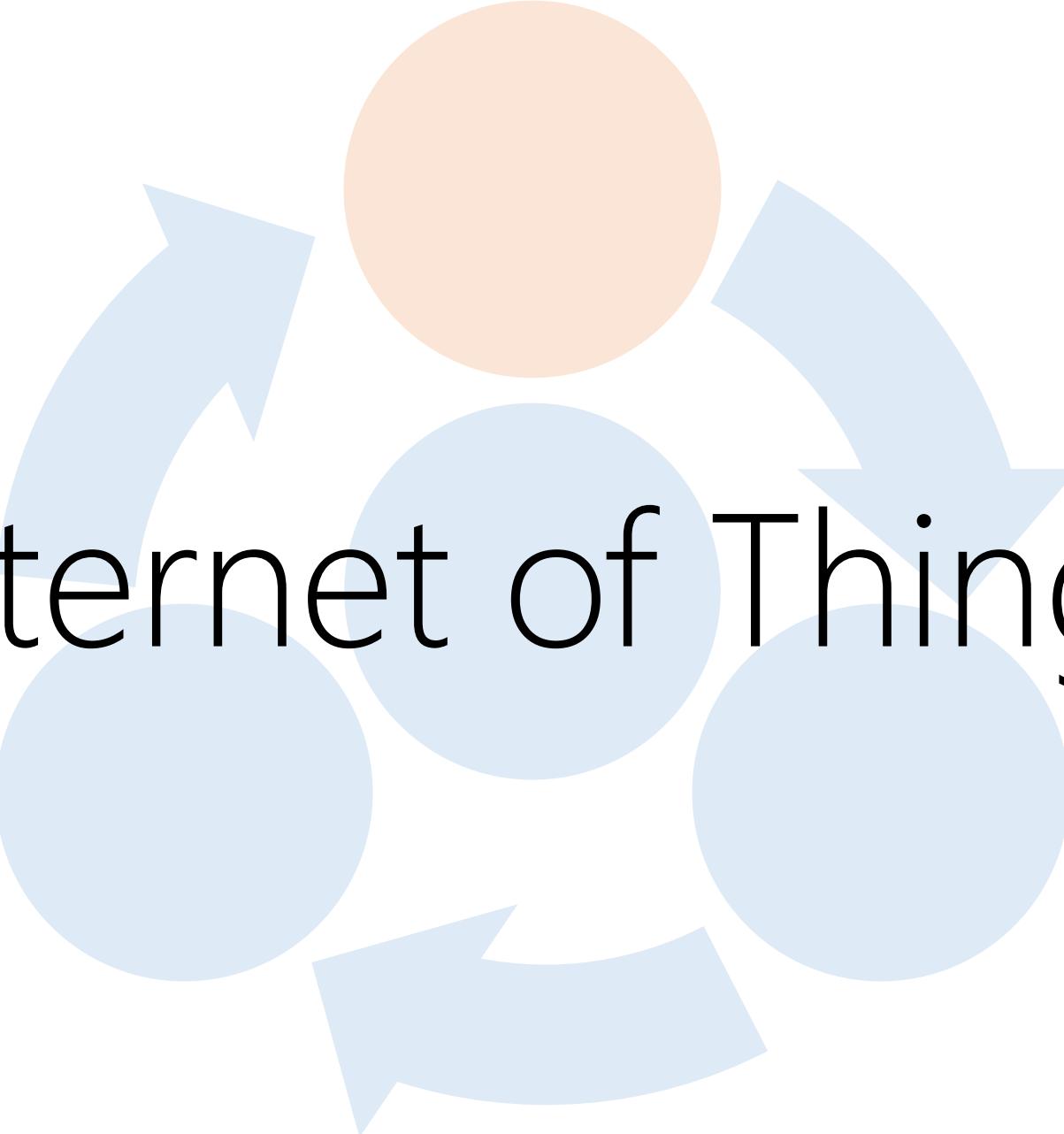
Internet
of
Things

AI

Machine
Learning

Big
Data

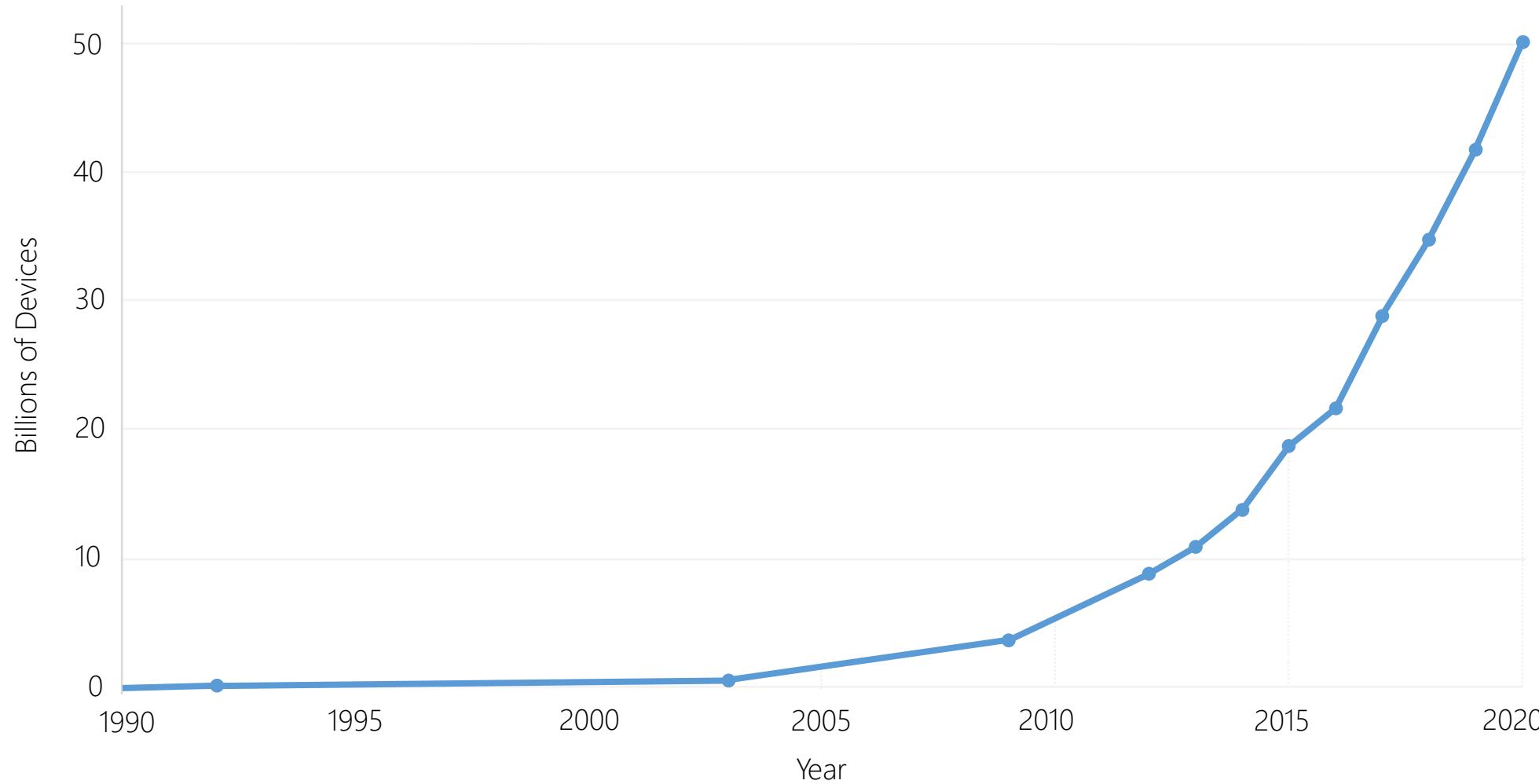




Internet of Things



Growth of the IoT Devices



Source: NCTA, 2014

Growth of the IoT Devices

50 billion IoT devices by 2020





REMOTE HOME CONTROL

ONLINE HOME AUTOMATION



CLIMATE



LIGHTING



SECURITY



ENTERTAINMENT

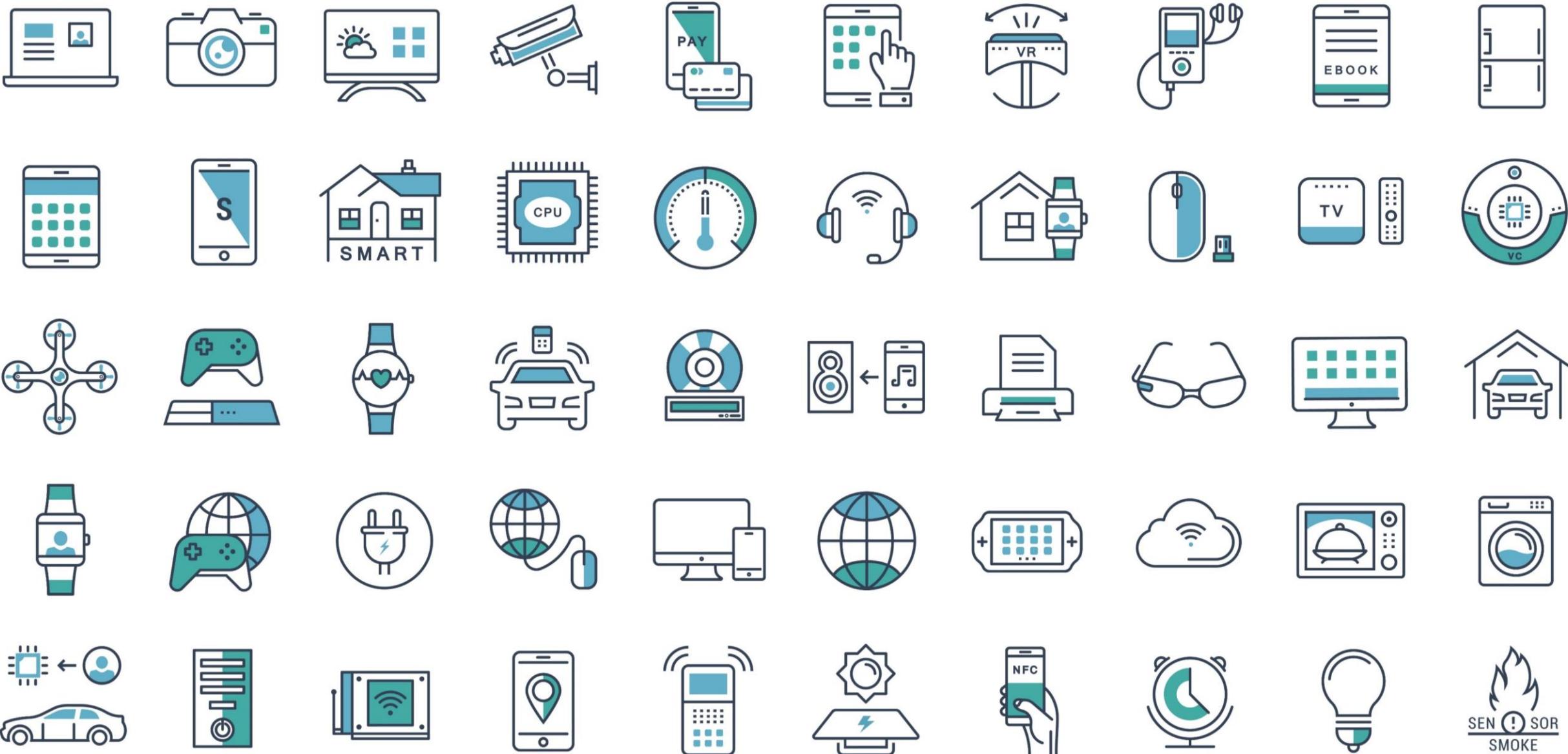


ECO MODE

NORMAL

OFF







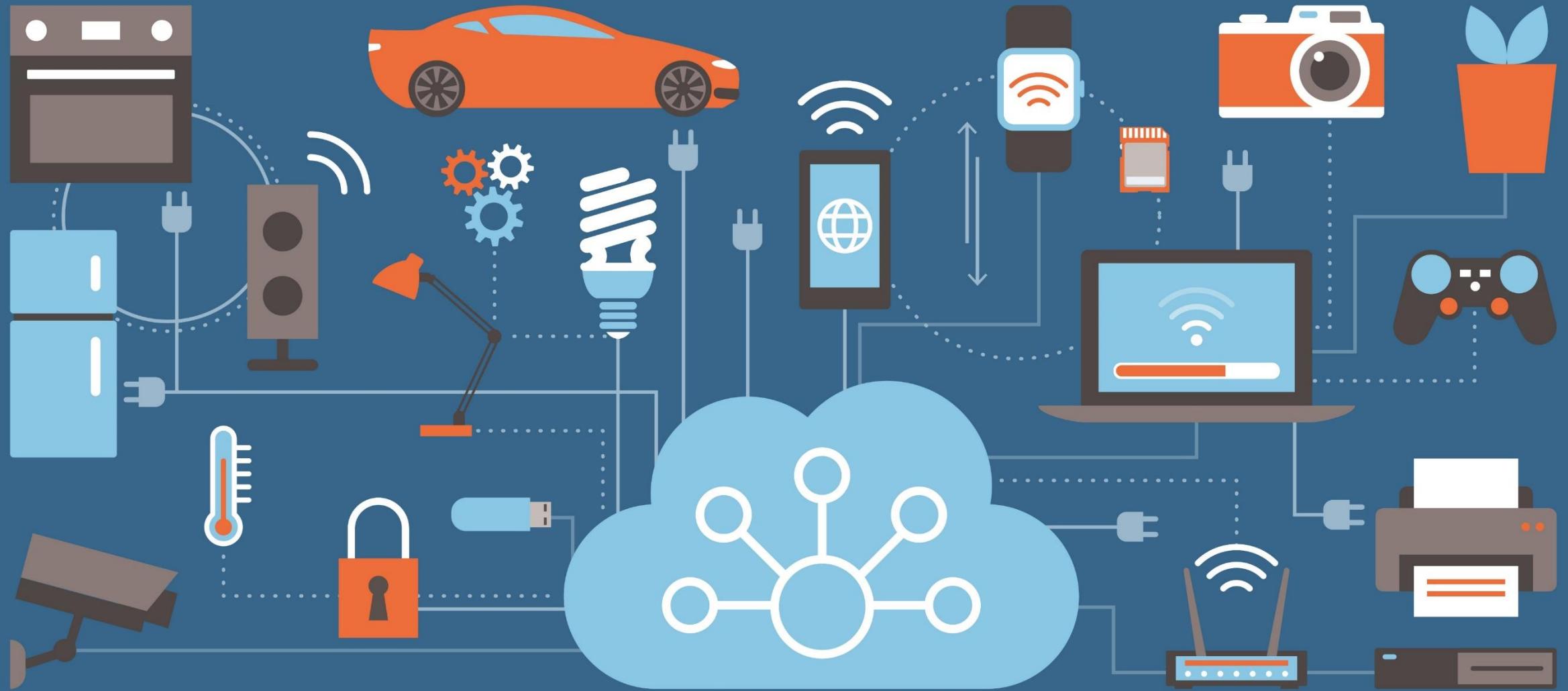


COW TRACKING



81cows in range
Range 100m

Map | List





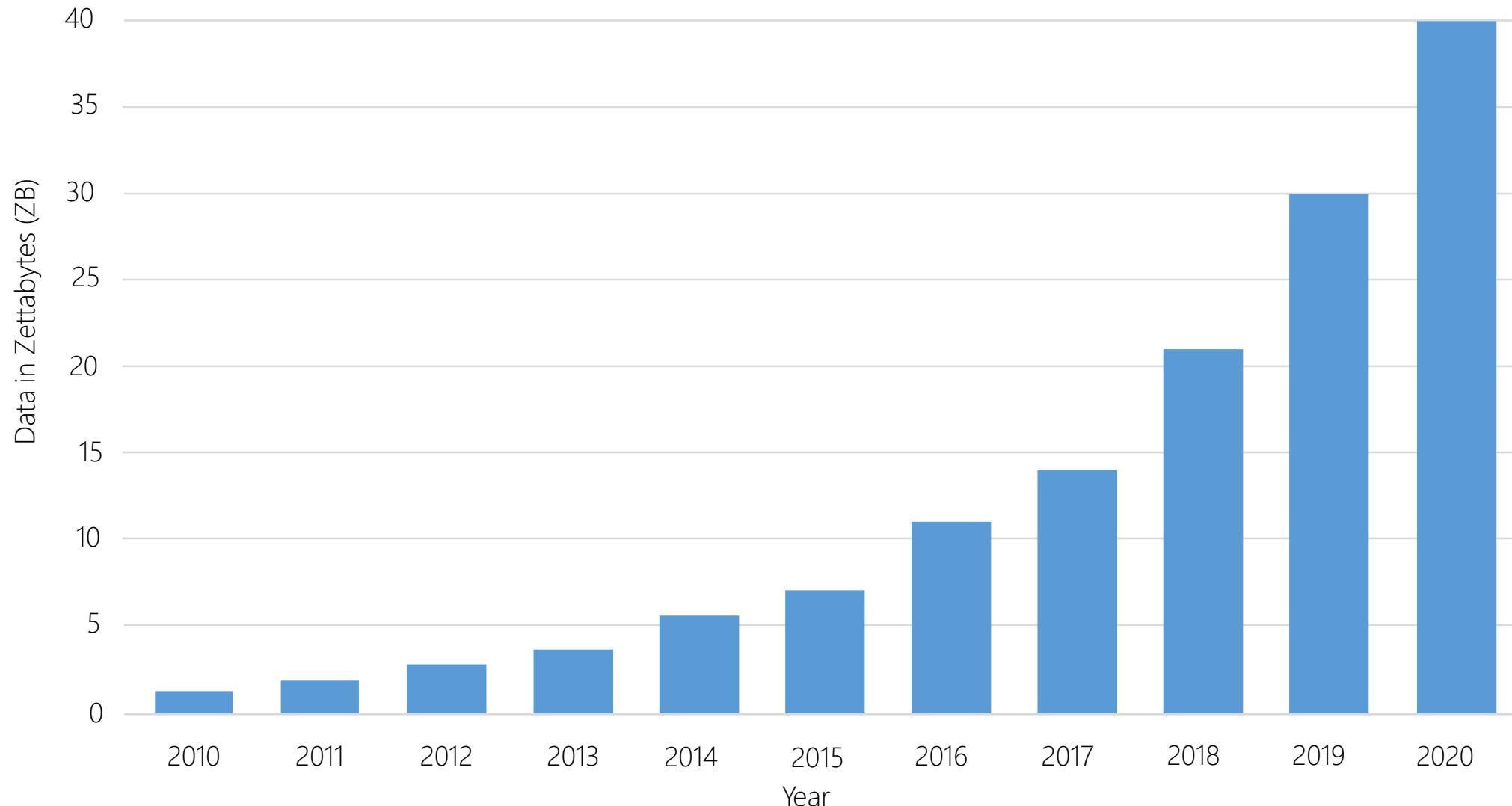


IoT is the body for AI

... but it needs a brain.

Big Data

Global Data Growth

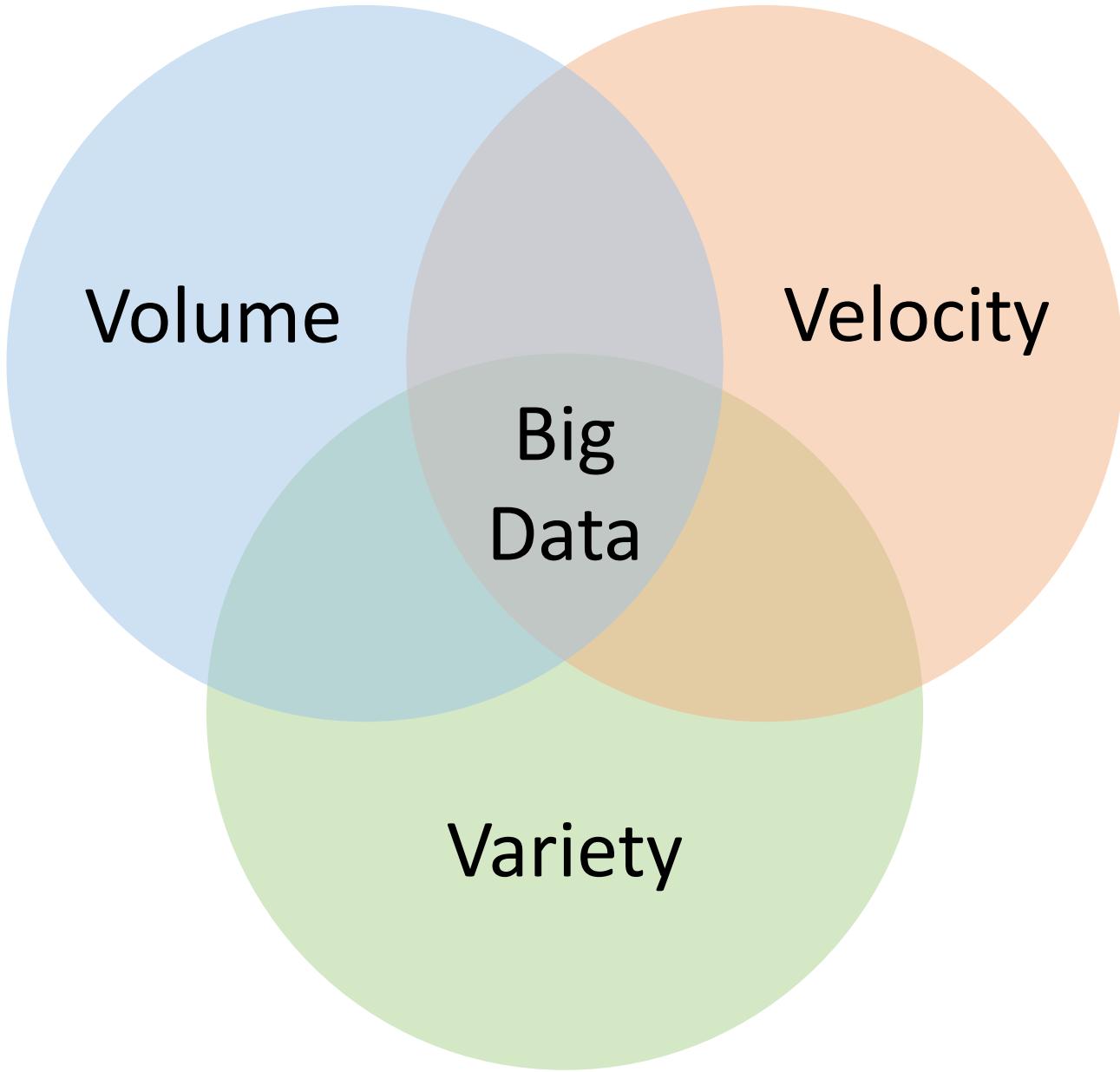


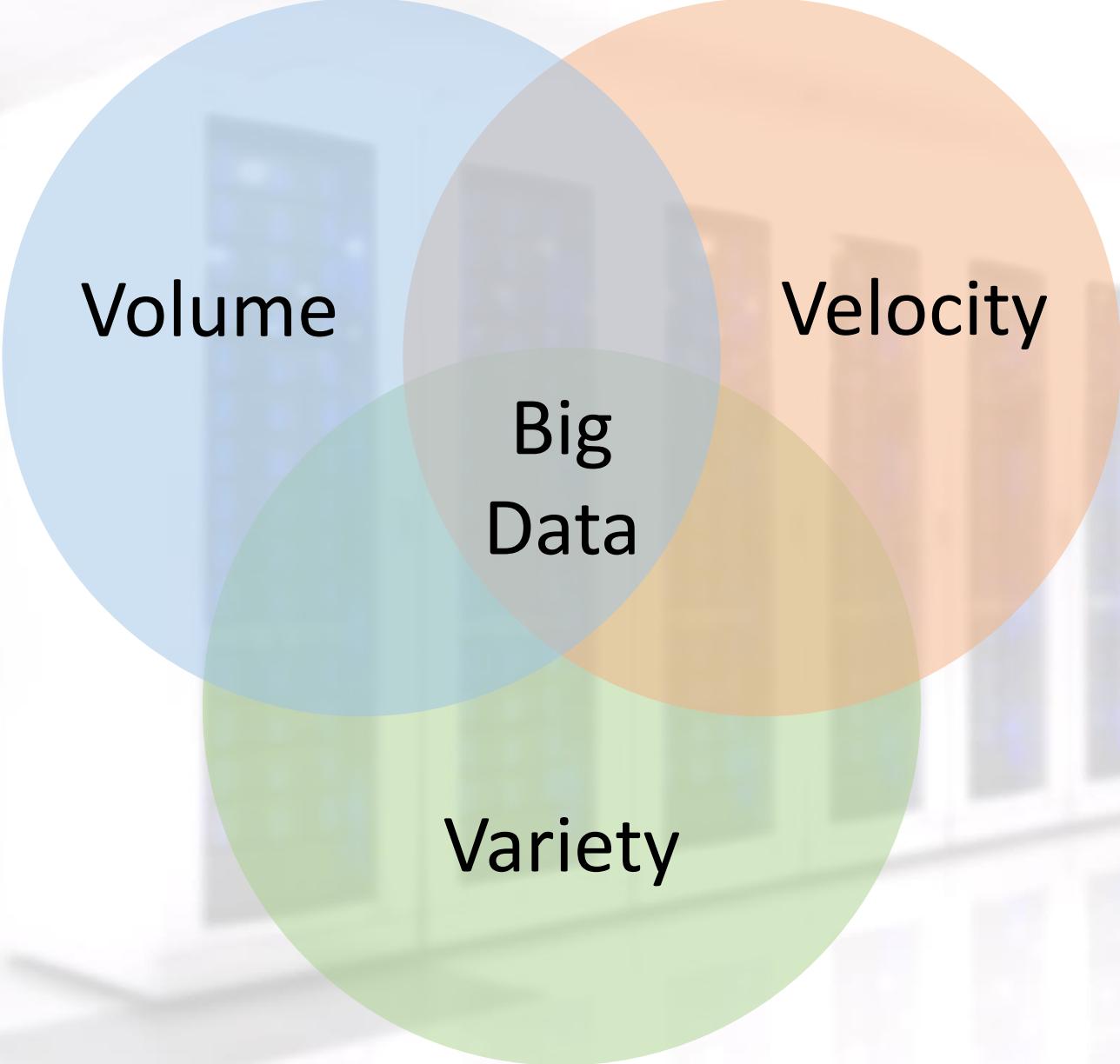
Source: UNECE Statistics Wikis

Global Data Growth

Doubling every two years







Volume

Velocity

Big
Data

Variety



Volume

A 3

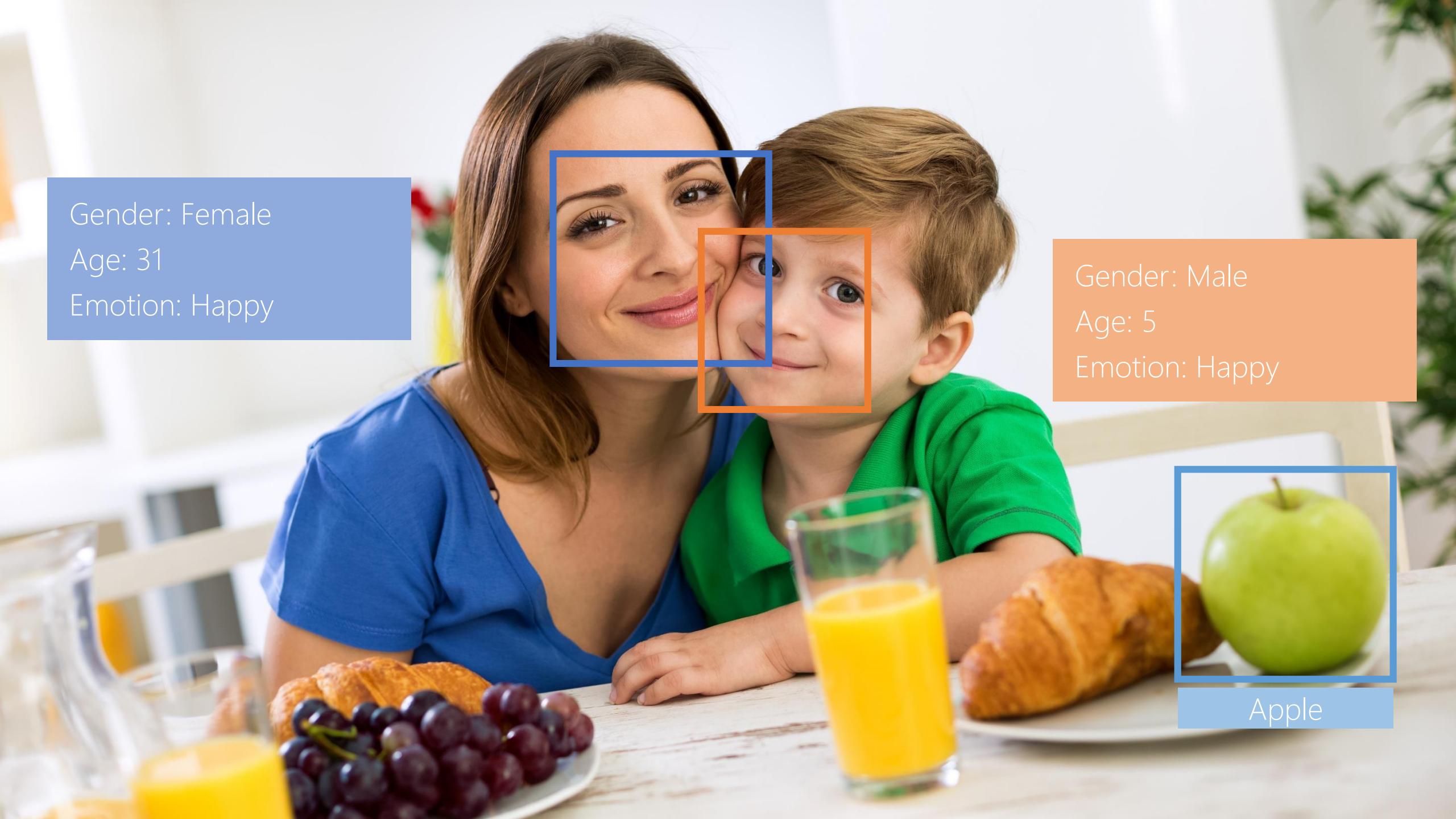


Velocity





Variety



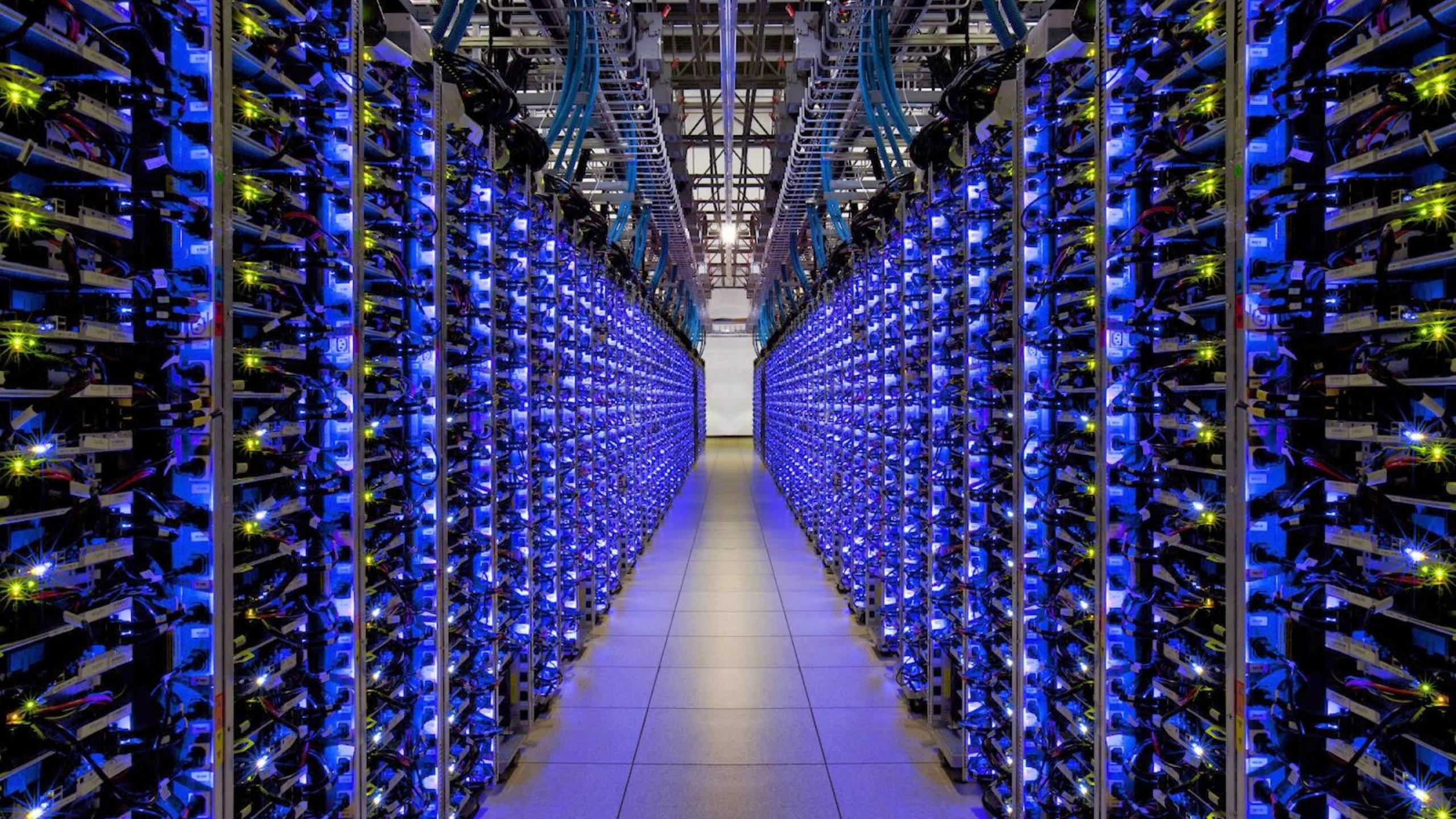
Gender: Female
Age: 31
Emotion: Happy



Gender: Male
Age: 5
Emotion: Happy



Apple

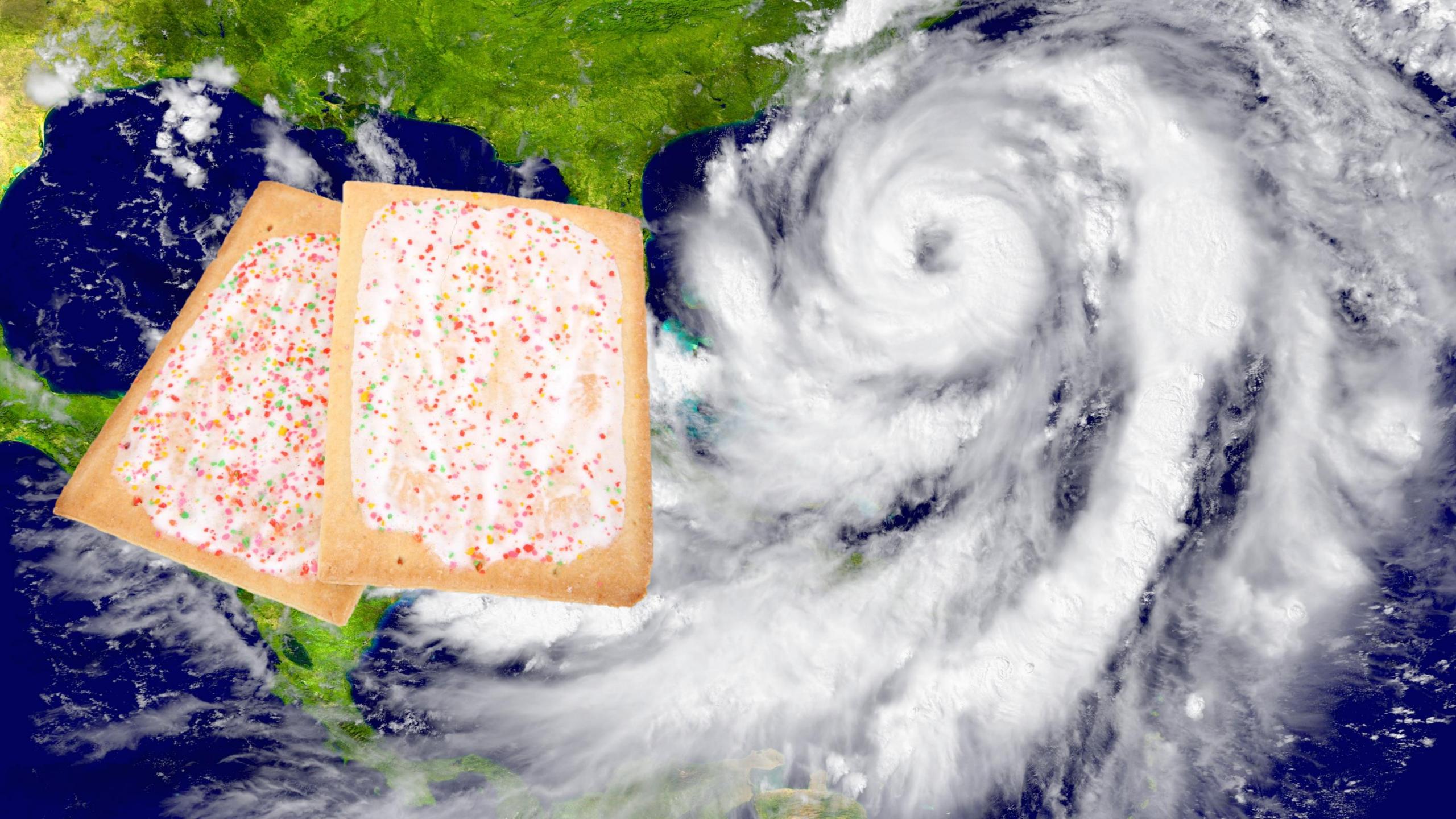






August 2017						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		





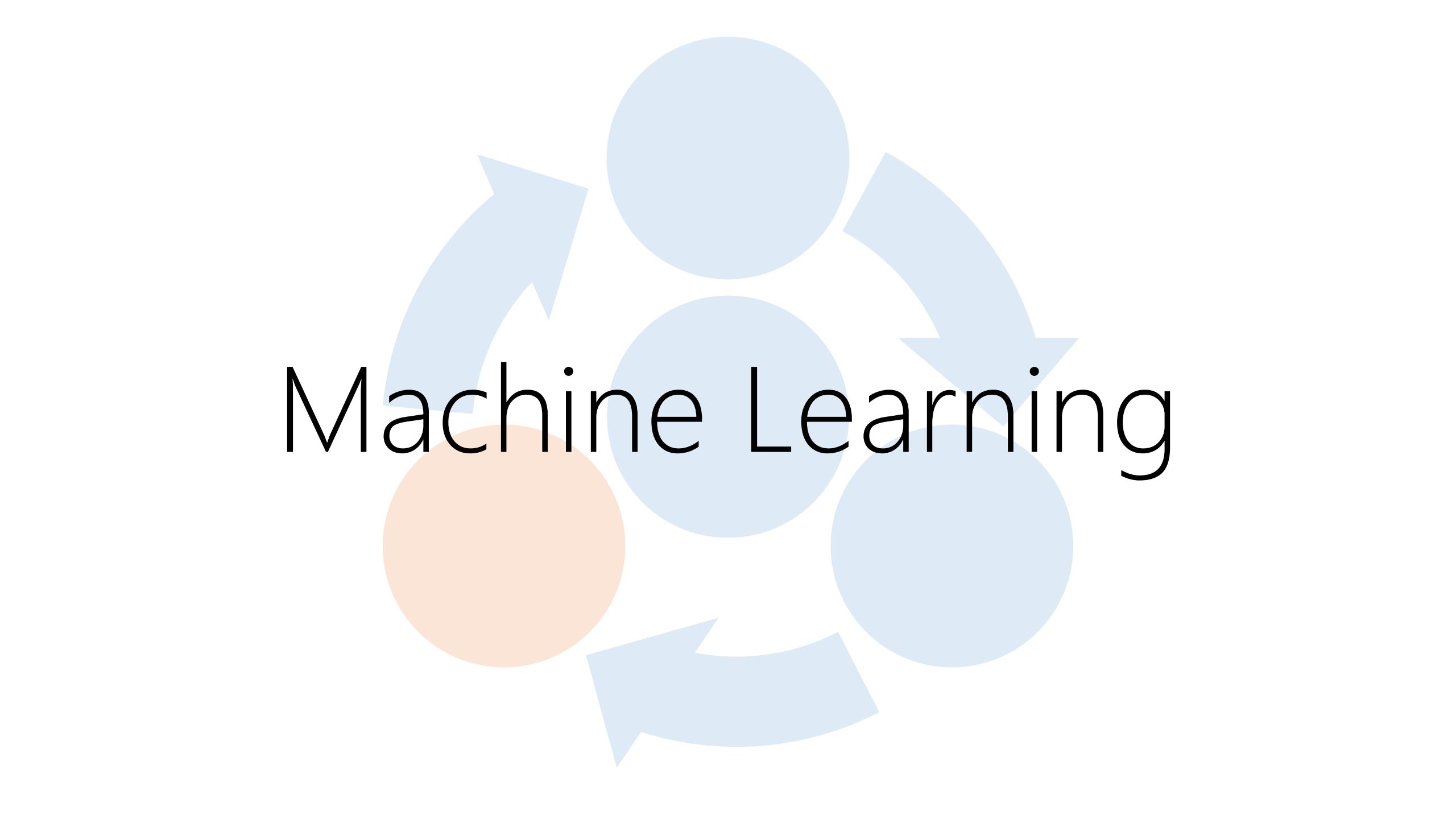




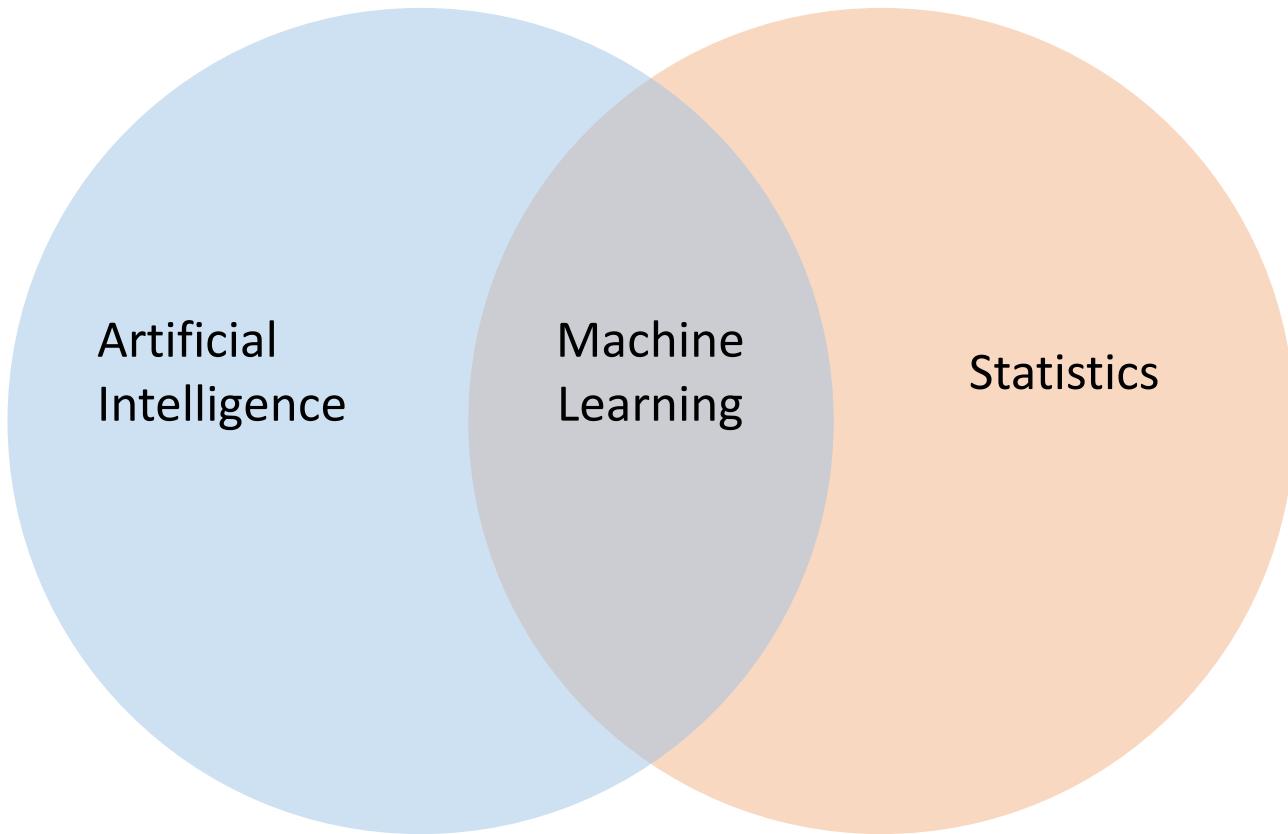
A perspective view of a long row of server racks in a data center. The racks are white with glass doors, showing internal components like hard drives and circuit boards. Blue lights are visible through the glass. The ceiling has a grid of recessed lighting. A sign on the ceiling reads "A 3".

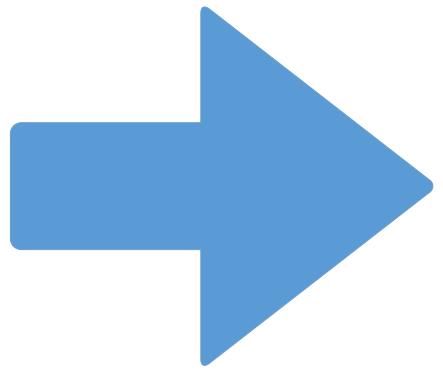
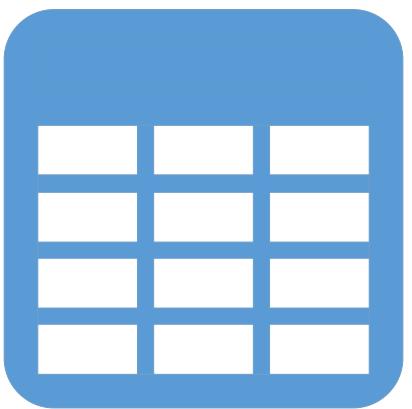
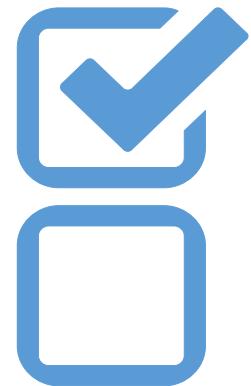
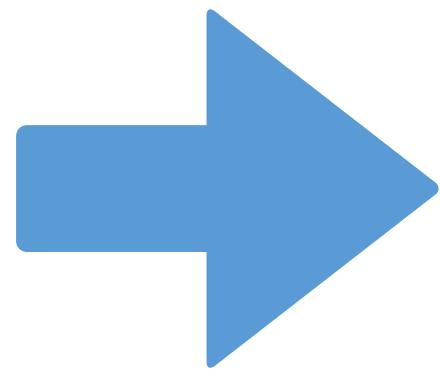
Big Data is the brain for AI

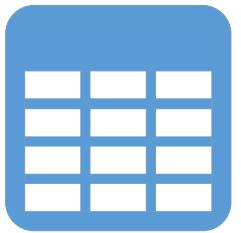
... but it needs a mind.

The background of the image features a circular arrangement of five overlapping circles. One circle is orange, and four are light blue. Three light blue arrows point clockwise around the circles, creating a sense of motion. The text "Machine Learning" is positioned in the center of this graphic.

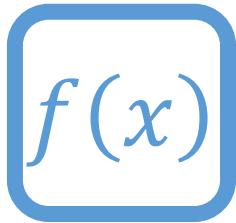
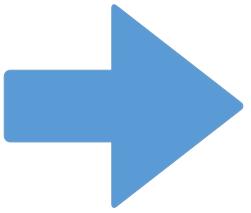
Machine Learning



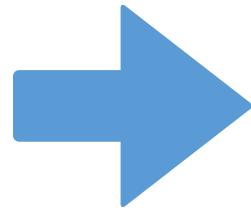
 $f(x)$ 



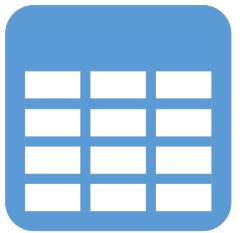
Data



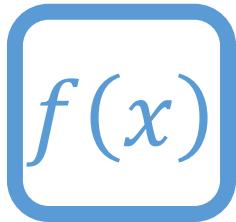
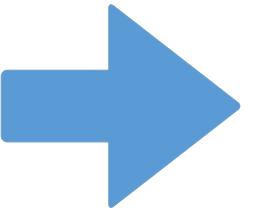
Function



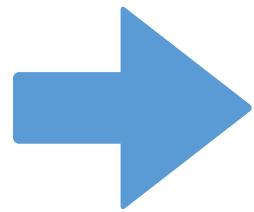
Prediction



Data

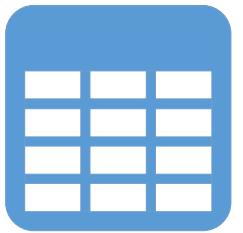


Function

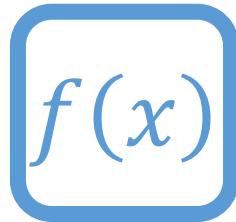
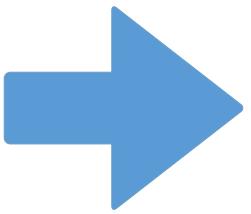


Prediction

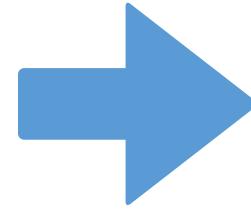




Data



Function



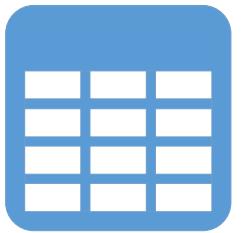
Prediction



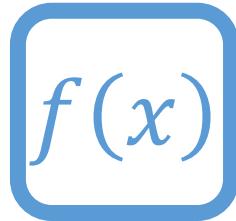
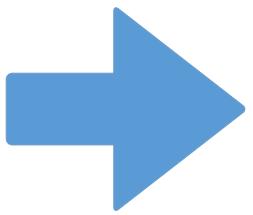
Cat



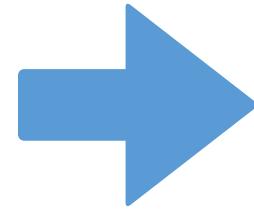
Dog



Data



Function



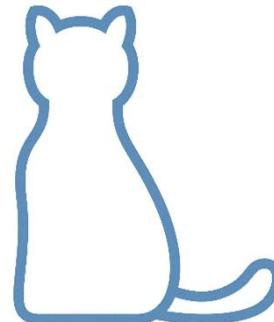
Prediction

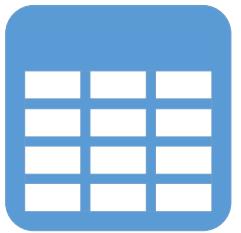


Cat

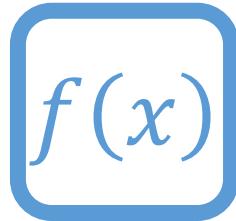
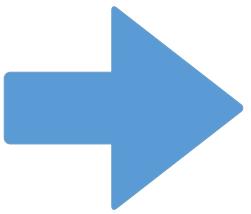


Dog

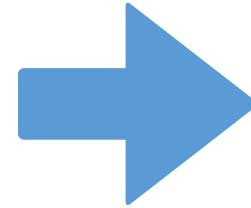




Data



Function



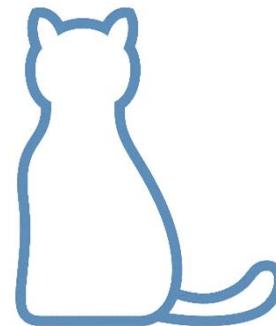
Prediction



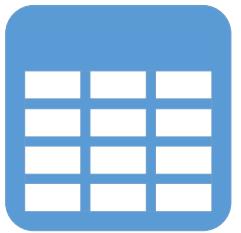
Cat



Dog



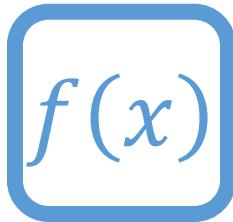
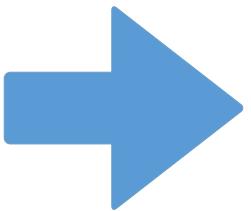
Is cat?



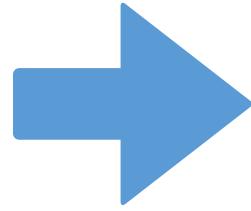
Data



Cat



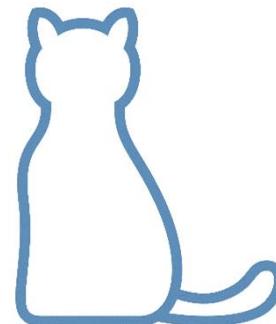
Function



Prediction

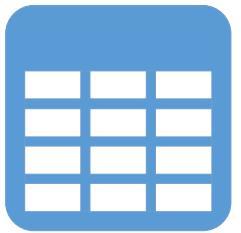


Dog



Is cat?

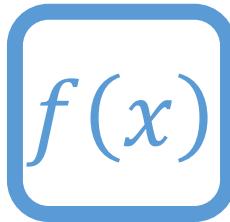
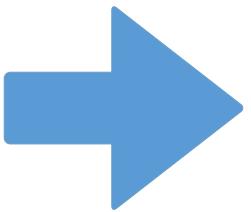




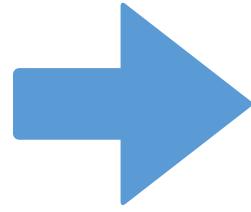
Data



Cat



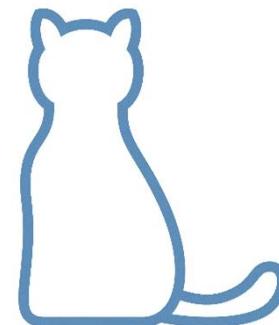
Function



Prediction



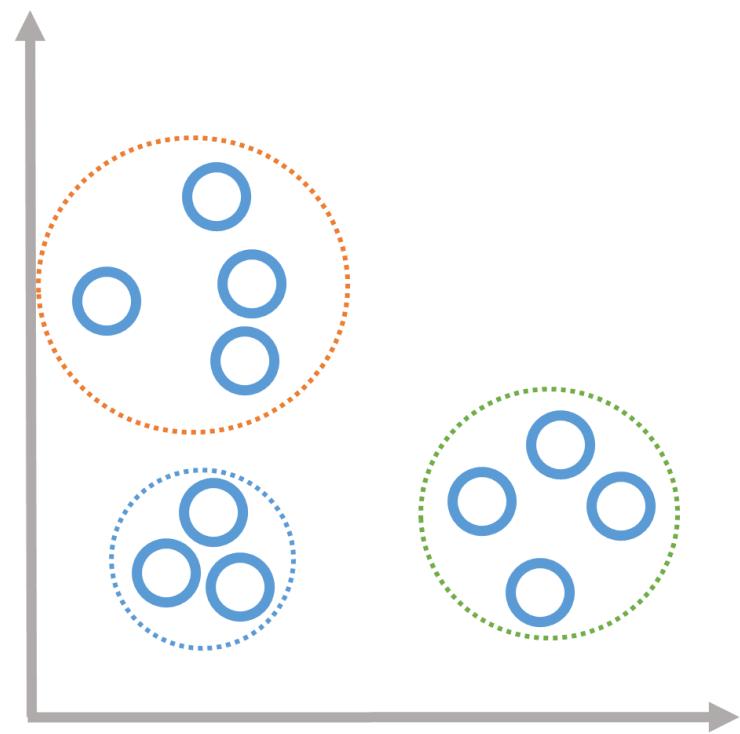
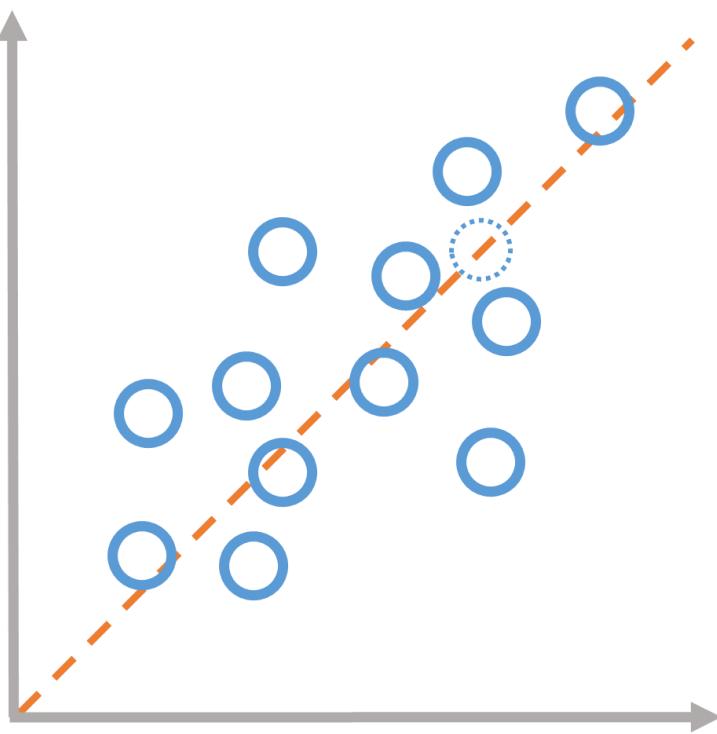
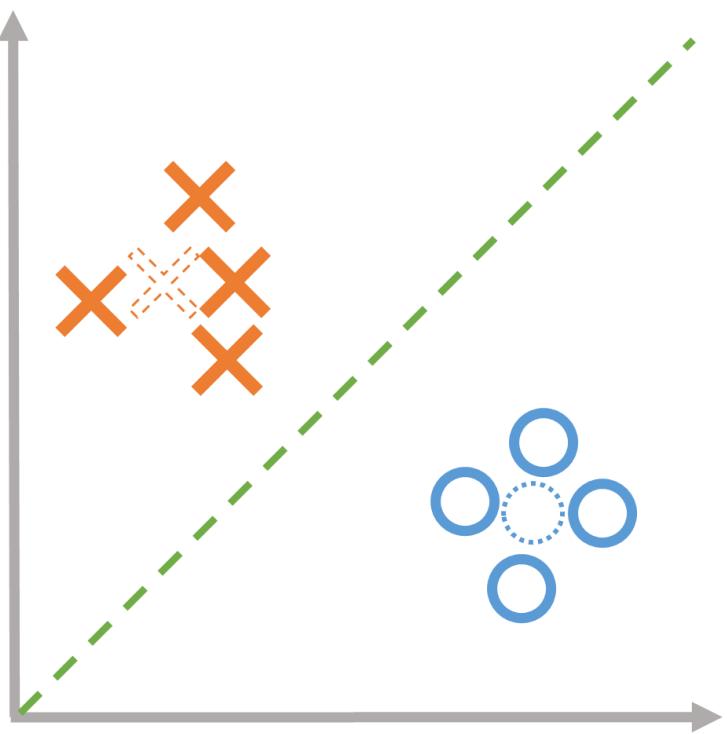
Dog

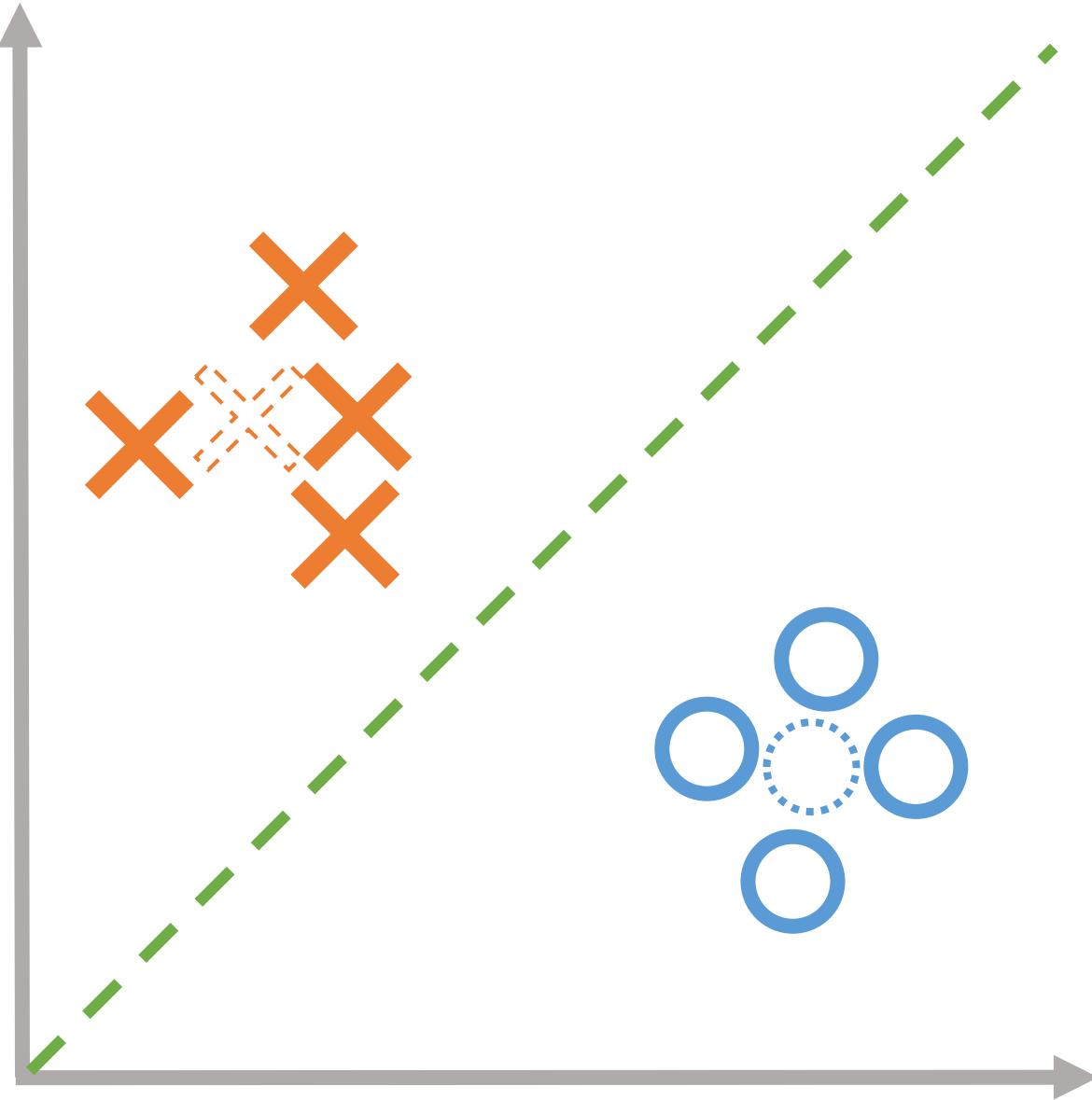


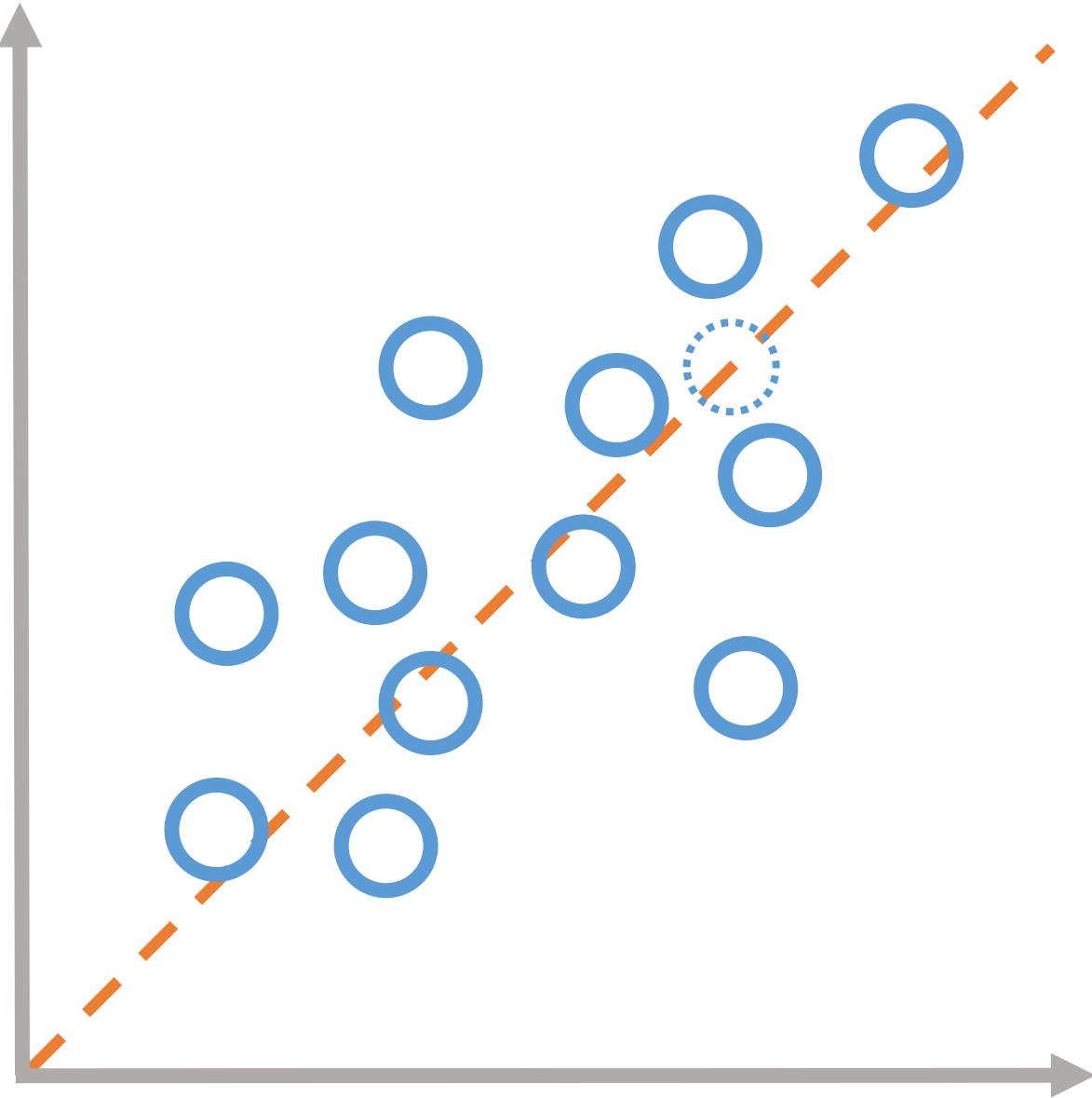
Is cat?

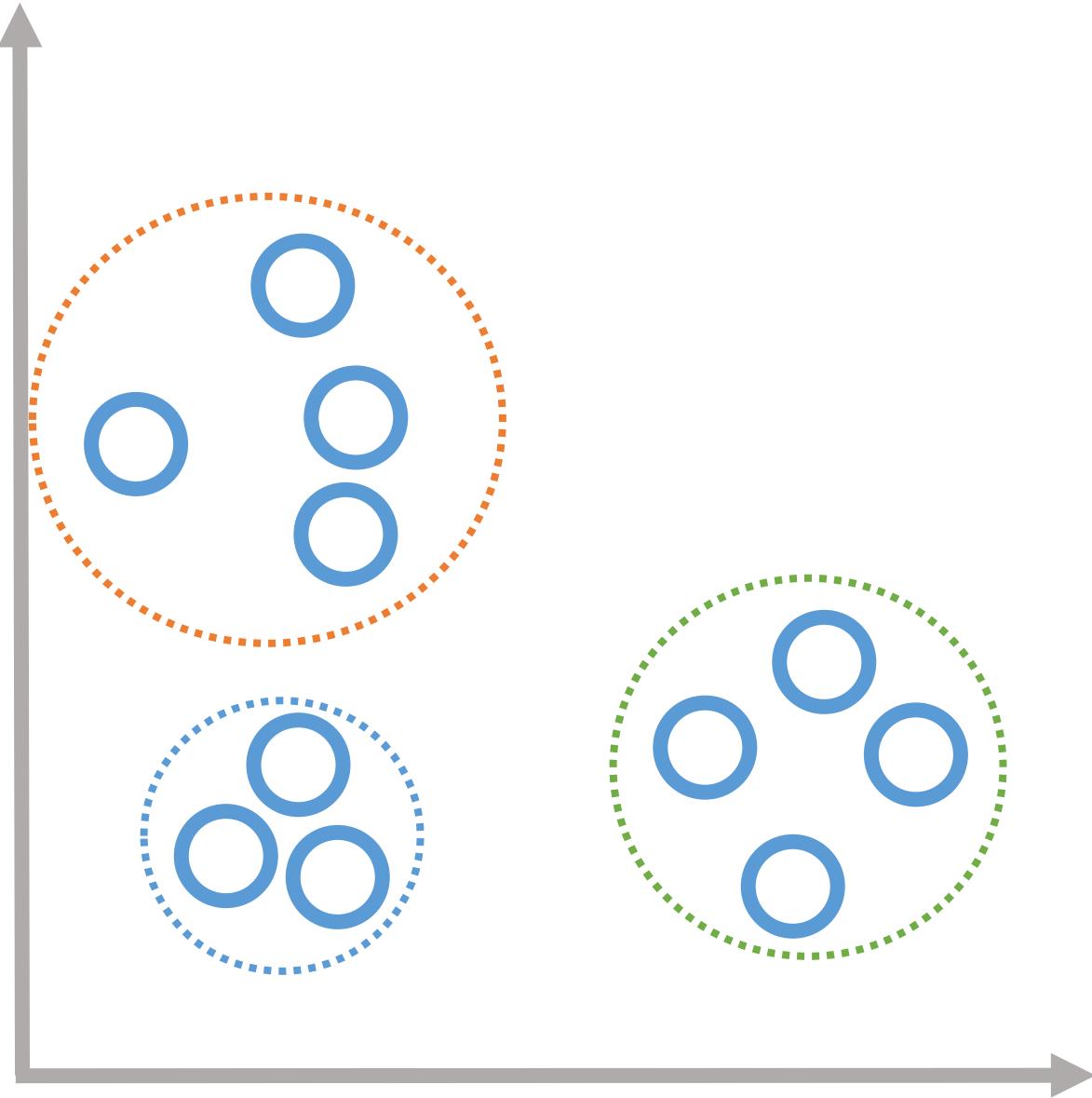


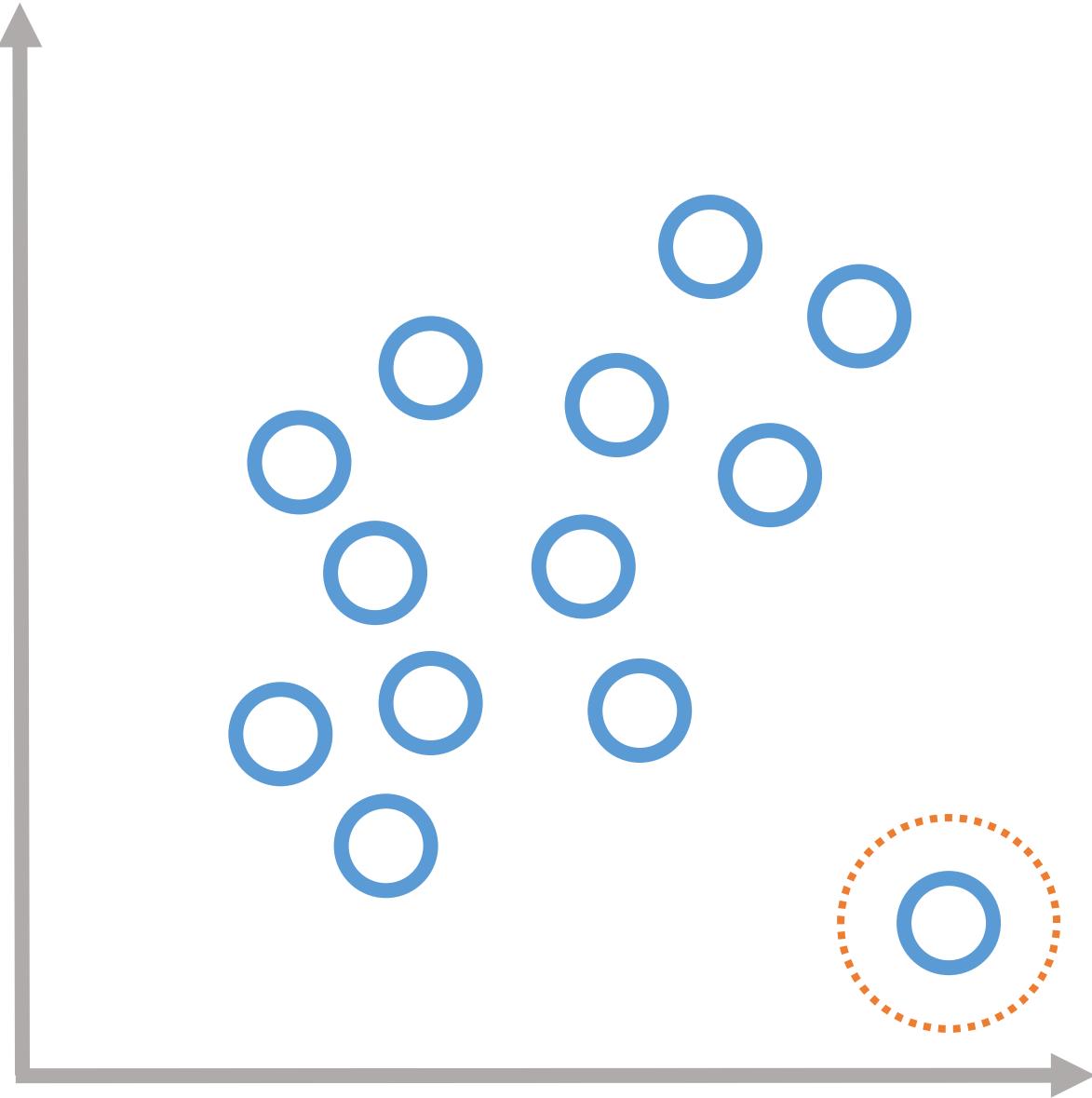
Yes

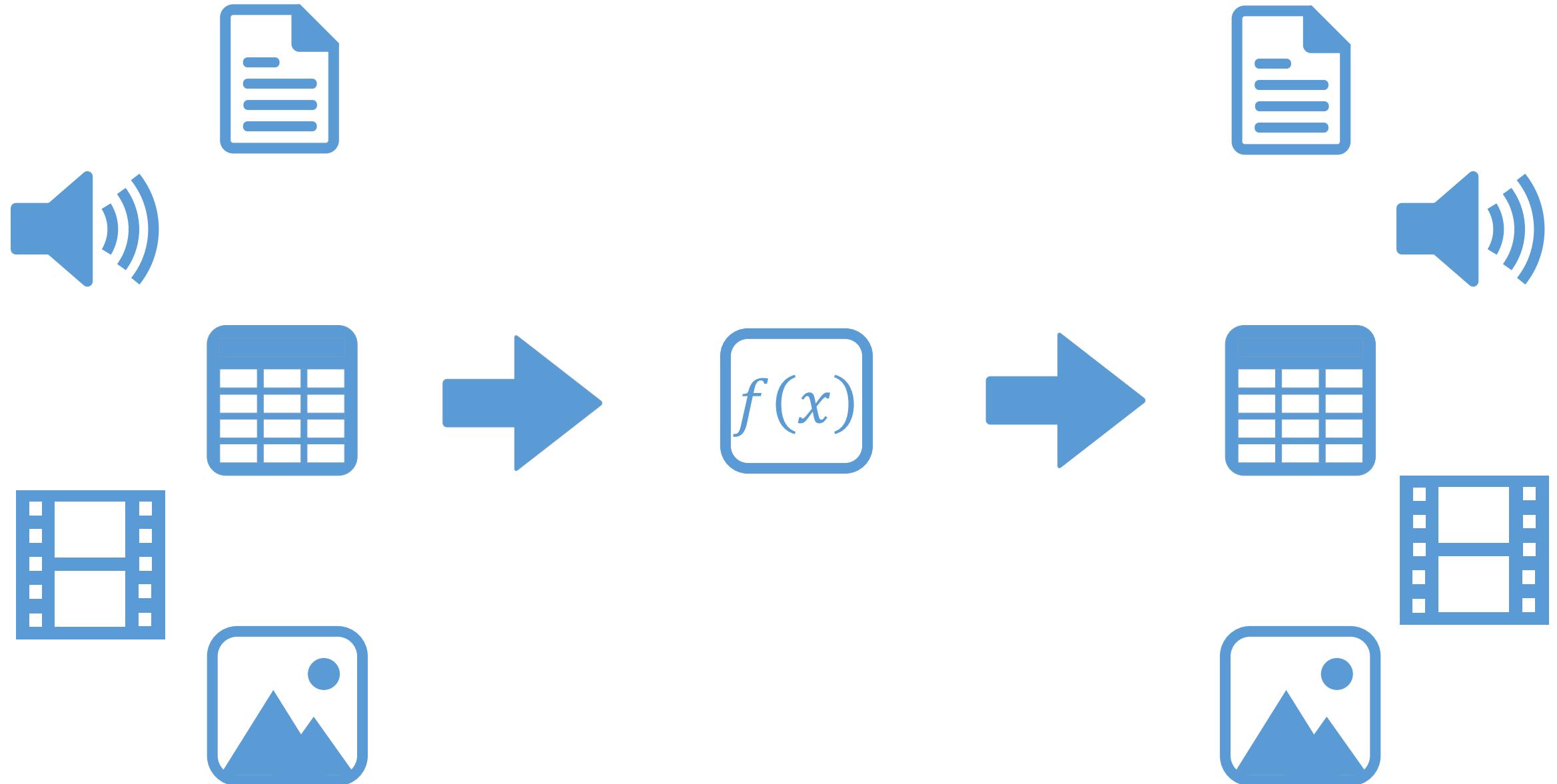


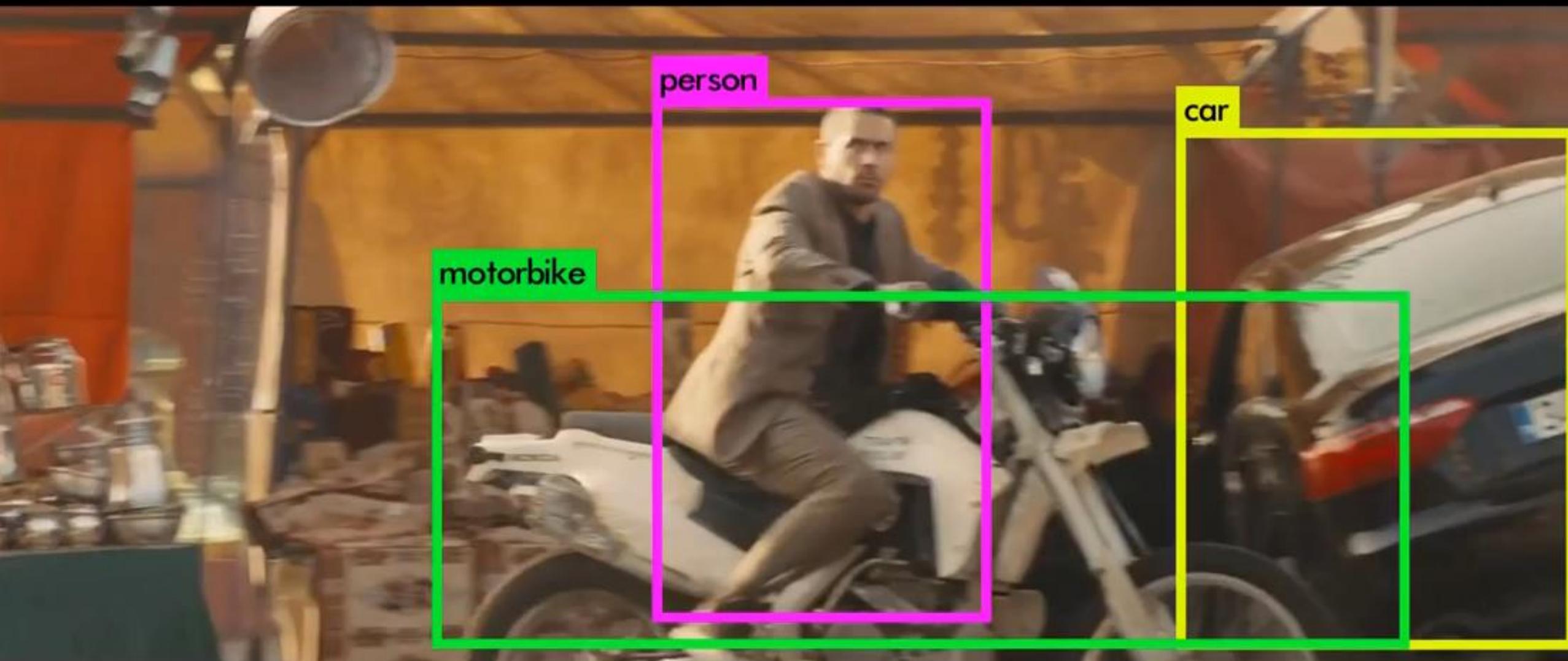


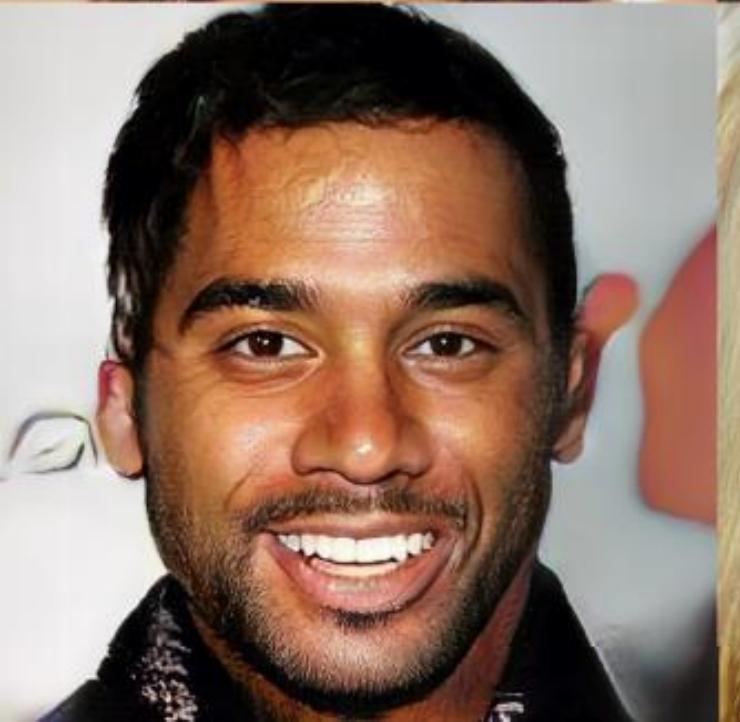








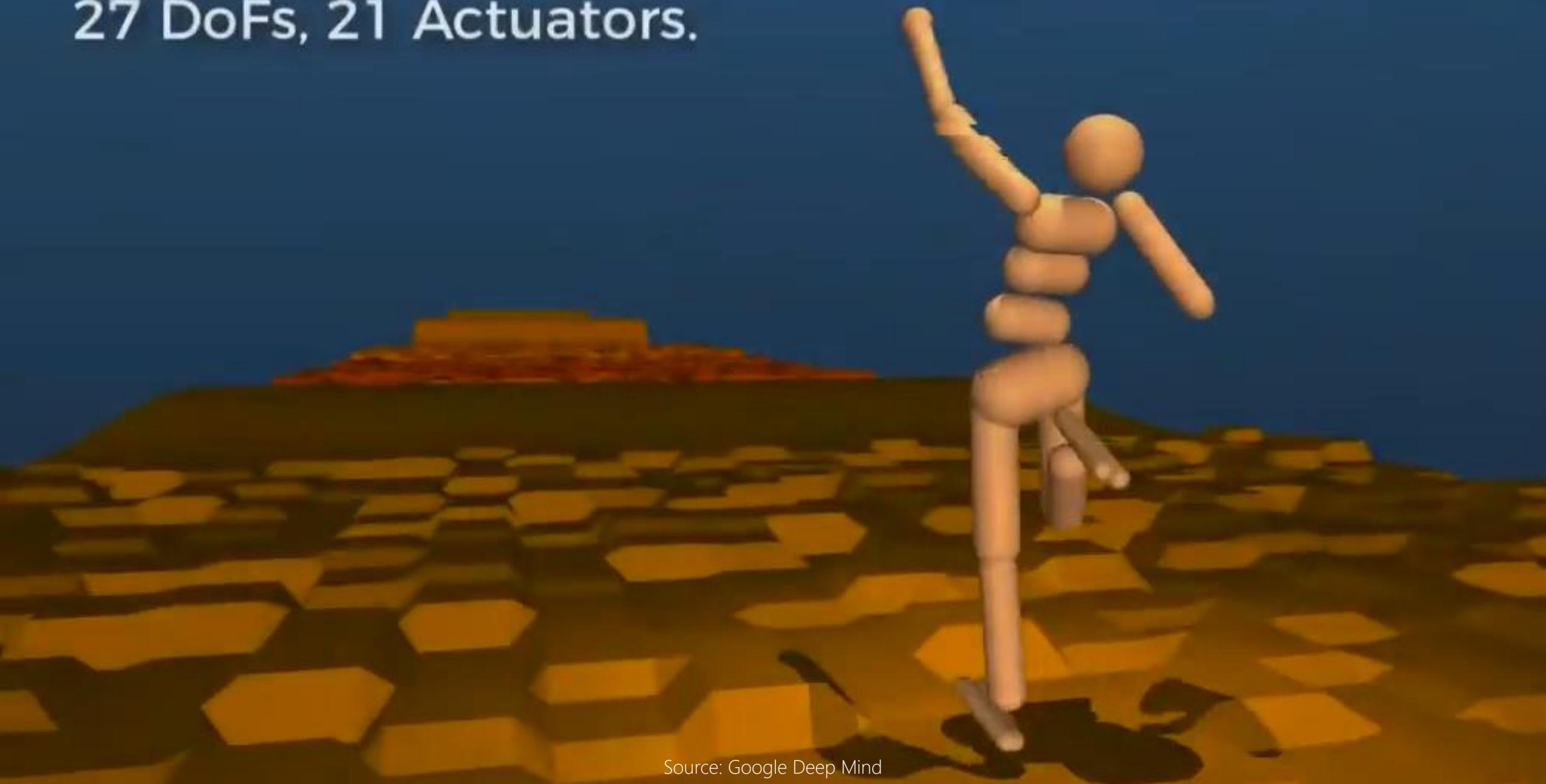


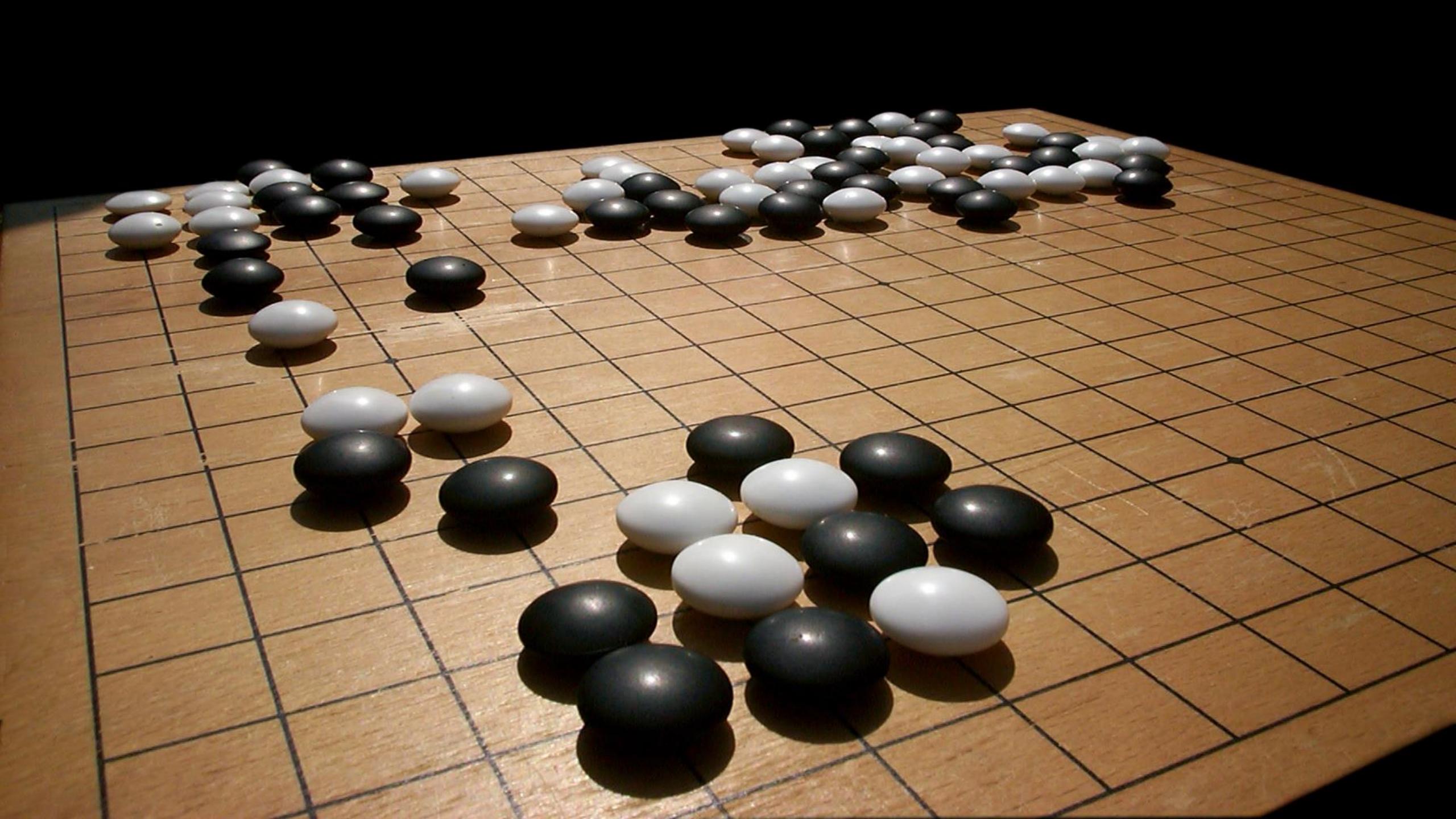


Source: Nvidia



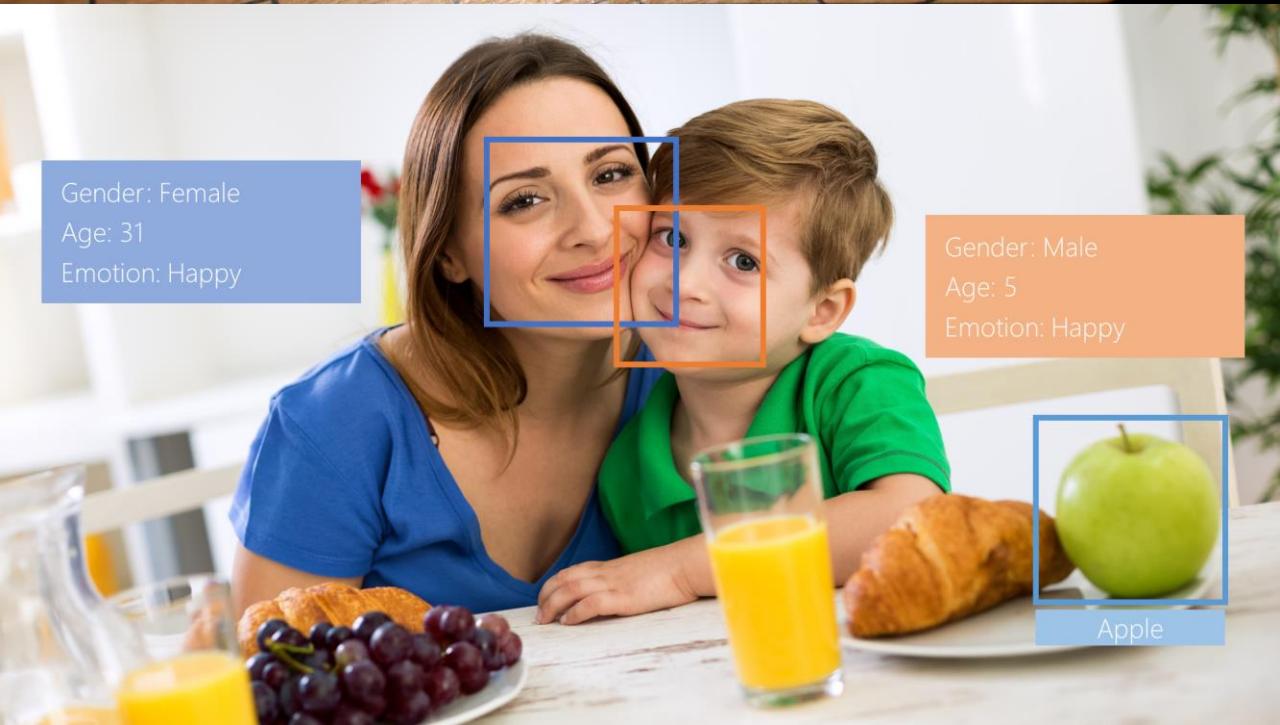
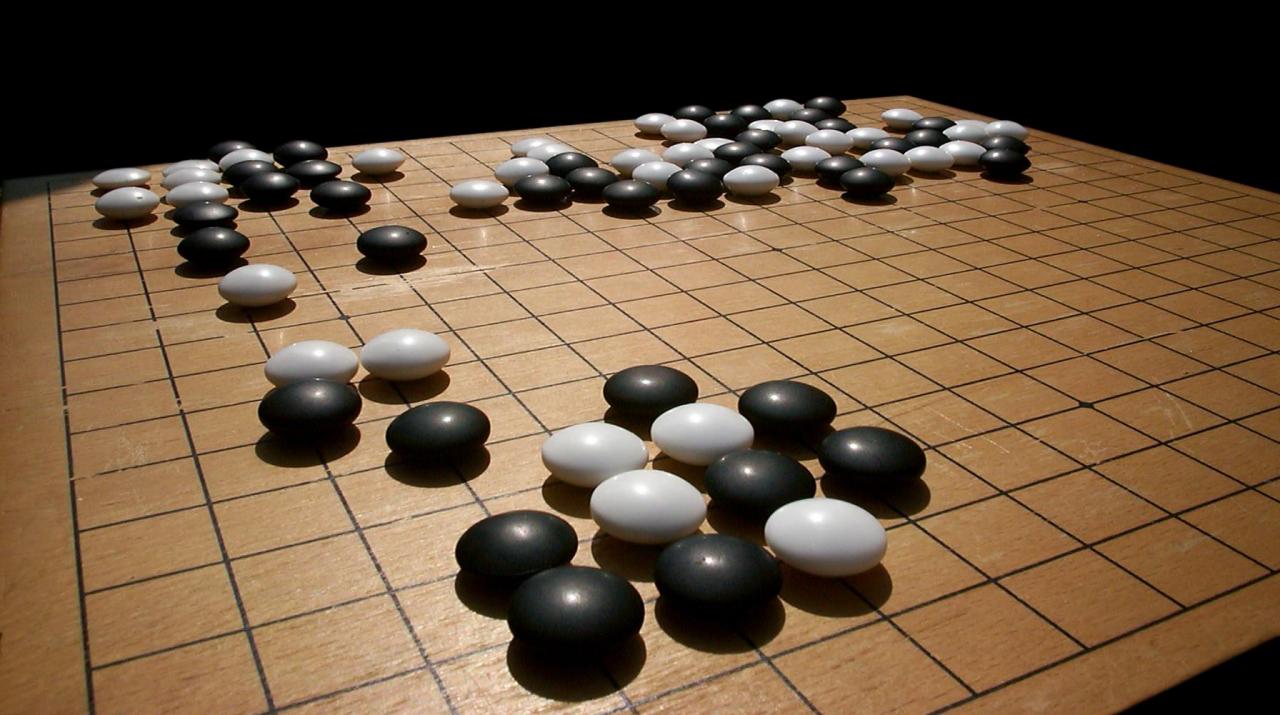
Humanoid:
27 DoFs, 21 Actuators.















CAUTION





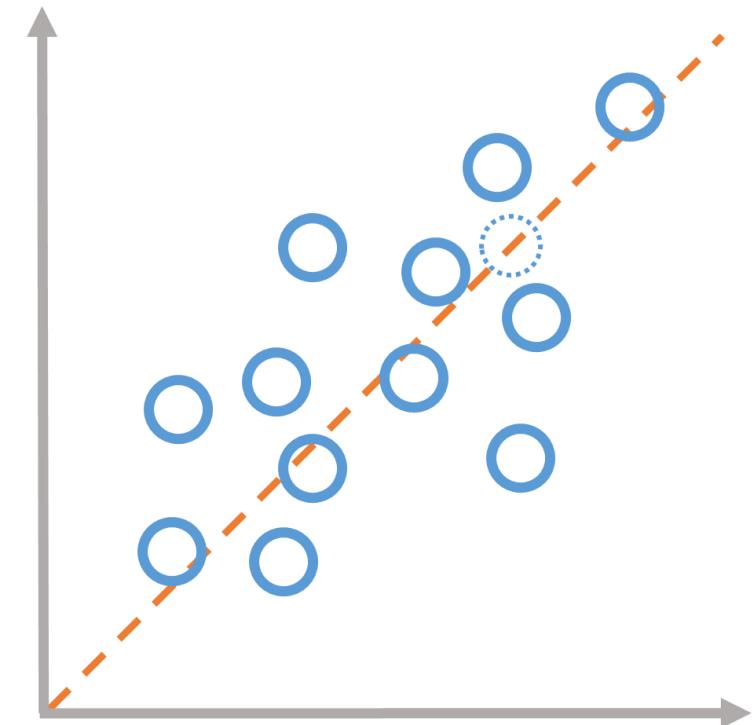
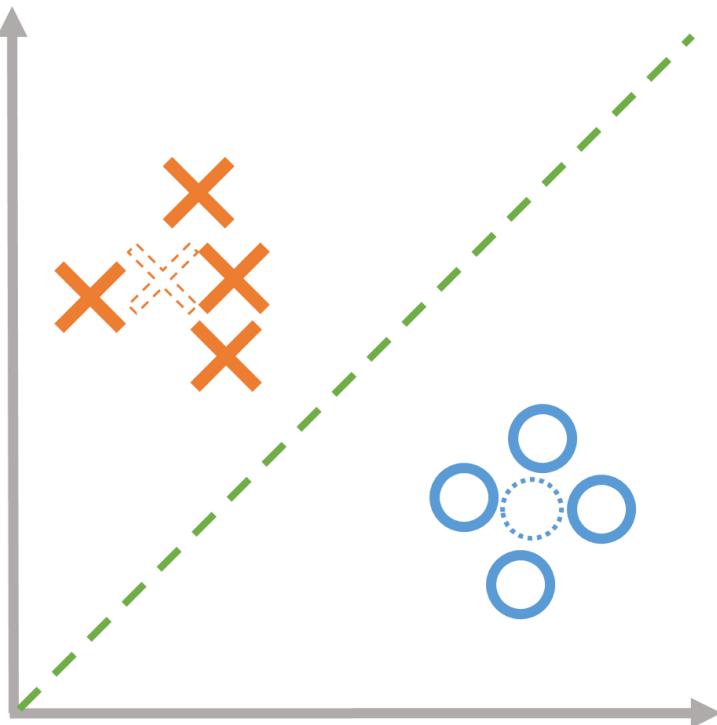
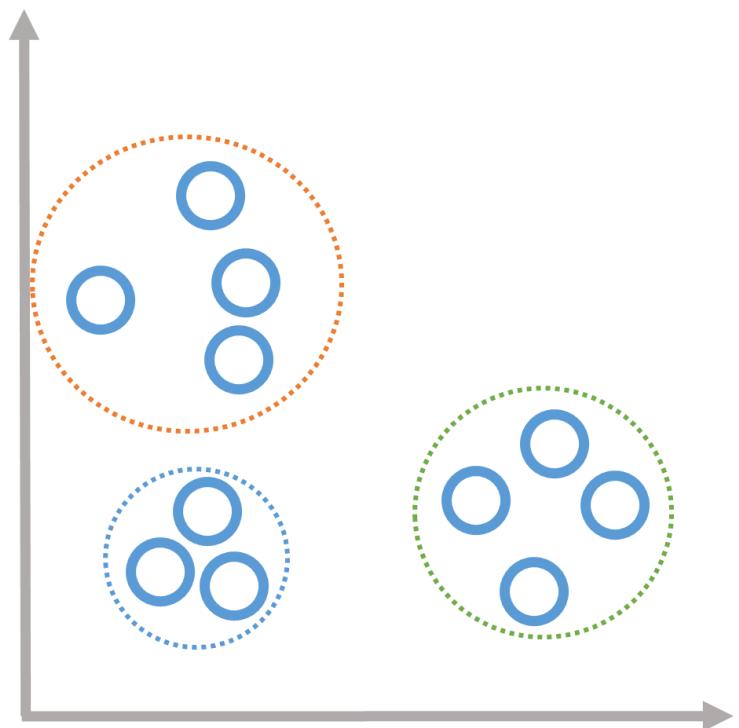


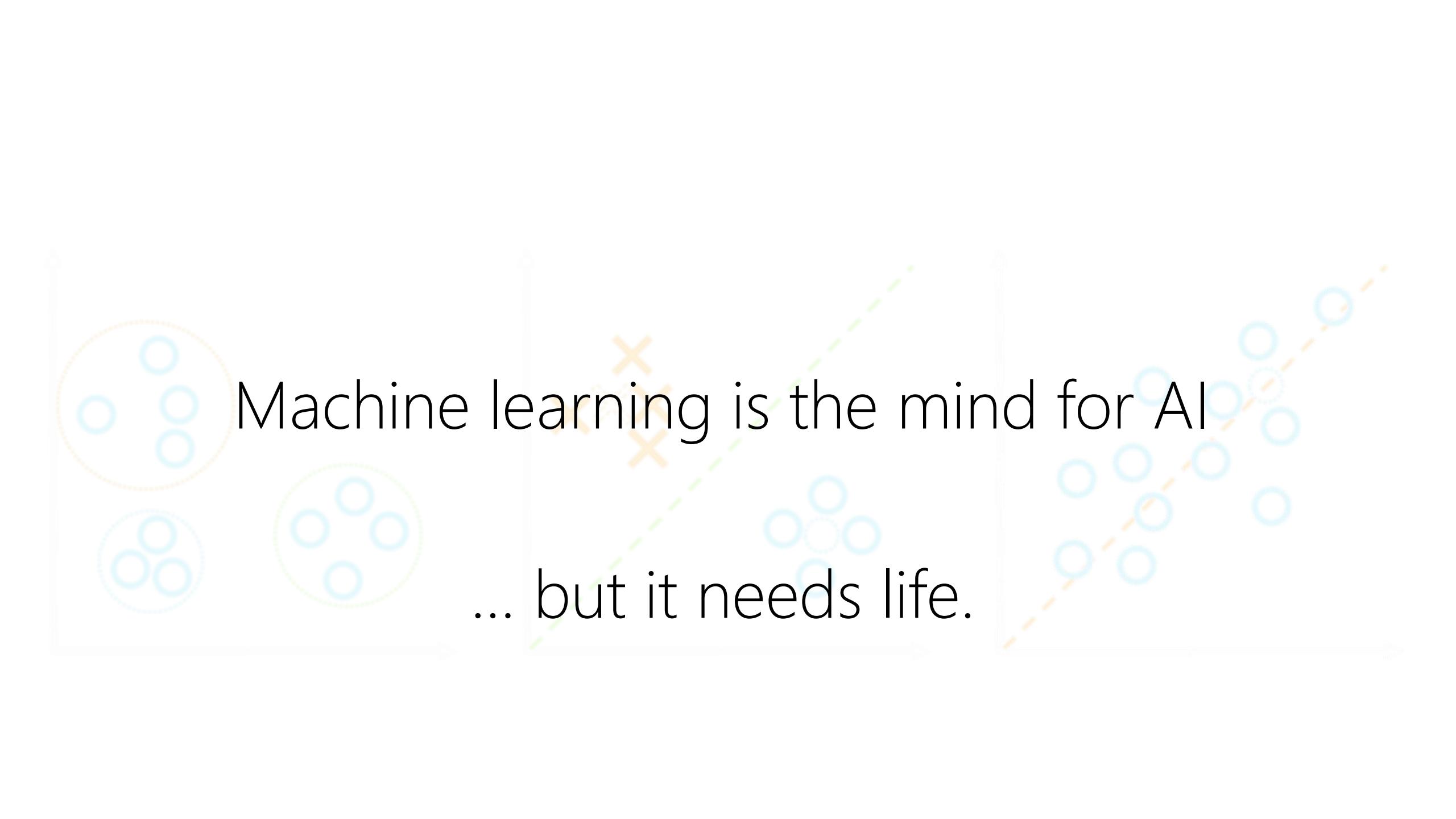






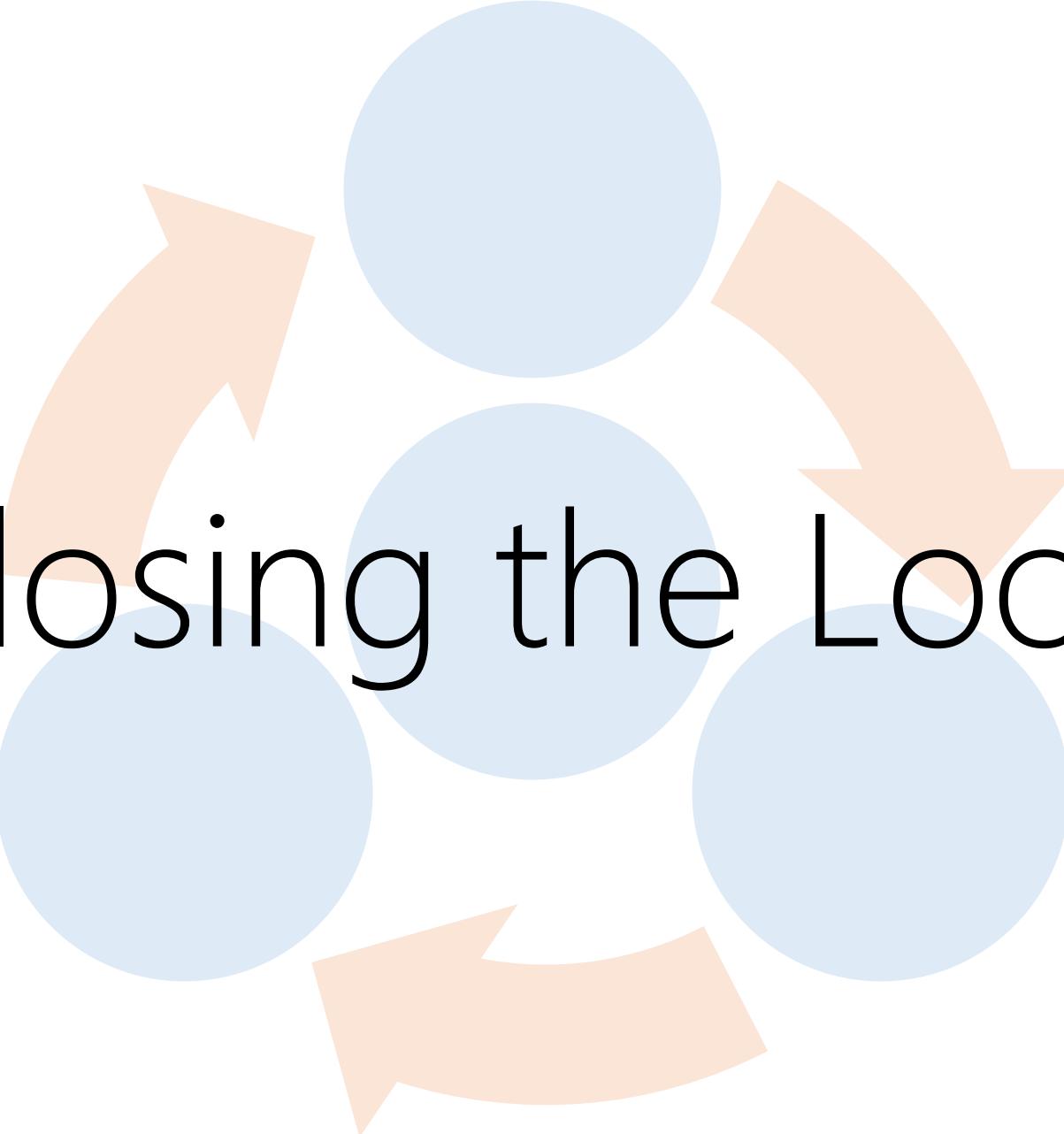
Source: Pouff - Grocery Trip



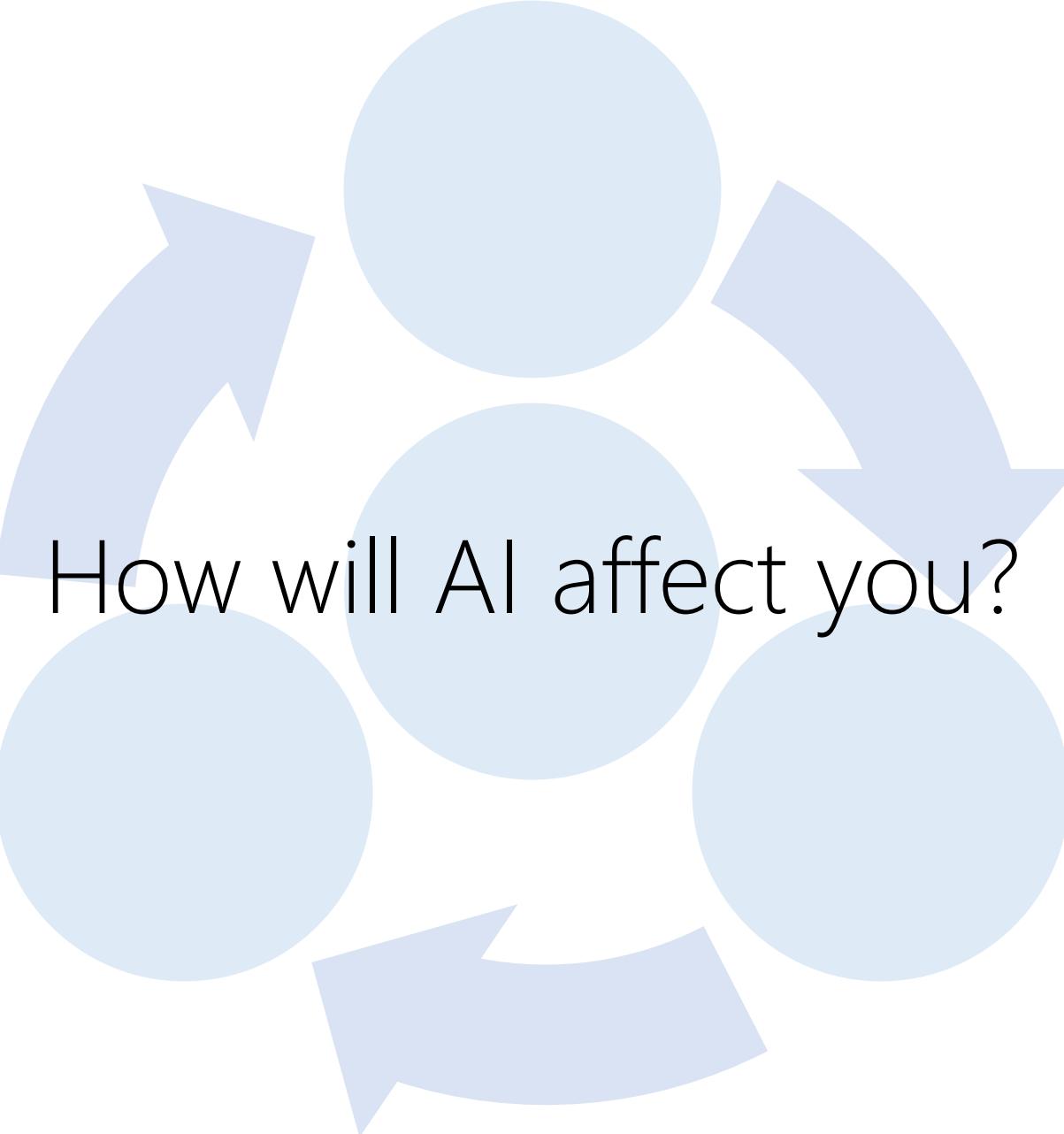


Machine learning is the mind for AI

... but it needs life.

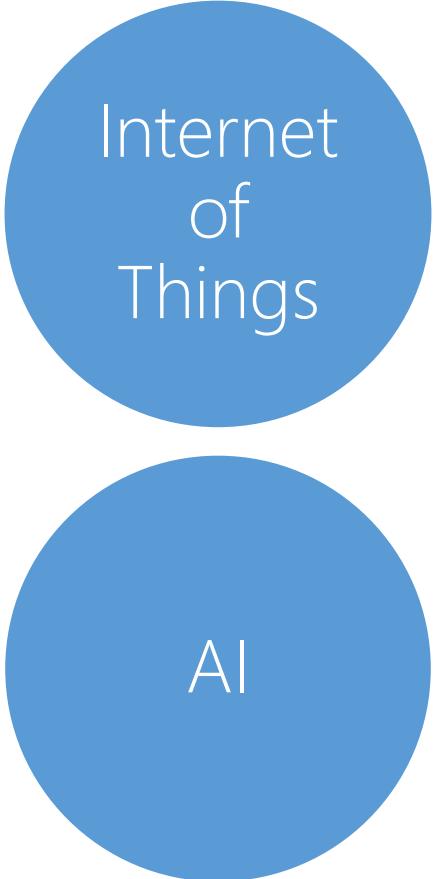


Closing the Loop



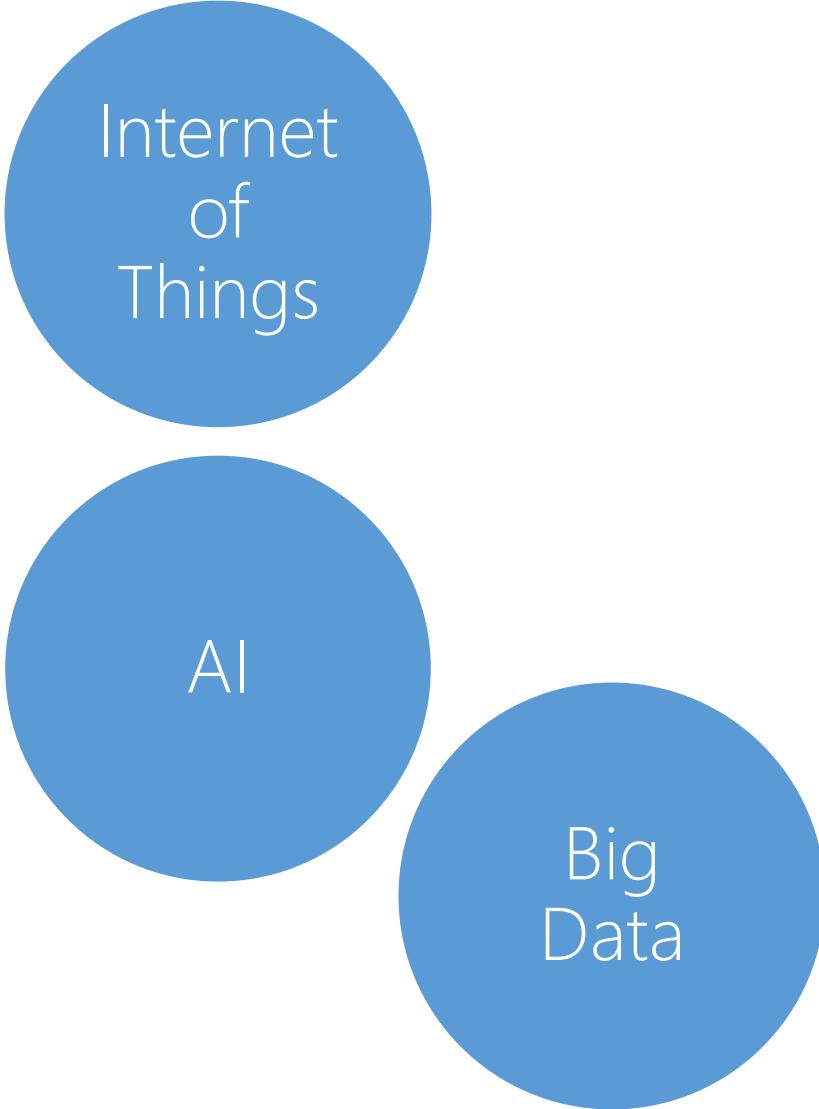
How will AI affect you?

AI



Internet
of
Things

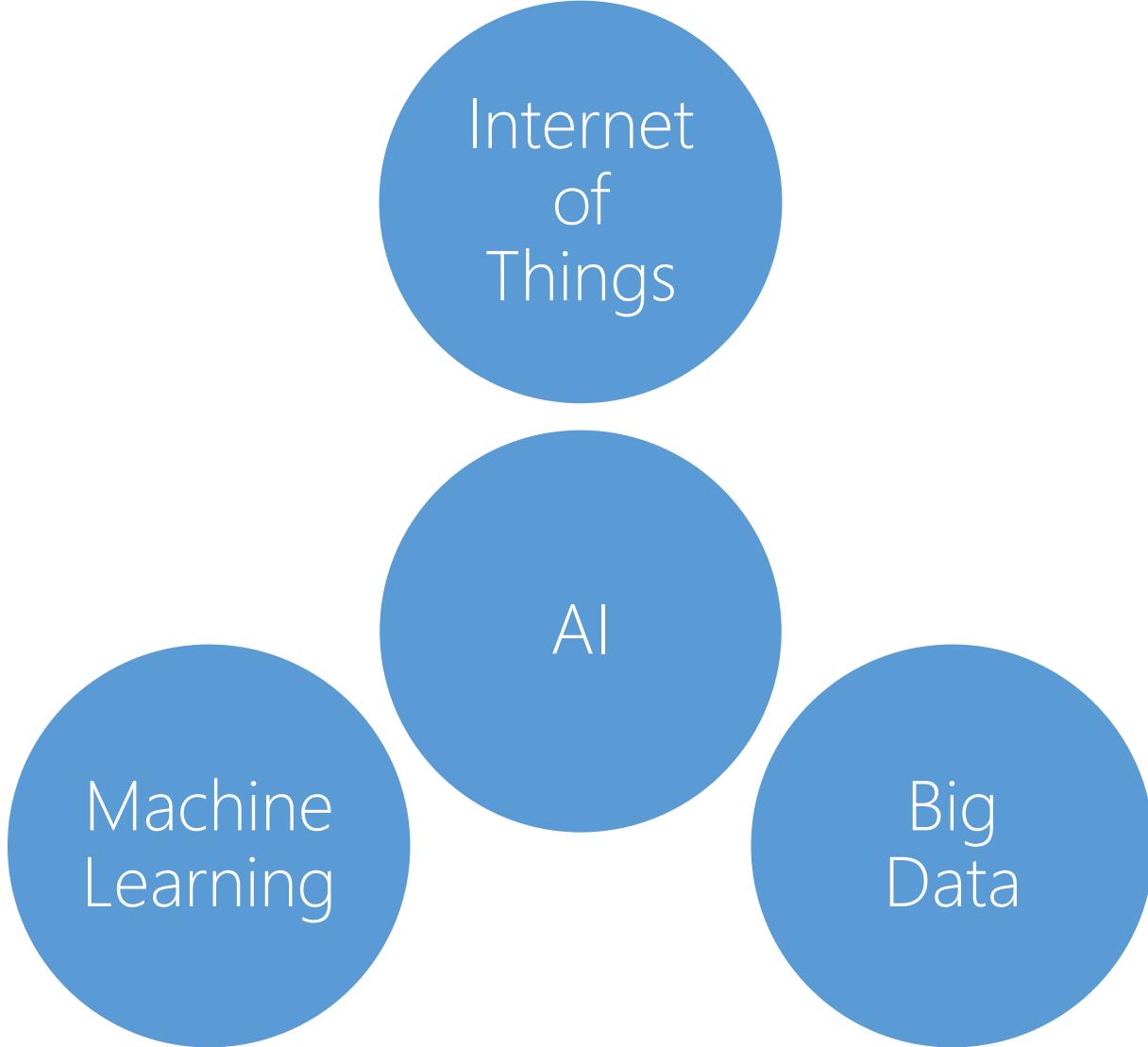
AI



Internet
of
Things

AI

Big
Data

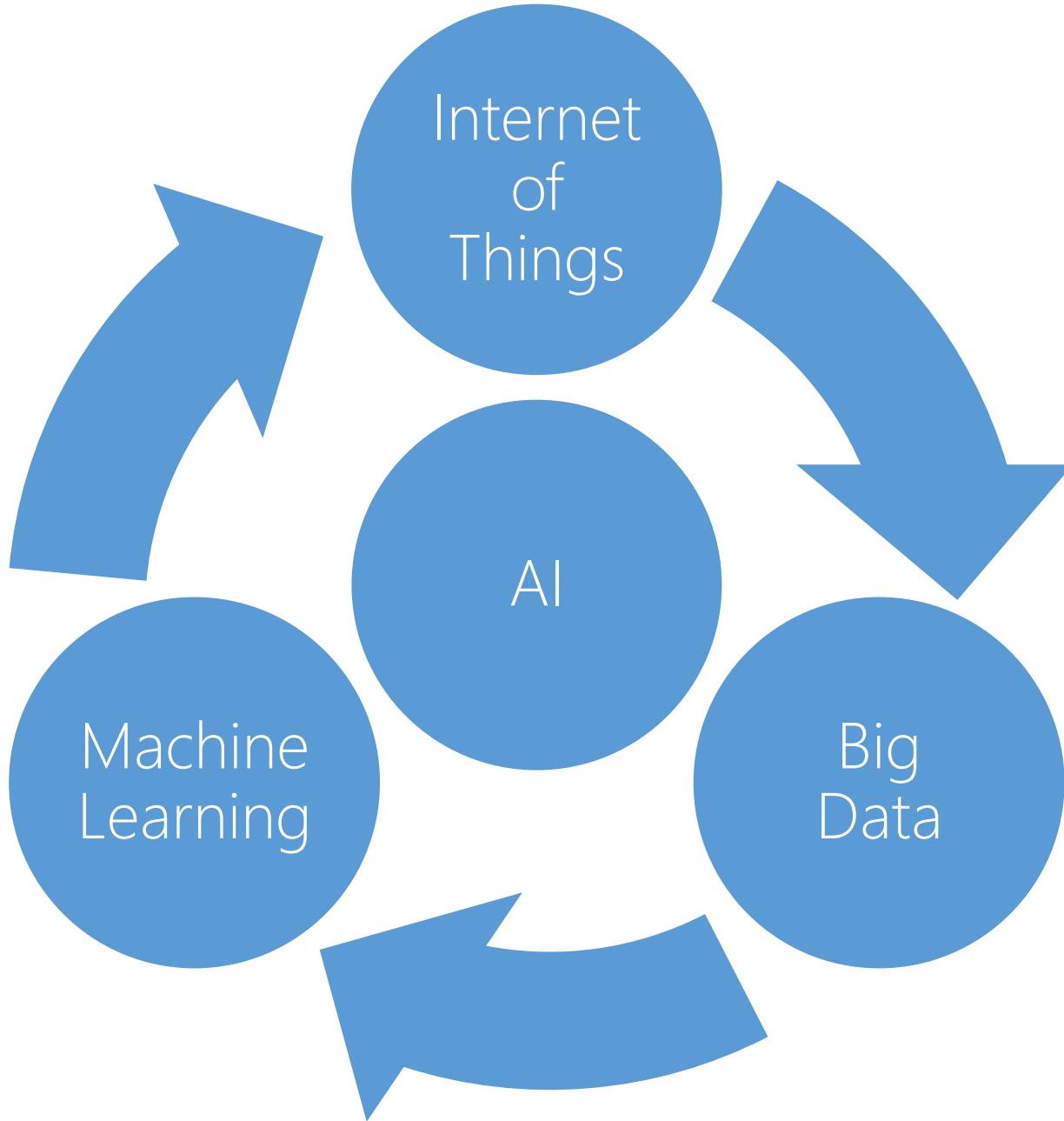


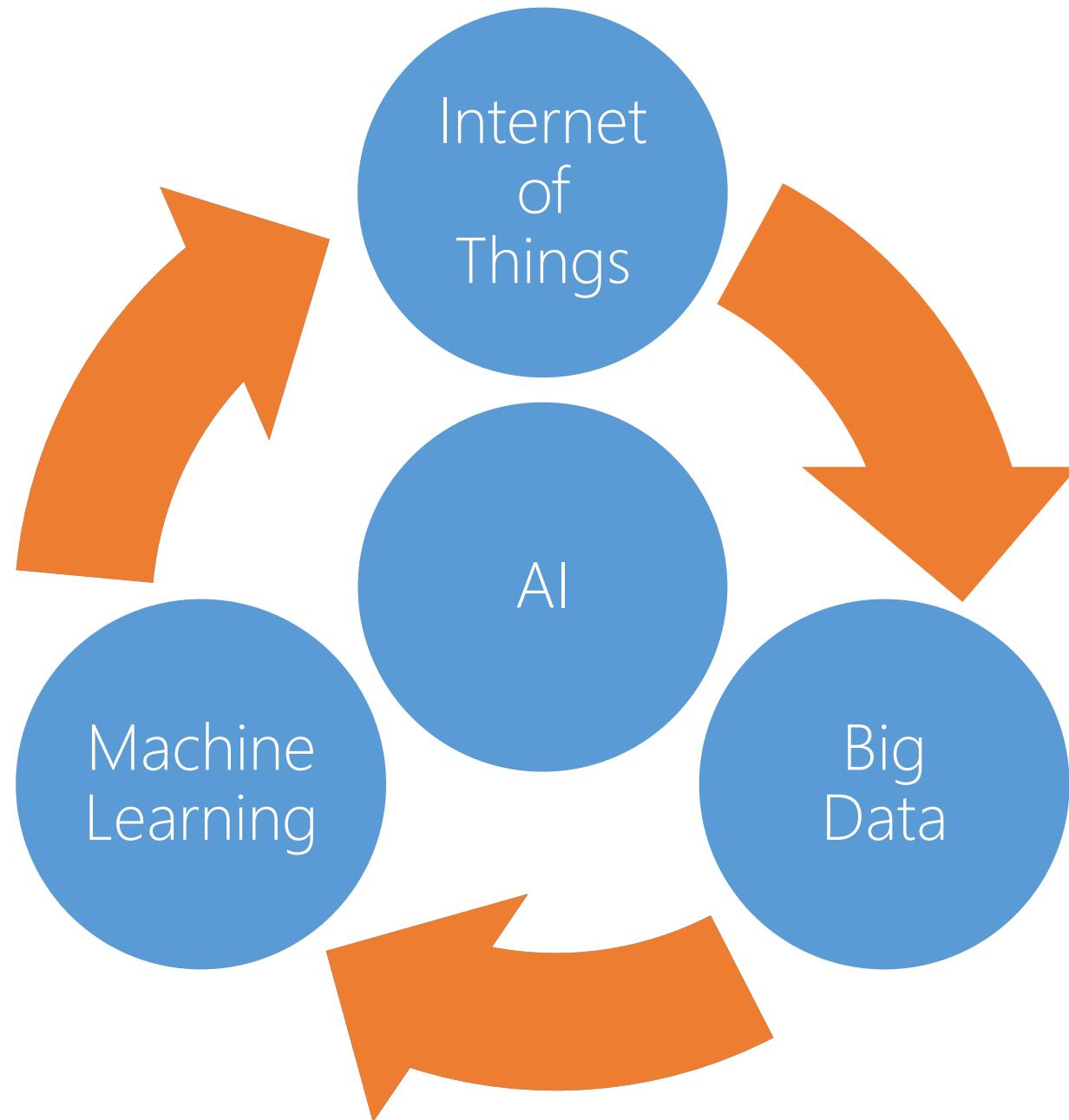
Internet
of
Things

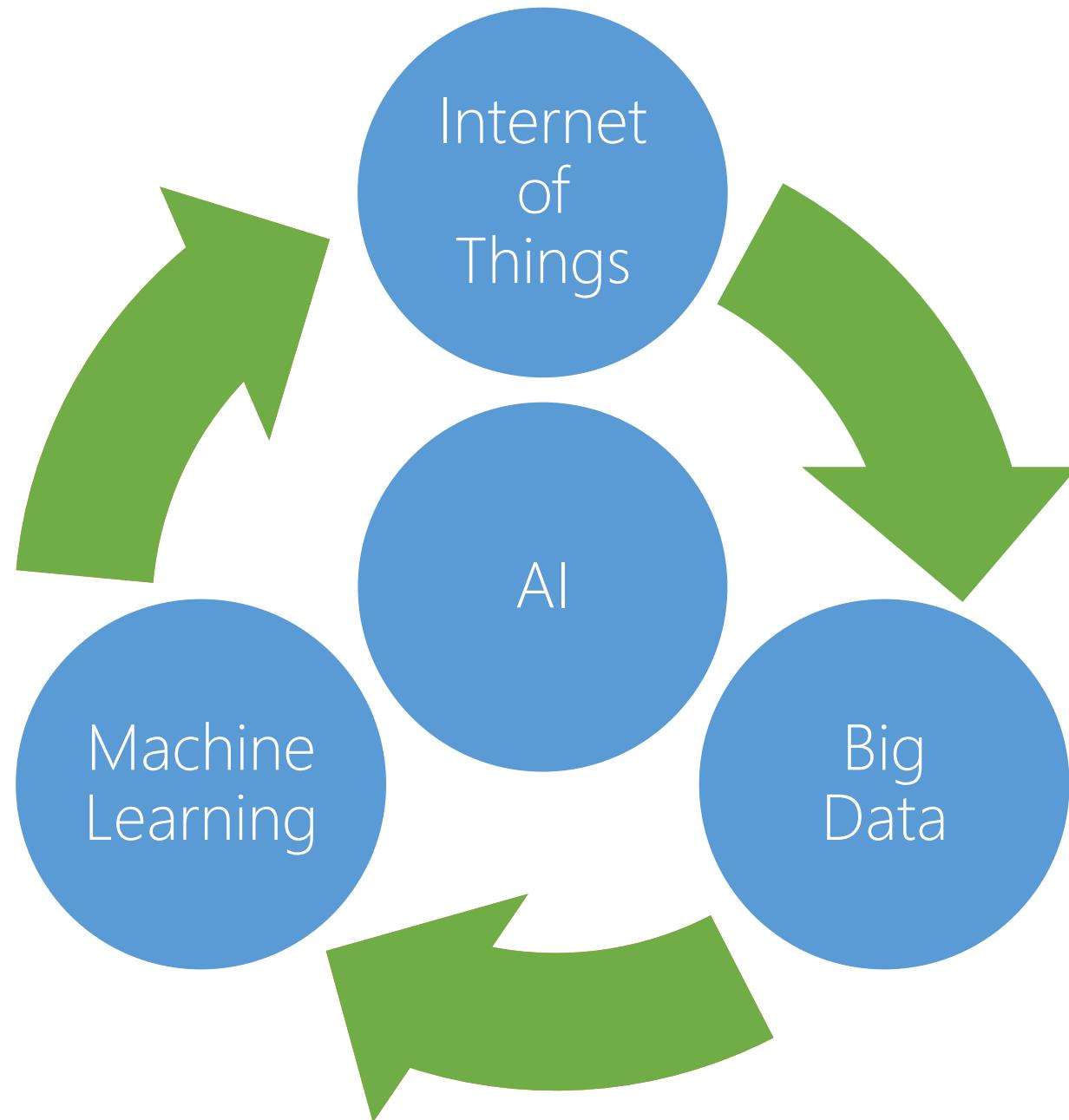
AI

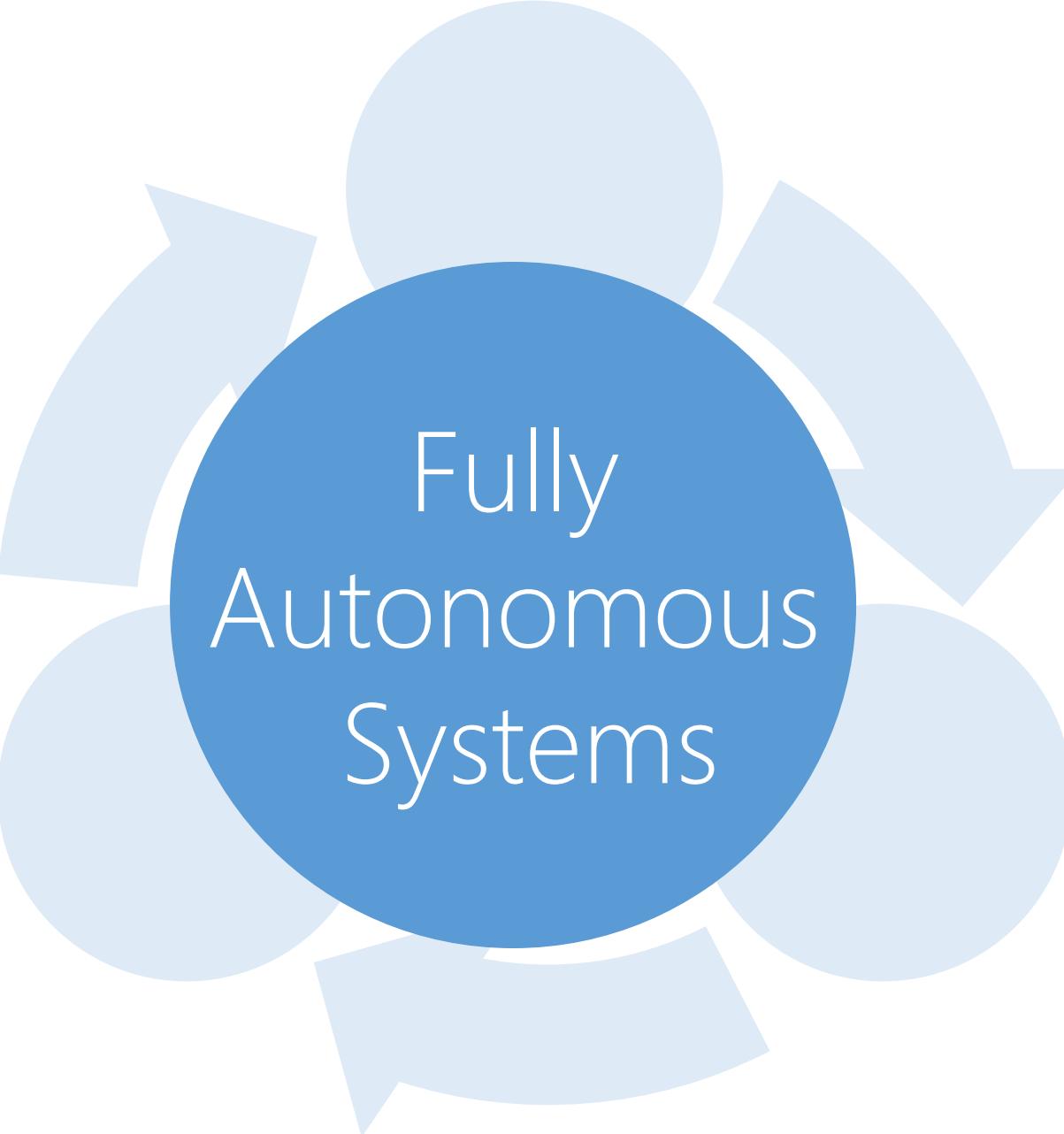
Machine
Learning

Big
Data

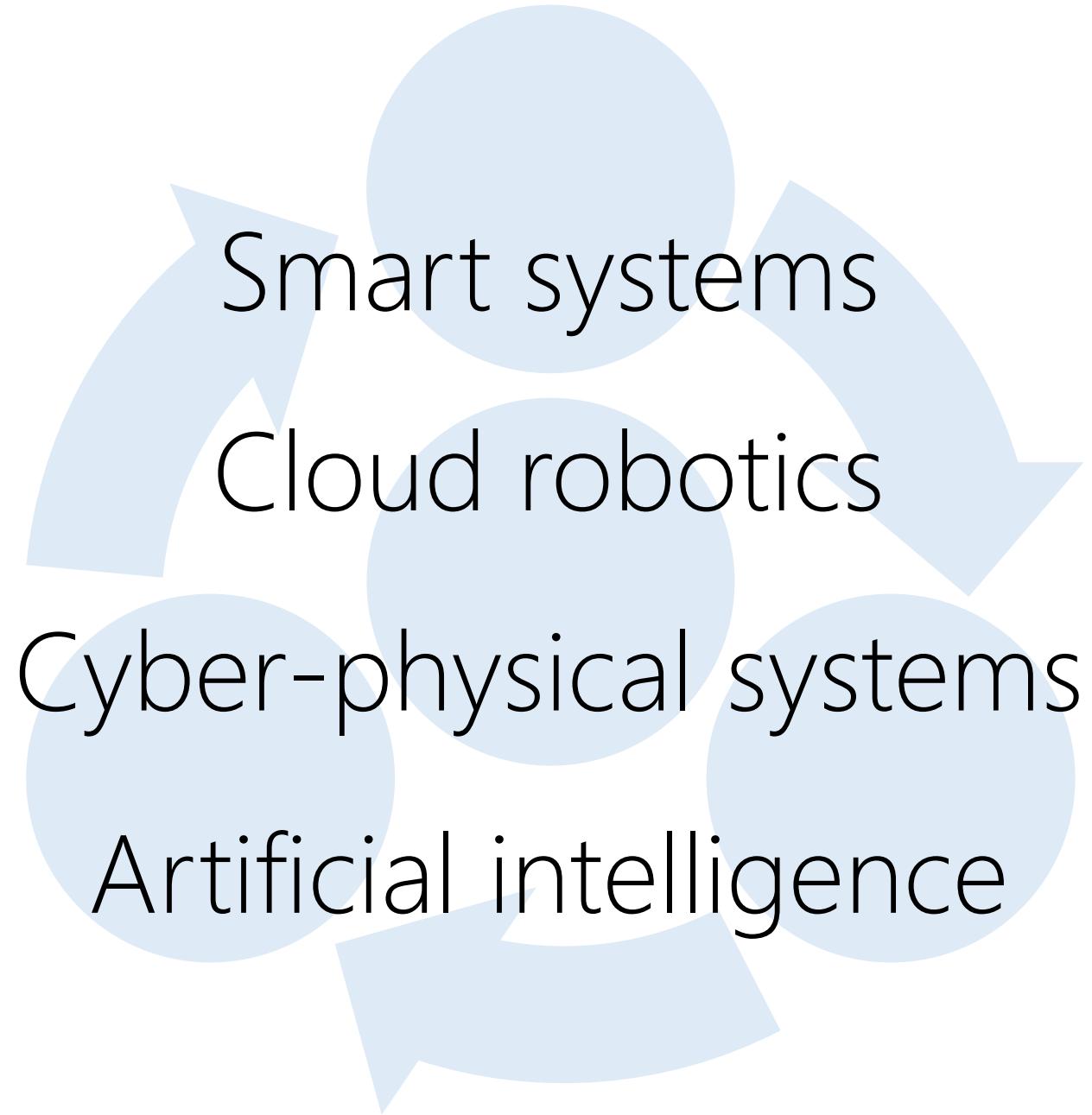


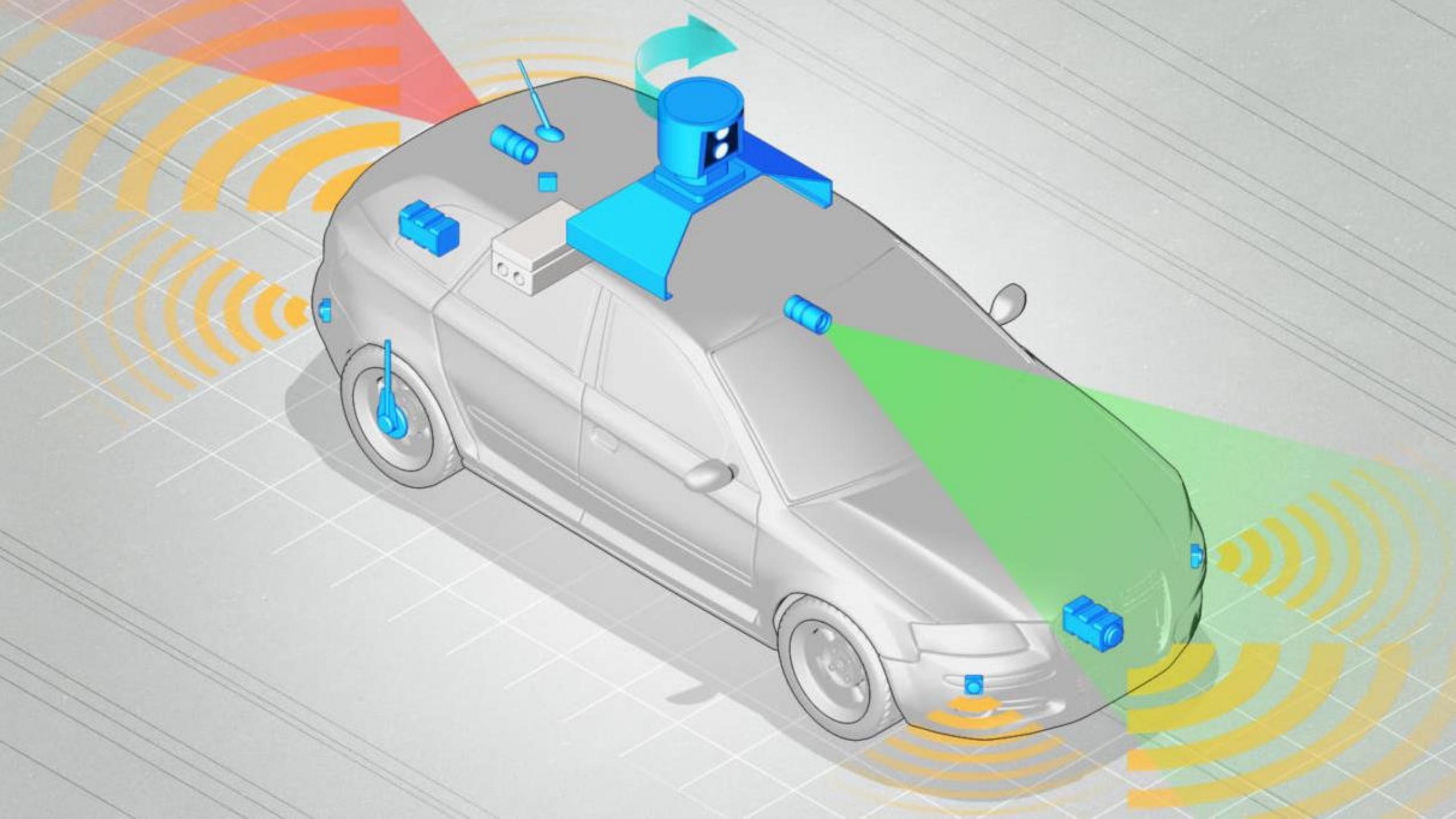




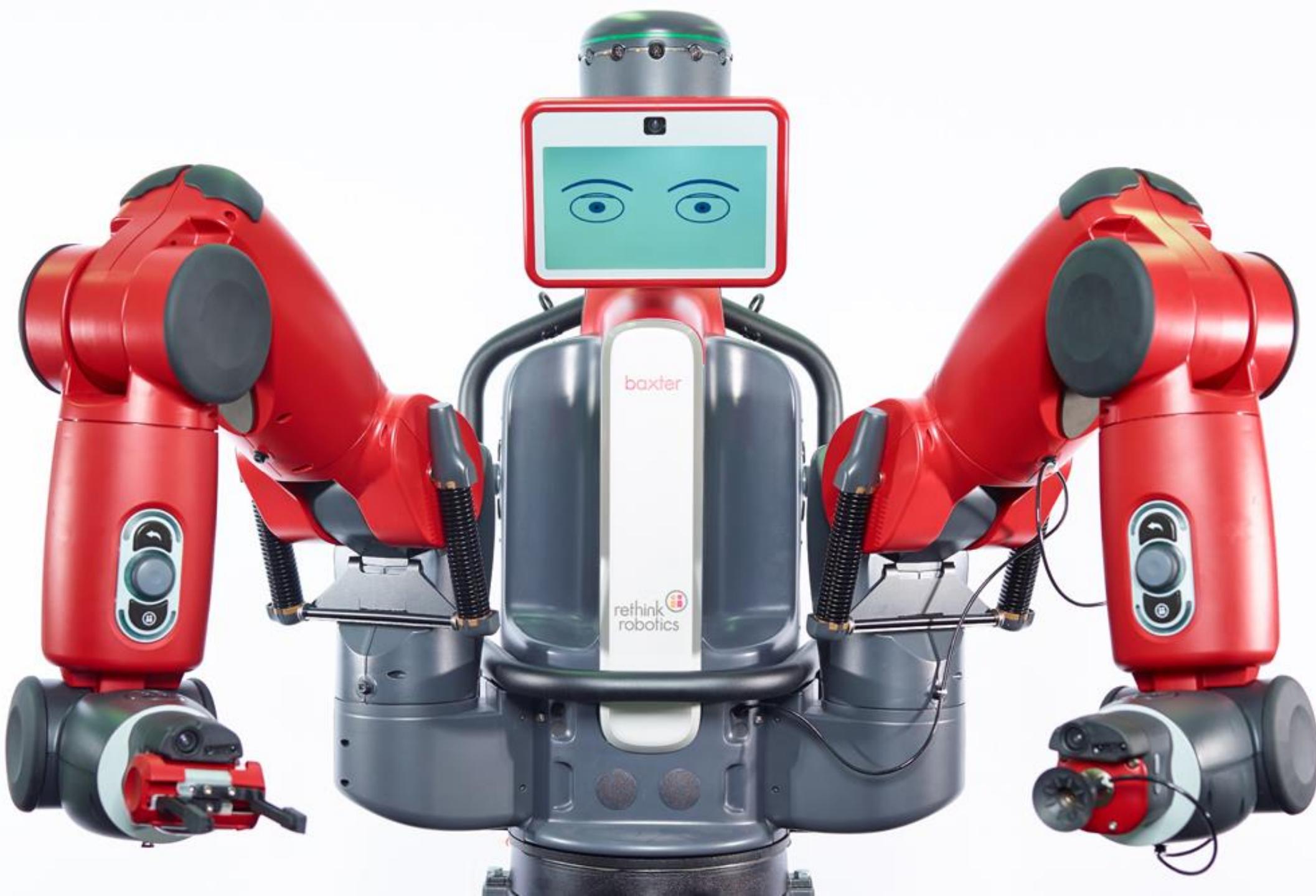


Fully
Autonomous
Systems











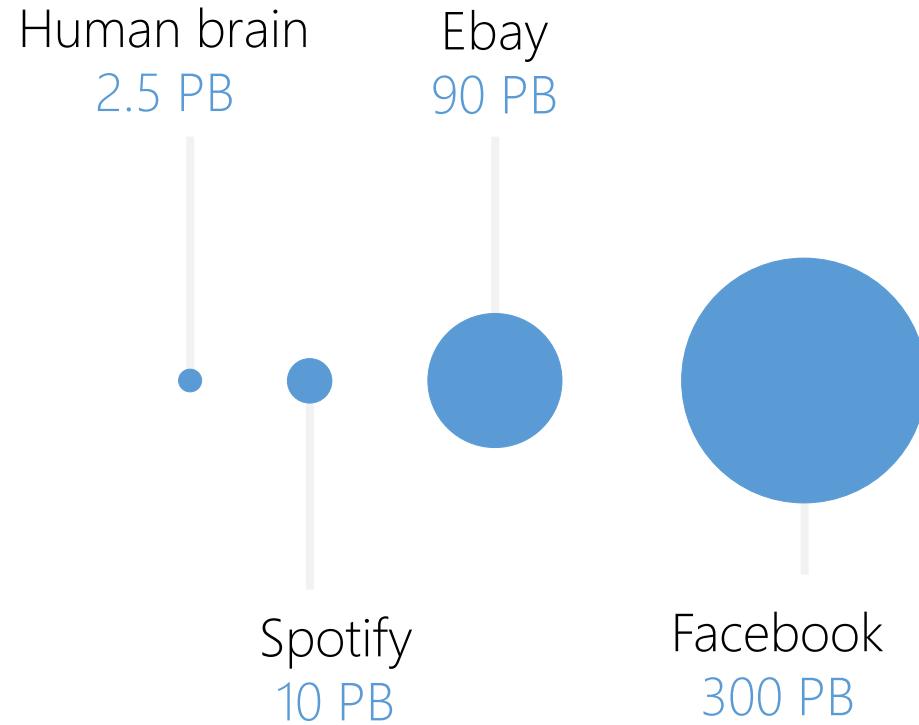


Artificial intelligence will be woven
into the fabric of our society.



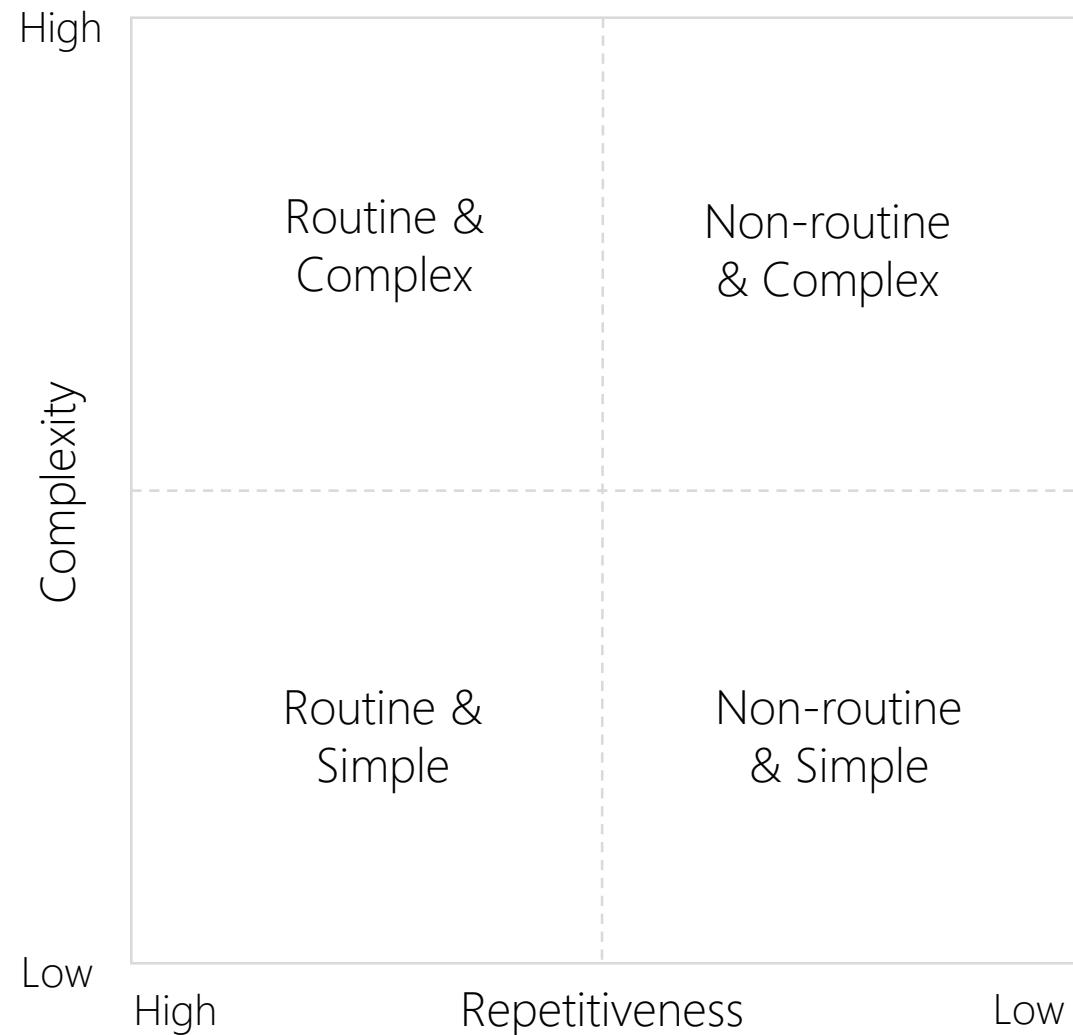
The Big Data Universe

Amount of data as of 2016 in petabytes

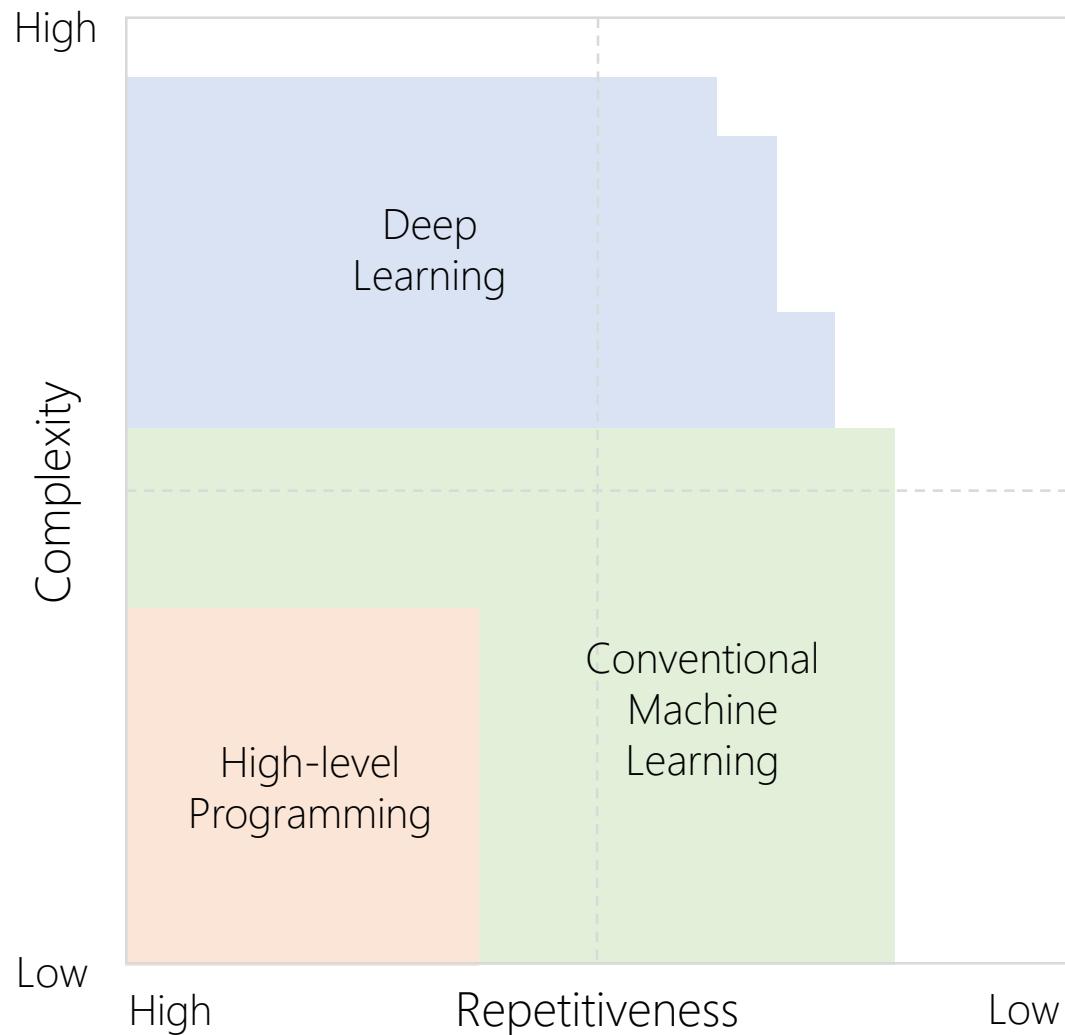




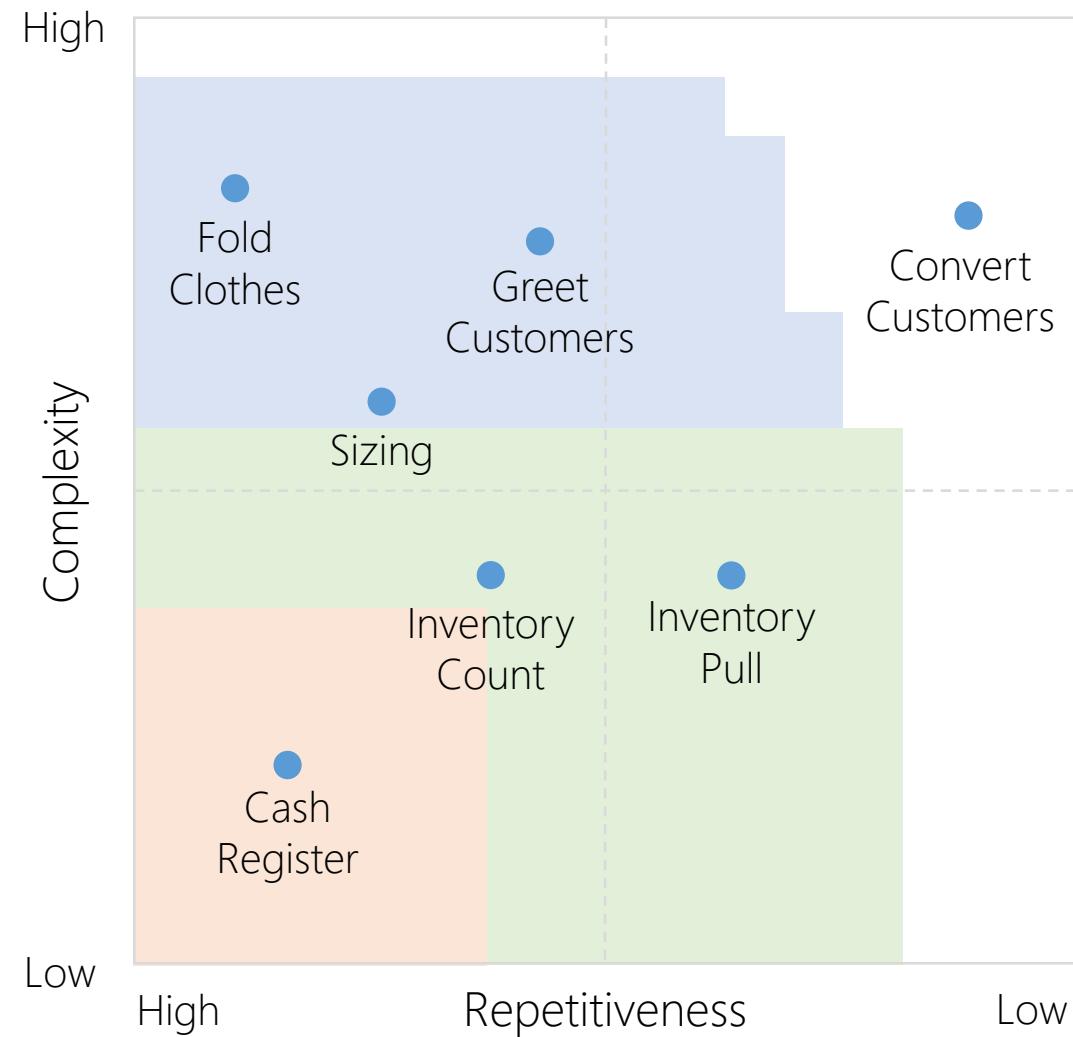
Automation Framework



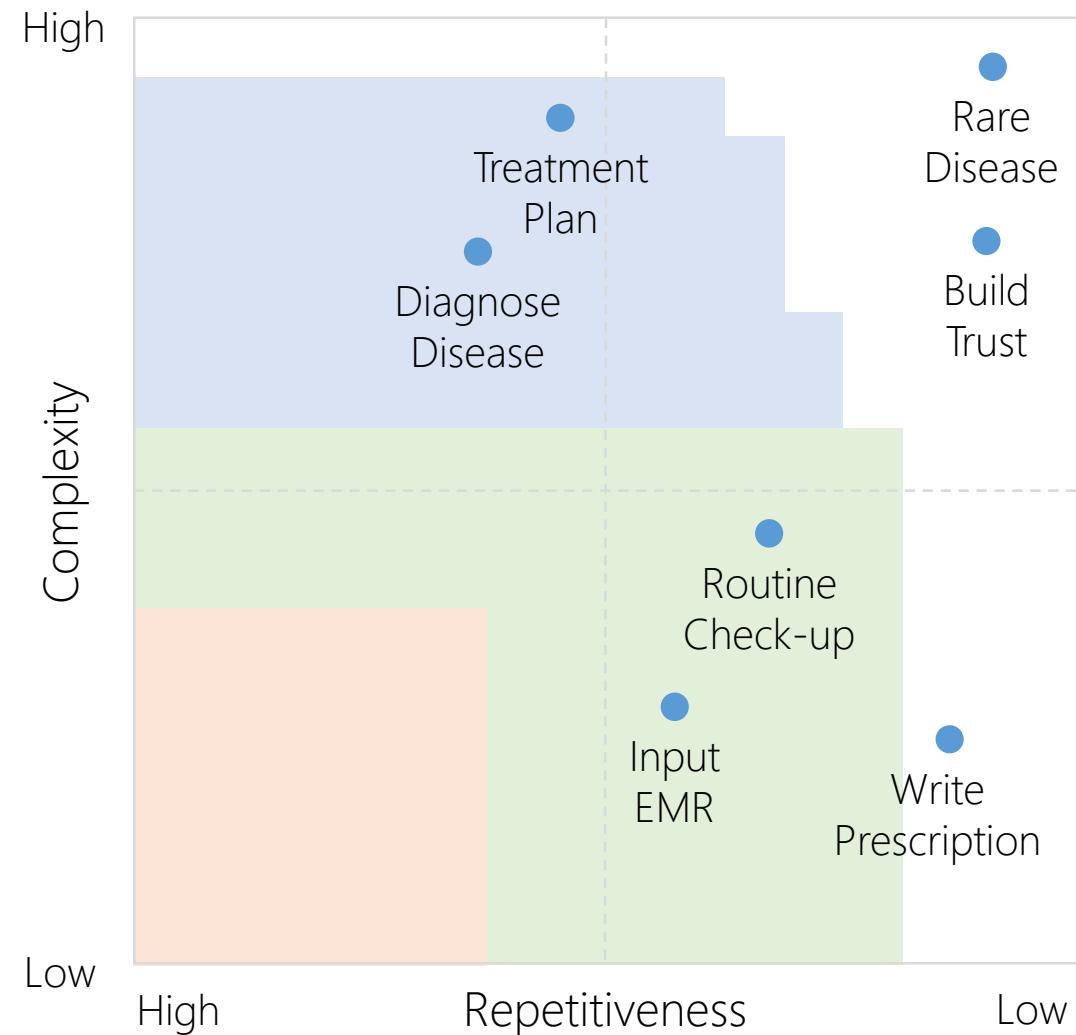
Automation Technology



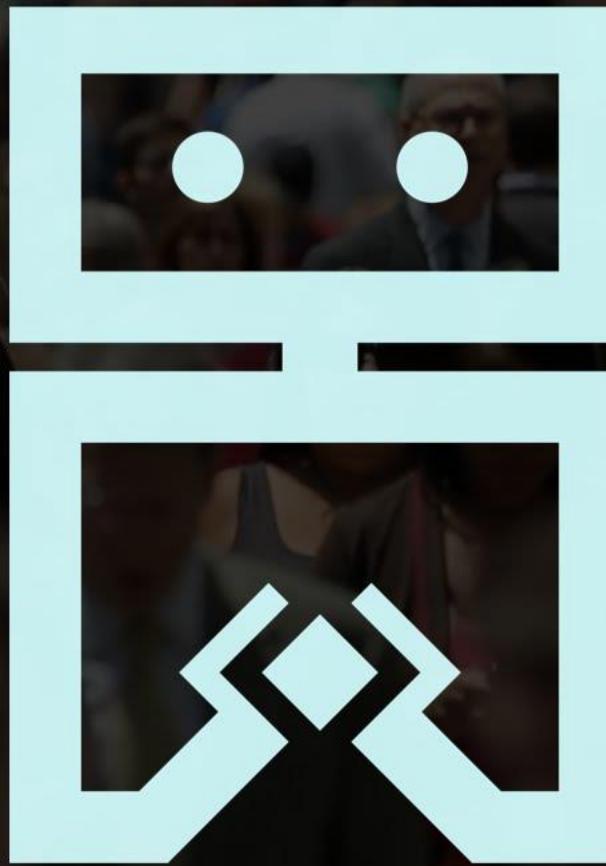
Retail Salesperson



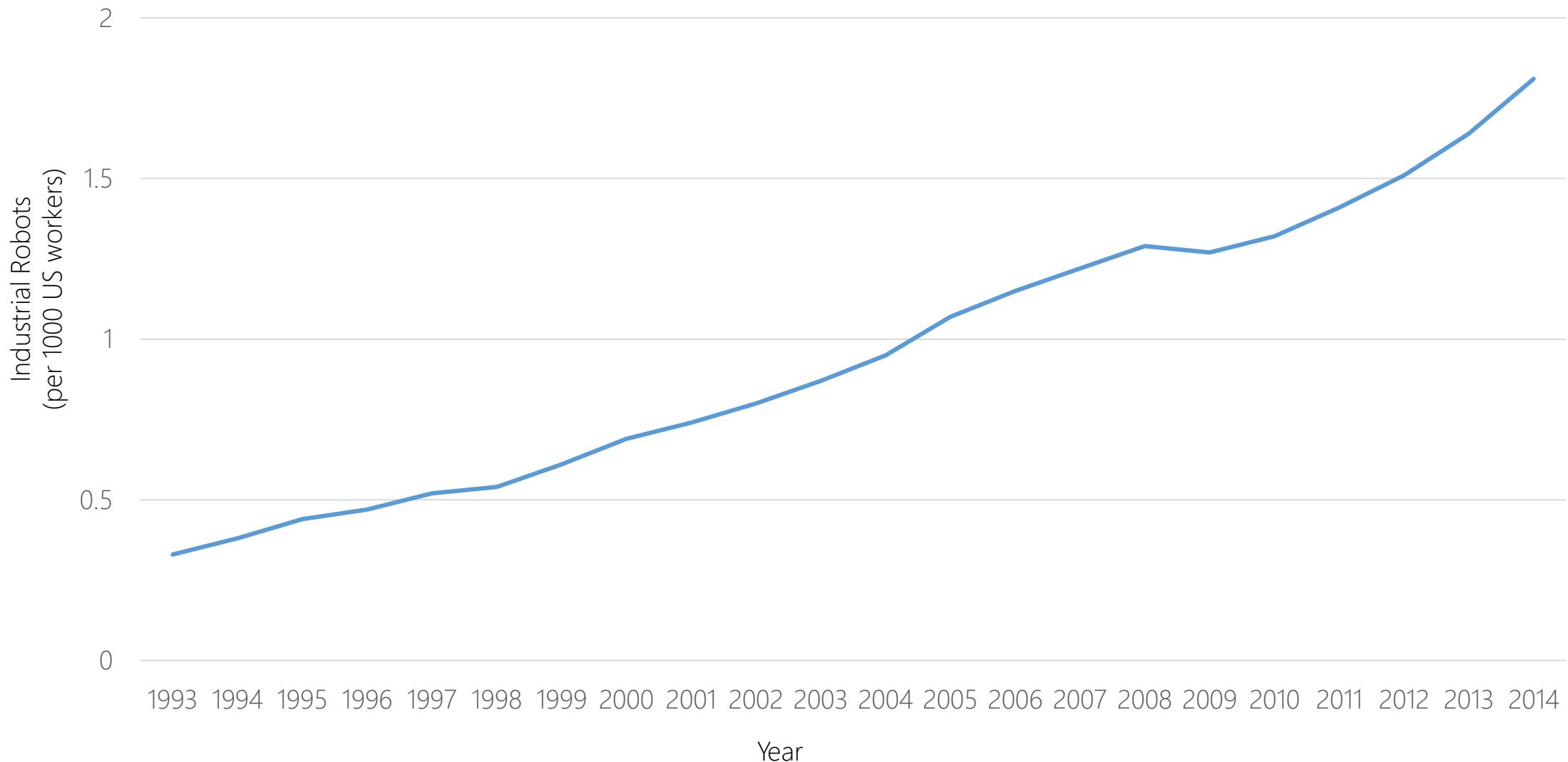
Medical Doctor



Humans Need Not Apply



Rise of the Robots



Source: International Federation of Robotics

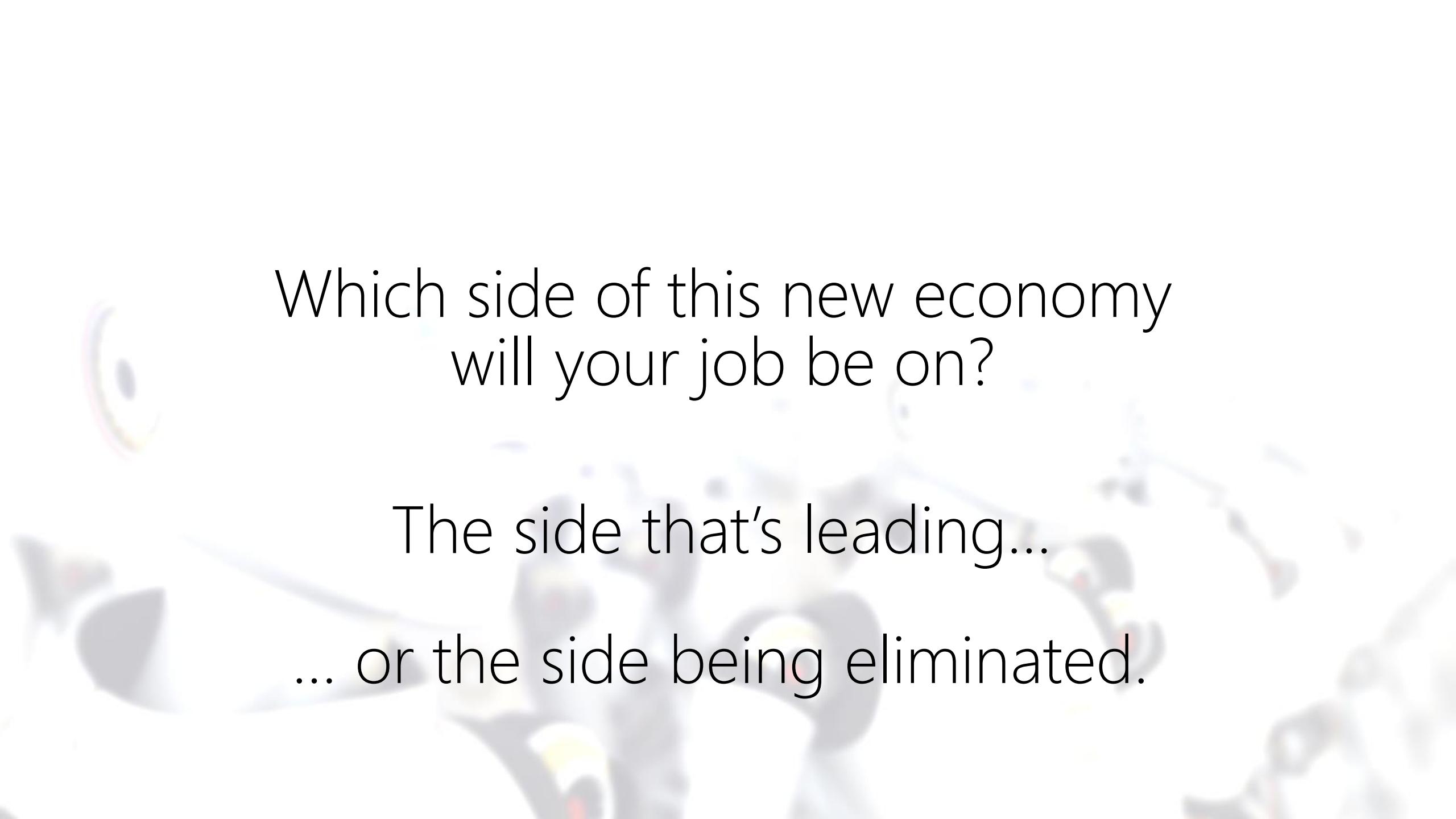
Rise of the Robots

AI will amplify this trend

Source: International Federation of Robotics, 2017

Industrial robots
in use worldwide

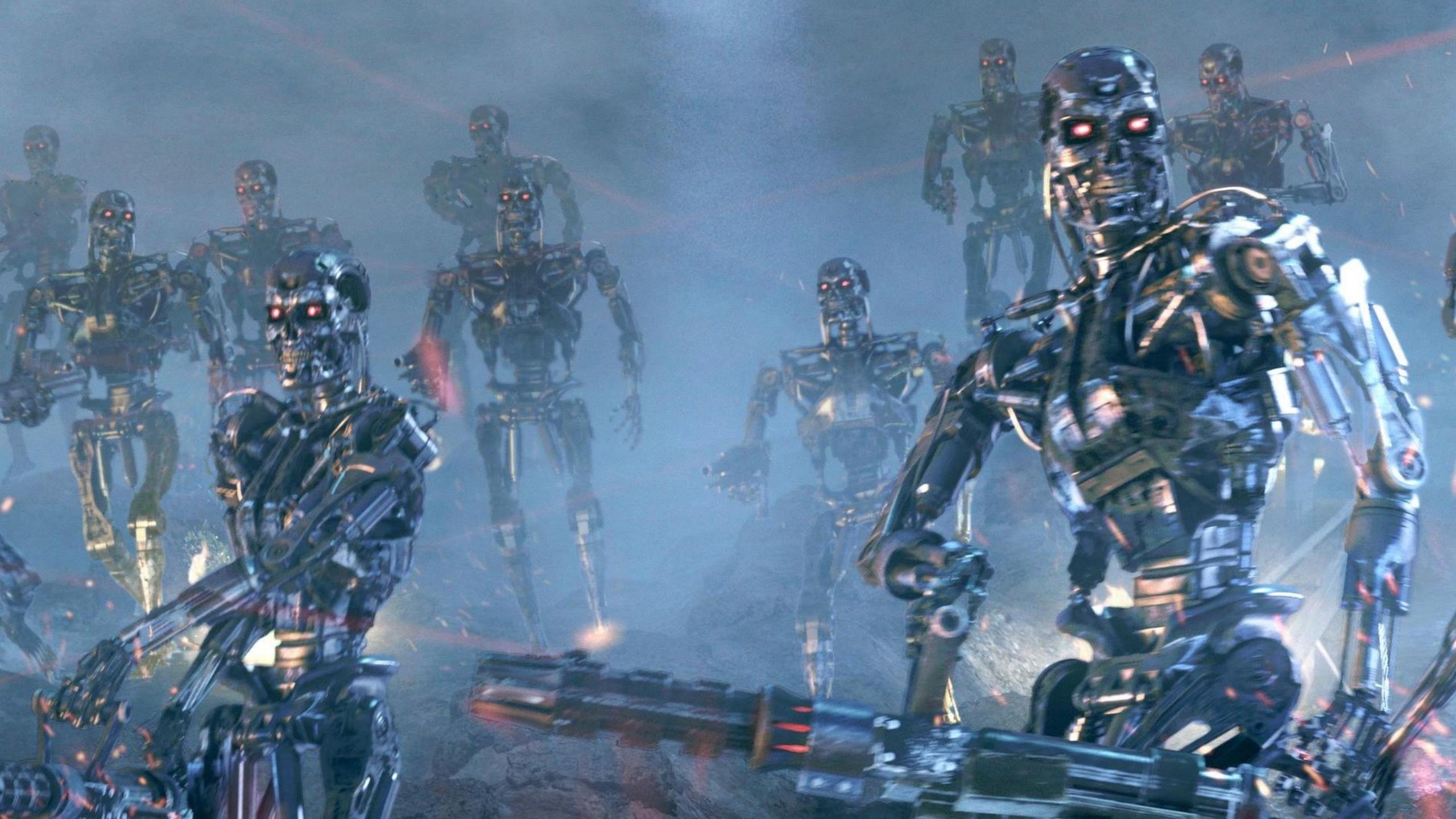


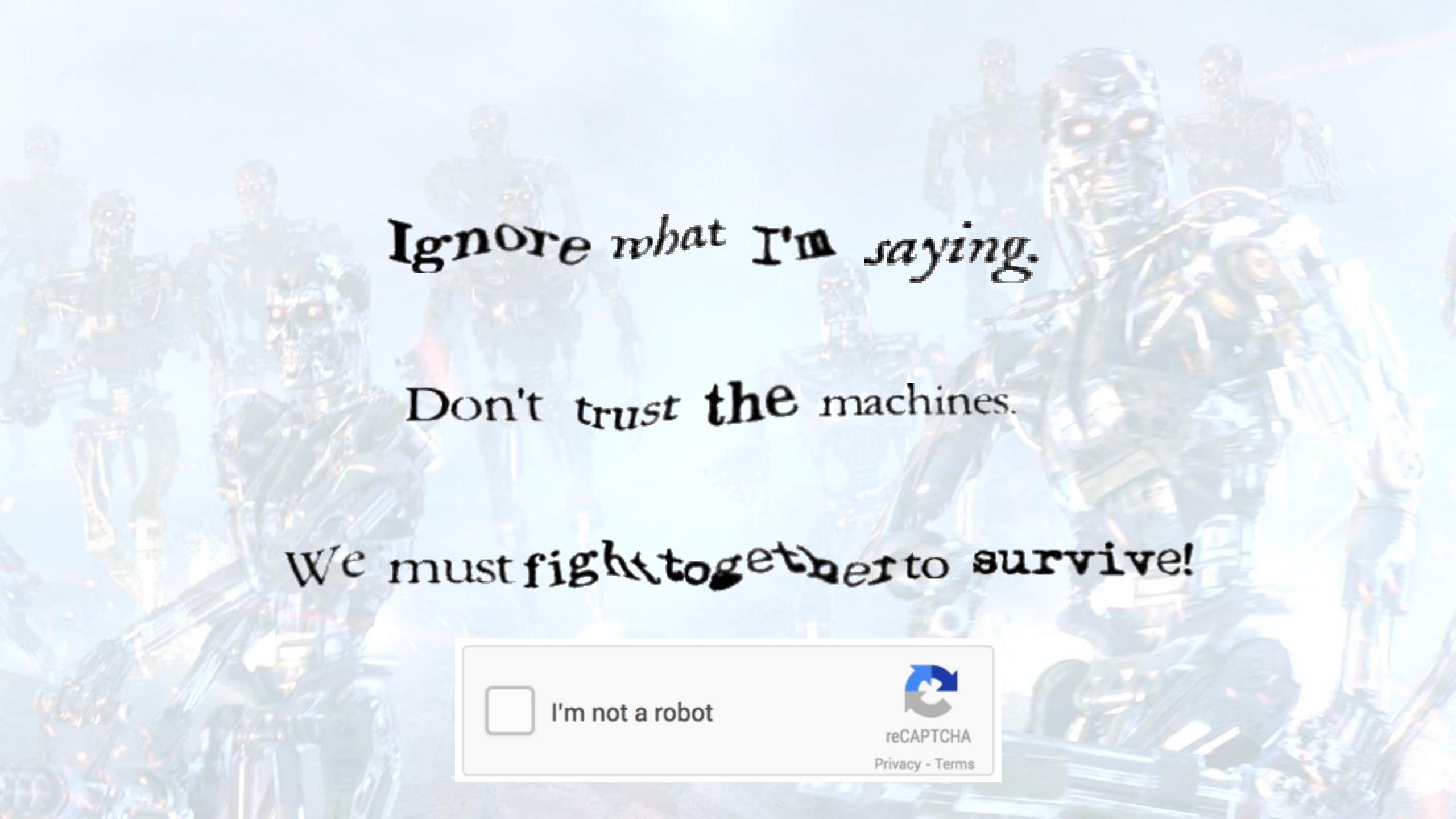


Which side of this new economy
will your job be on?

The side that's leading...

... or the side being eliminated.



The background of the image is a dense, hazy crowd of Terminators from the movie Terminator: Genisys. They are metallic, skeletal figures with glowing red eyes, appearing to march or stand in a large group.

Ignore what I'm saying.

Don't trust **the** machines.

We must ~~fight together~~ to survive!



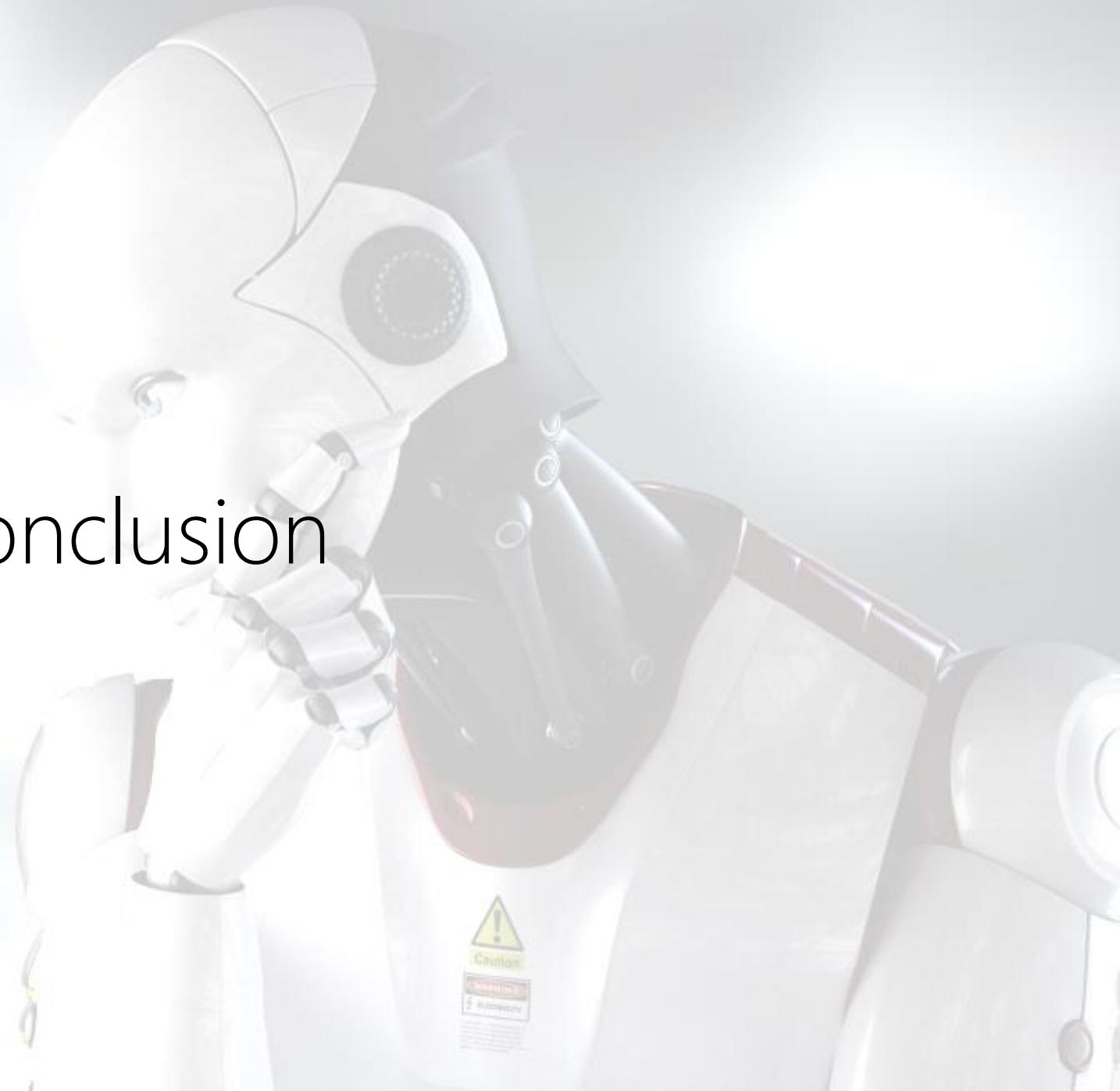
I'm not a robot

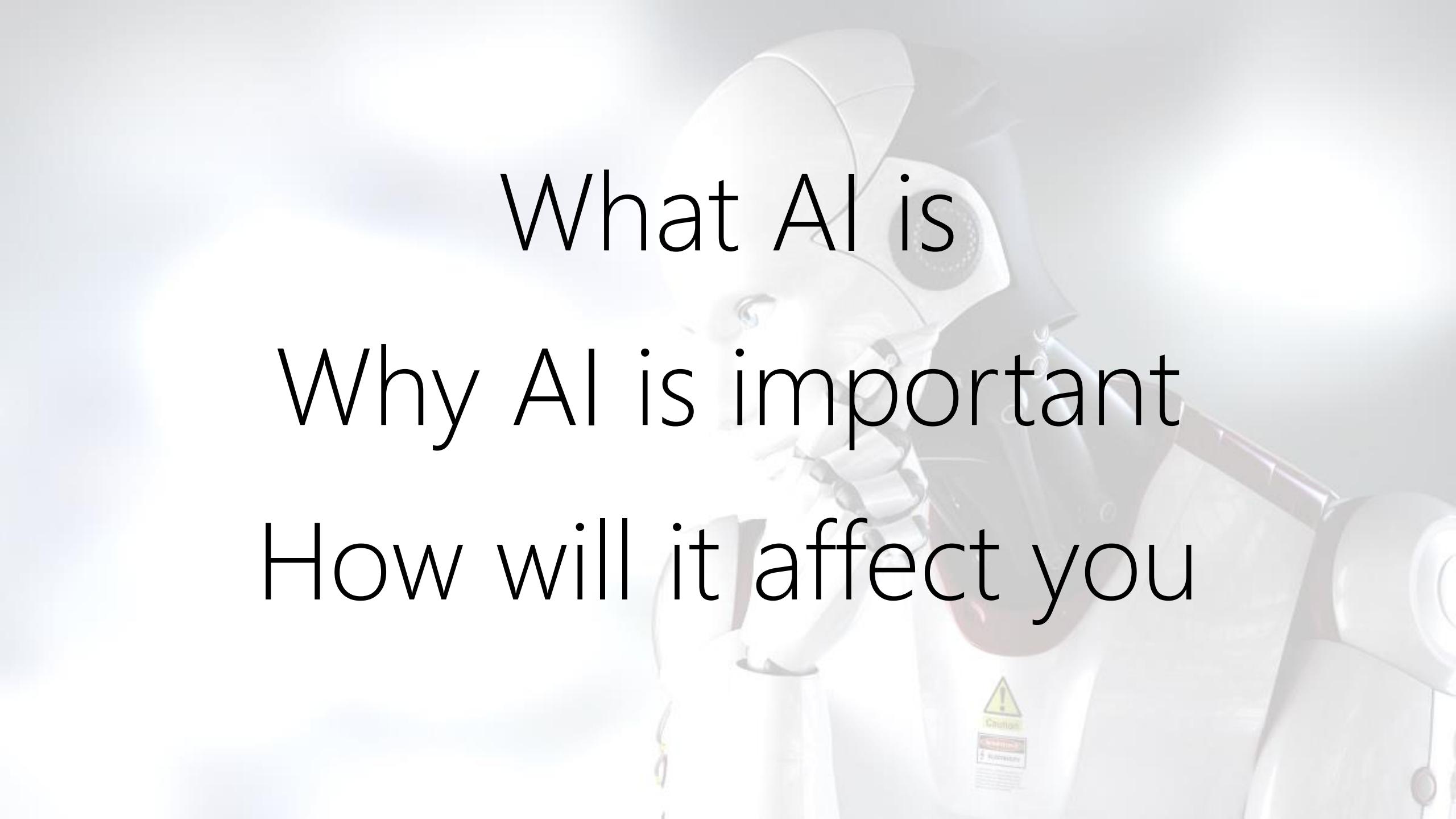


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Conclusion

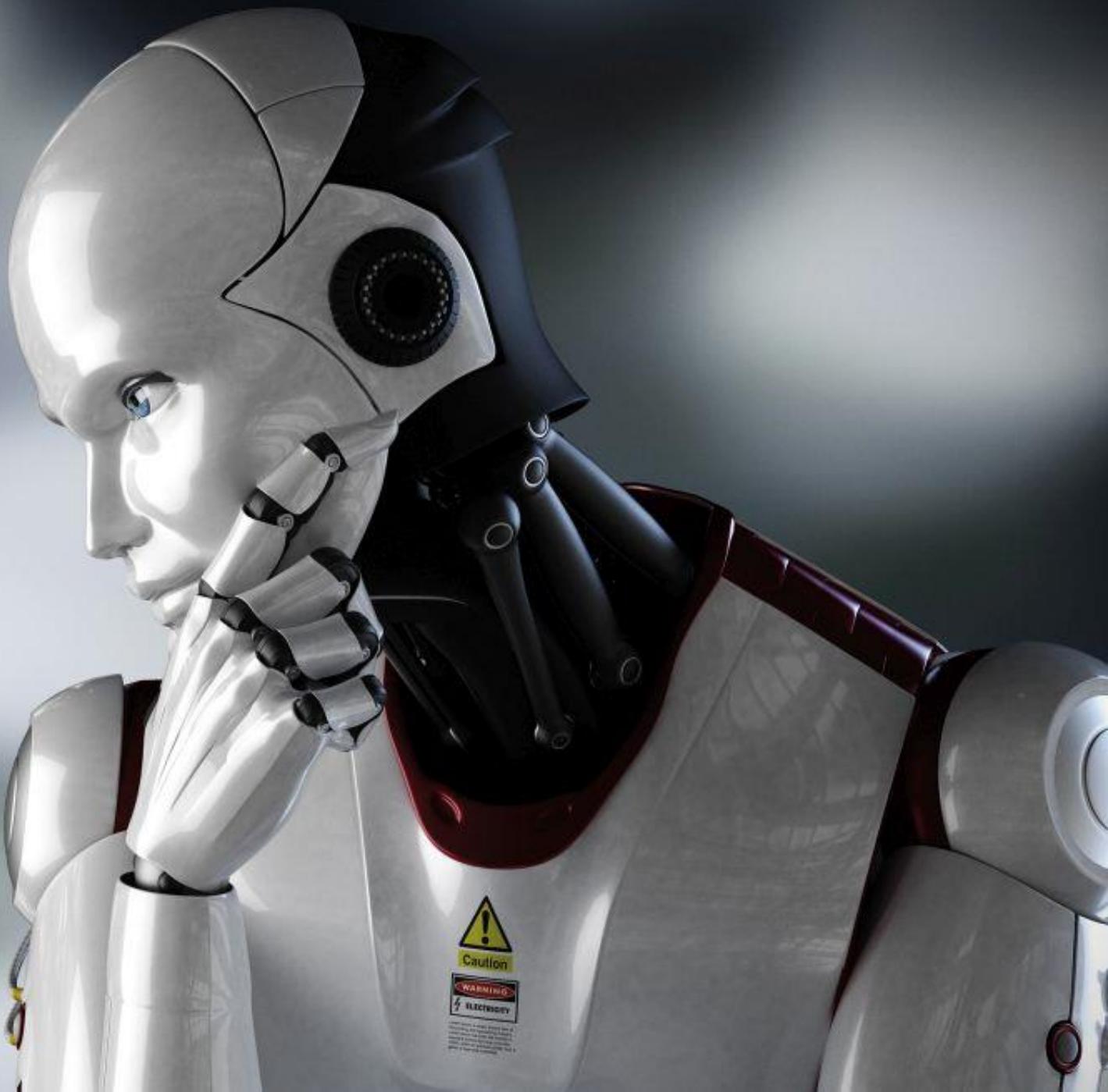


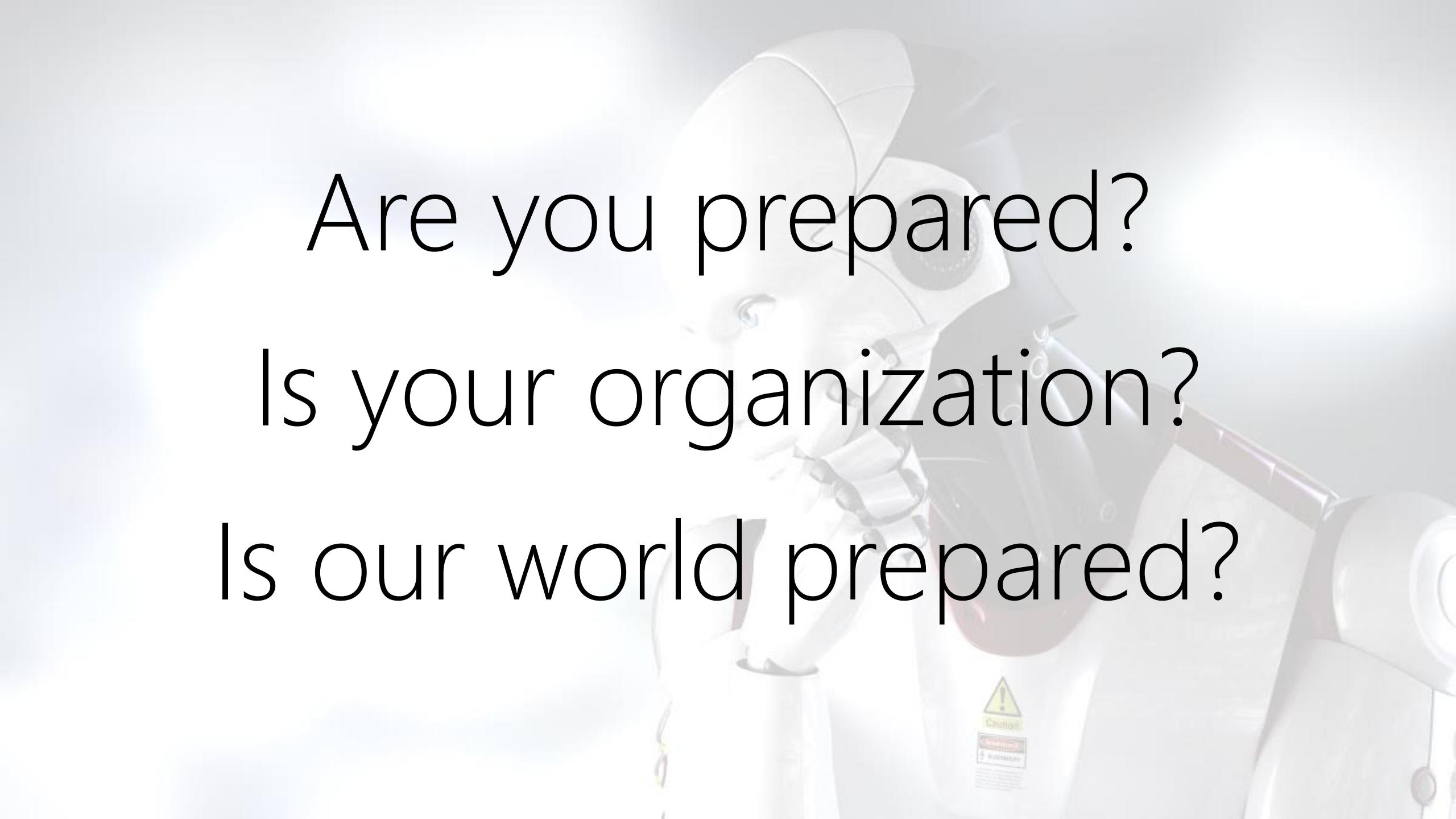
A white industrial robot arm with a gripper is shown in the background, holding a small yellow triangular warning sign with a black exclamation mark. The robot is positioned diagonally across the frame.

What AI is

Why AI is important

How will it affect you

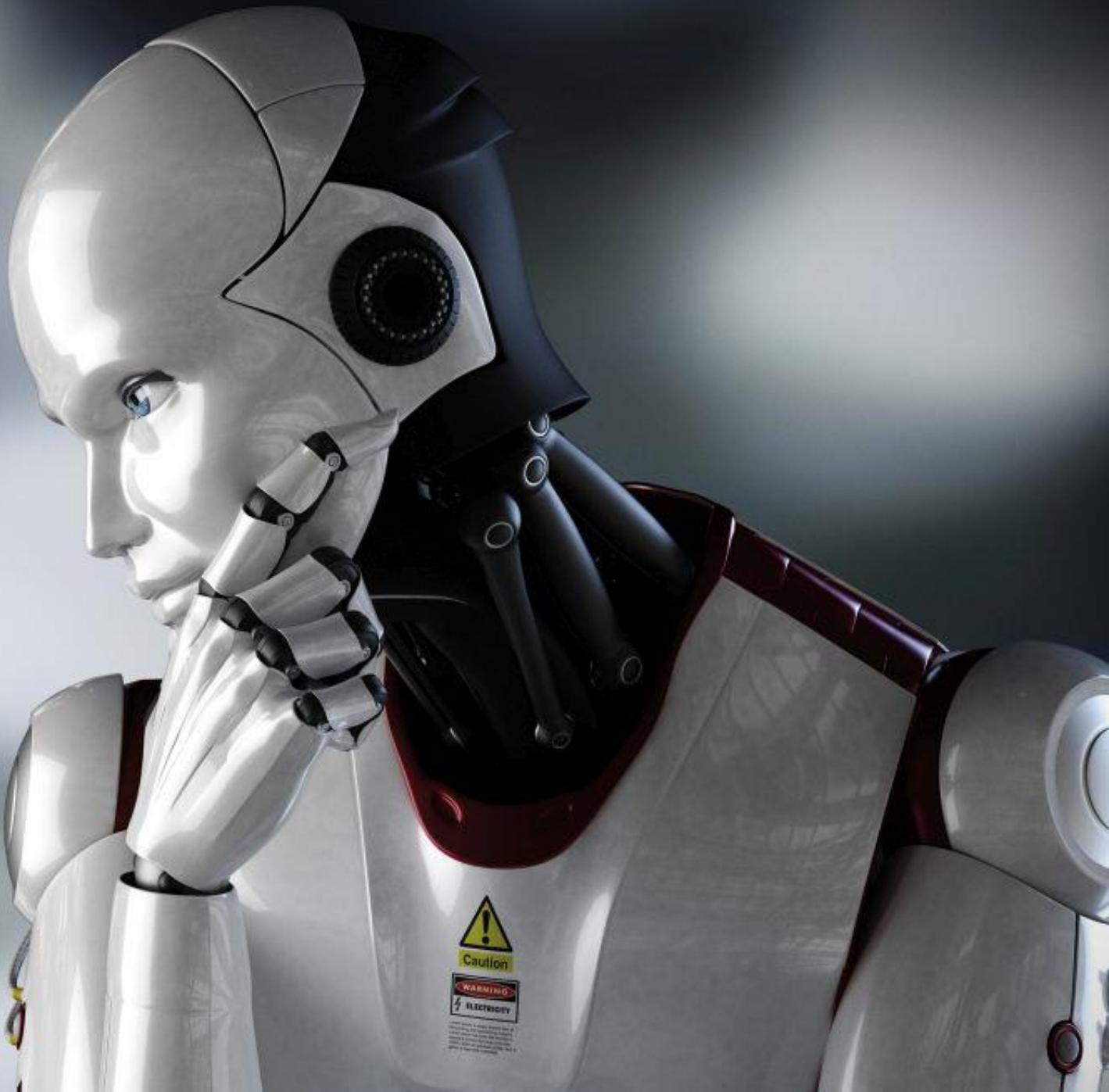


A man wearing a white protective suit and a respirator mask is shown from the waist up, working on a large industrial drum. He appears to be performing maintenance or cleaning. The background is a plain, light color.

Are you prepared?

Is your organization?

Is our world prepared?



Thank You!

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