

Amplify Human Talent With Smart Machines

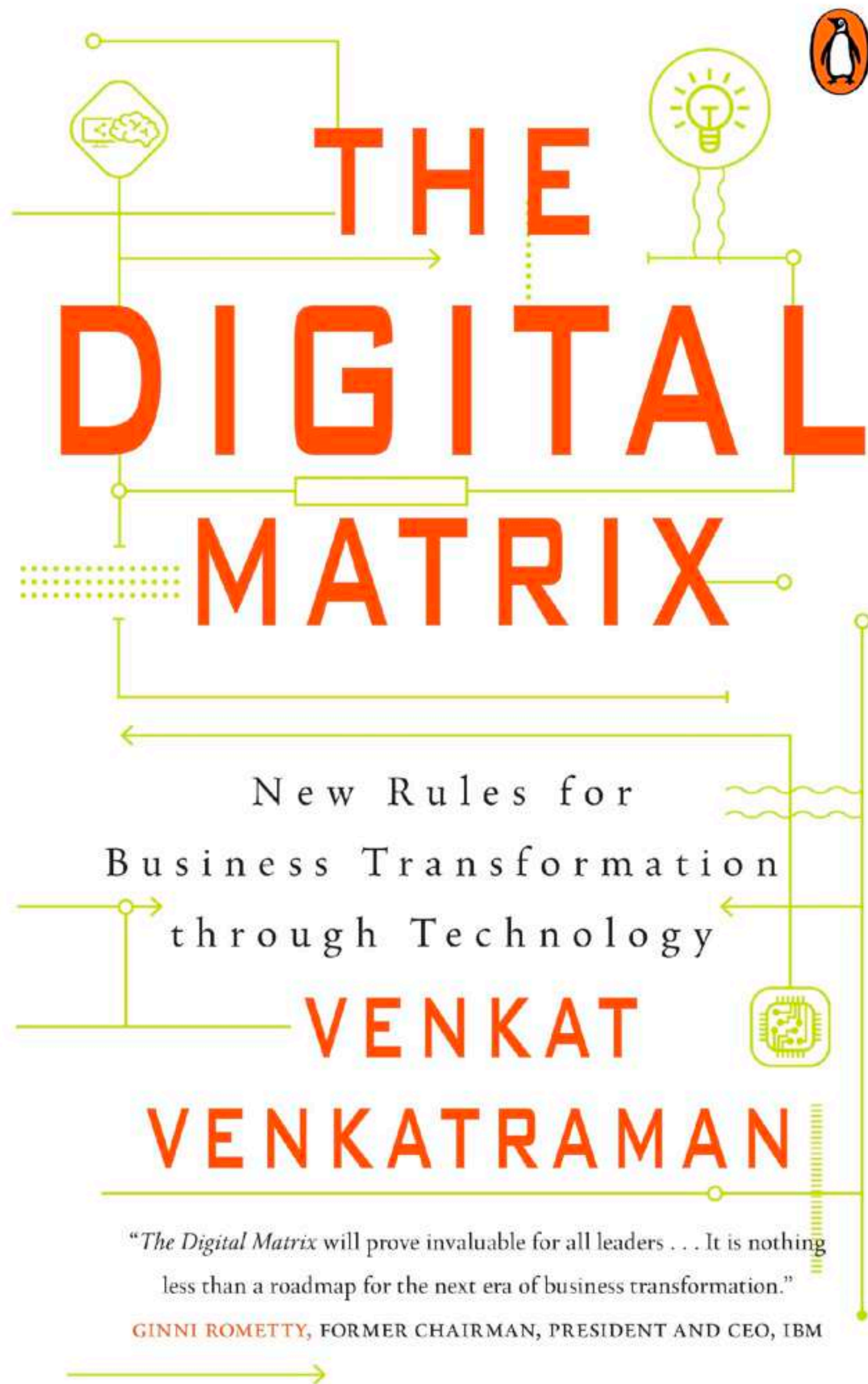
Professor N. Venkat Venkatraman
Boston University Questrom School of Business



@NVenkatraman



October 31, 2022



- Every industry is accelerating towards its digital future—scale, scope and speed differ.
- Every company will need to transform to effectively compete against born-digital companies.
- There's no profitable pathway to growth without digital as innovation catalyst.
- Digital transformation is a leadership (strategy & organization) challenge.



**Can incumbents
transform before
the digital giants
attack with their
scale and scope?**



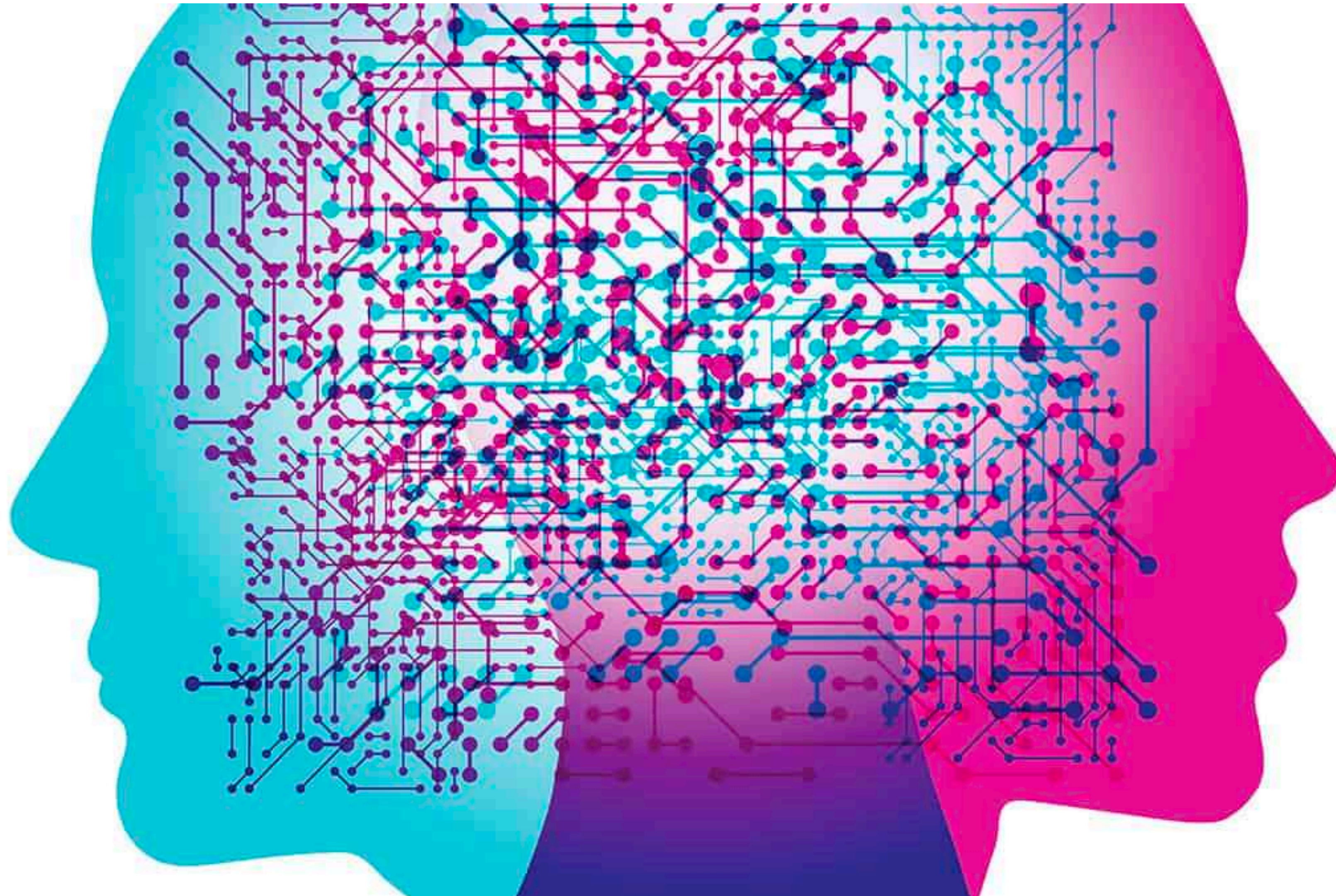
**Can incumbents
speed up before
the startups scale-
up?**



**Scale,
Scope and
Speed in
Digital Era
is Driven by
Amplified
Intelligence.**

Amplified Intelligence

Smart Humans • Powerful Machines





amazon echo



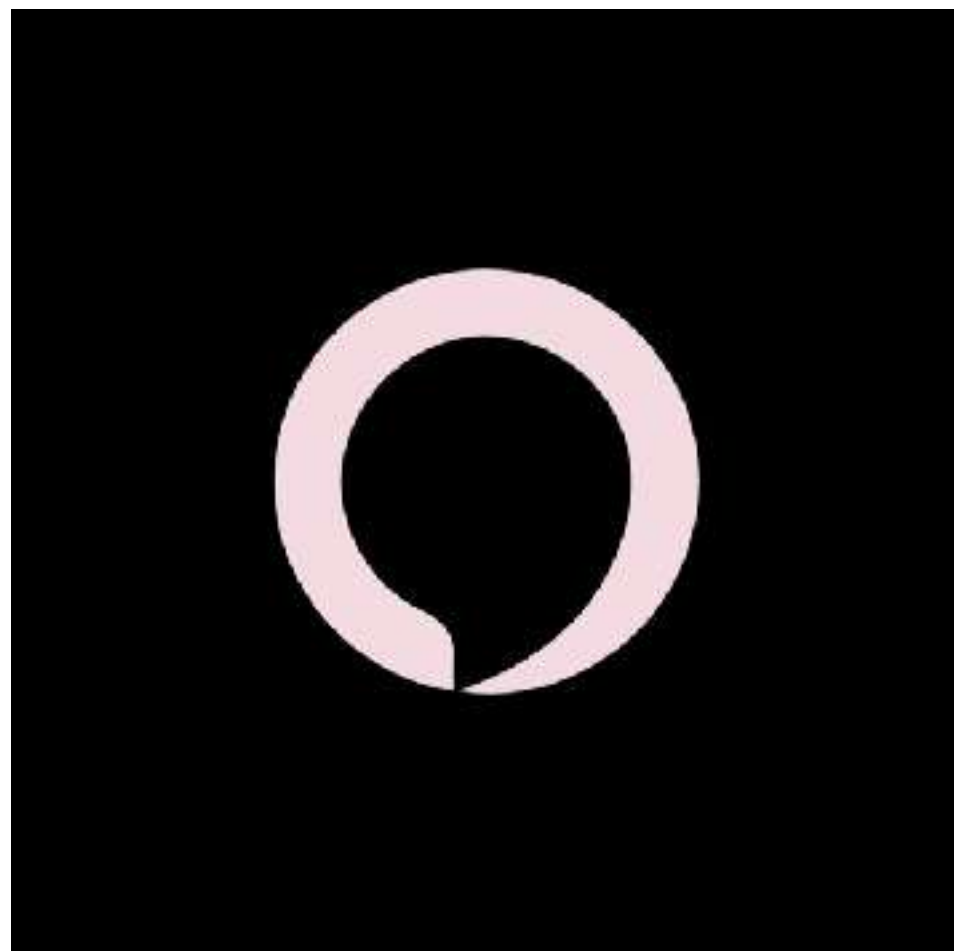
Apple HomePod

Where's AI?

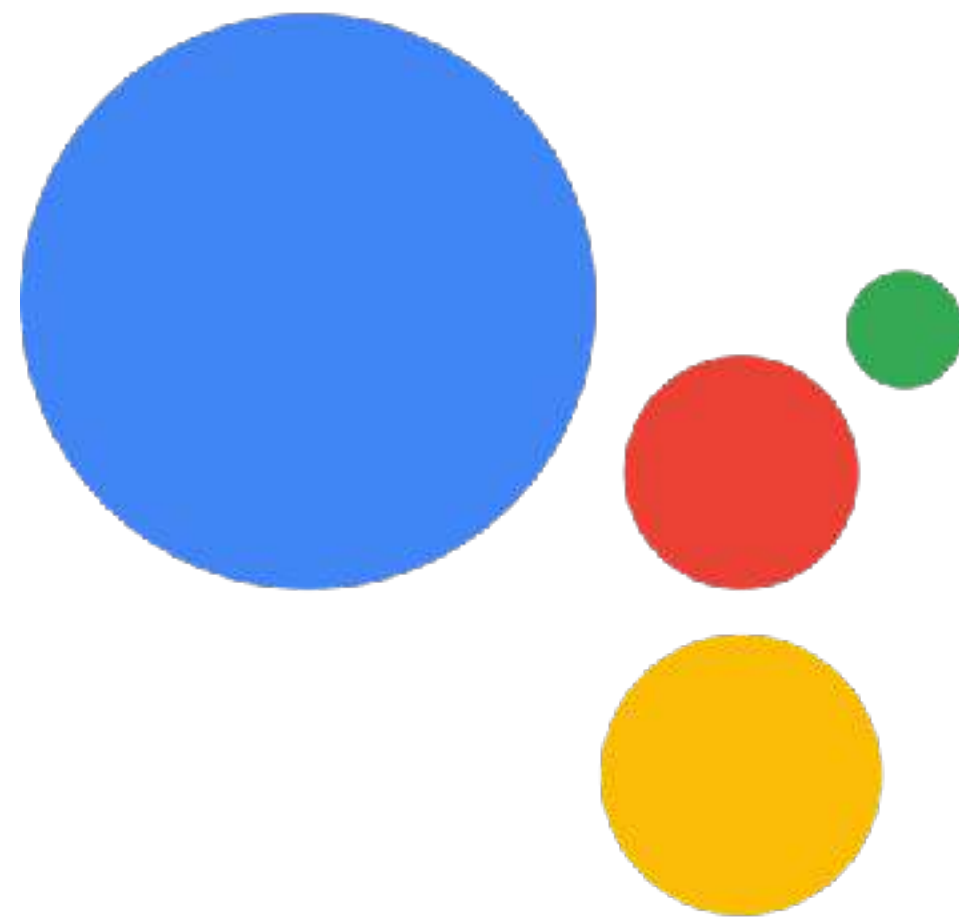



Nest Audio

Where's AI?



Alexa



Assistant



Bixby



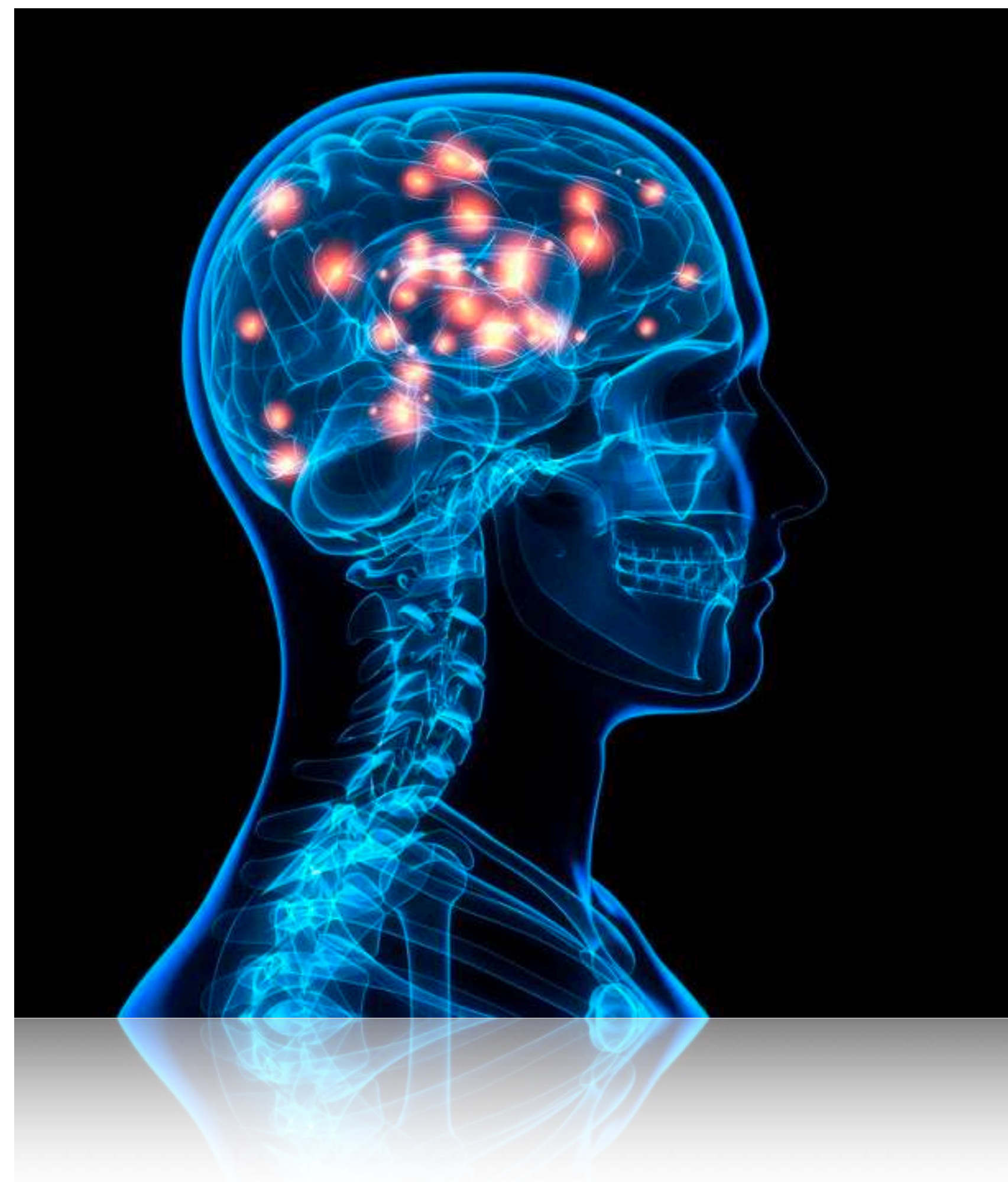
Cortana



Siri



Where's AI?



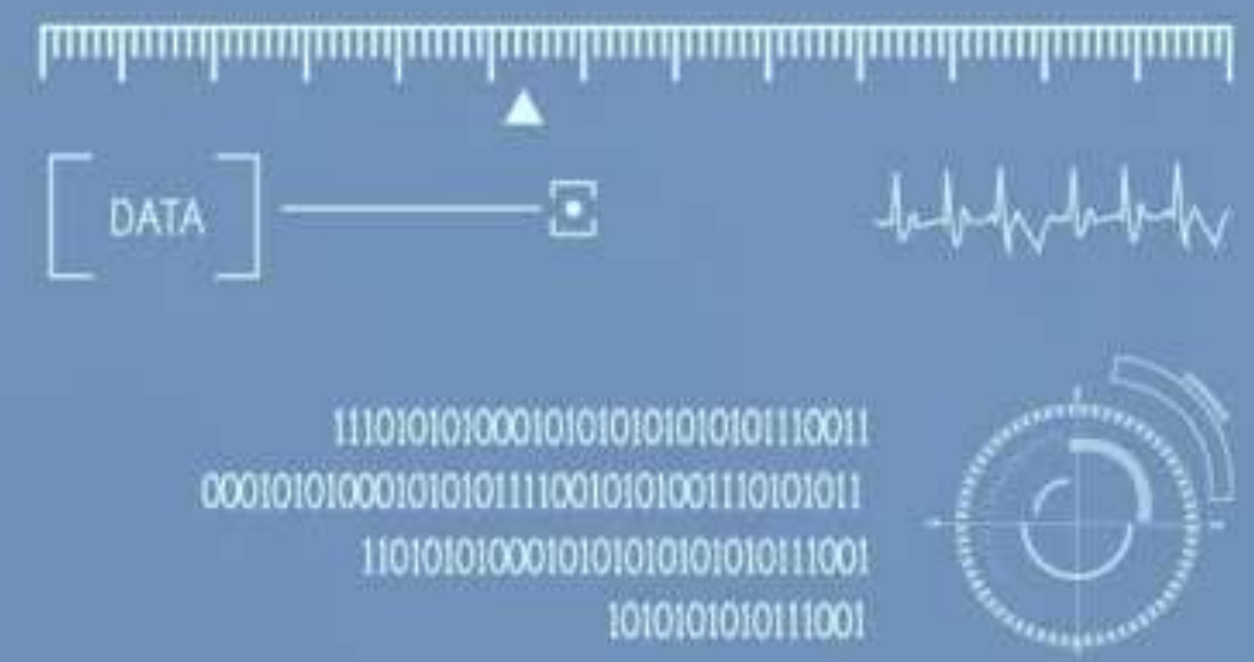
Where's AI?

Smart Vacuum Cleaner

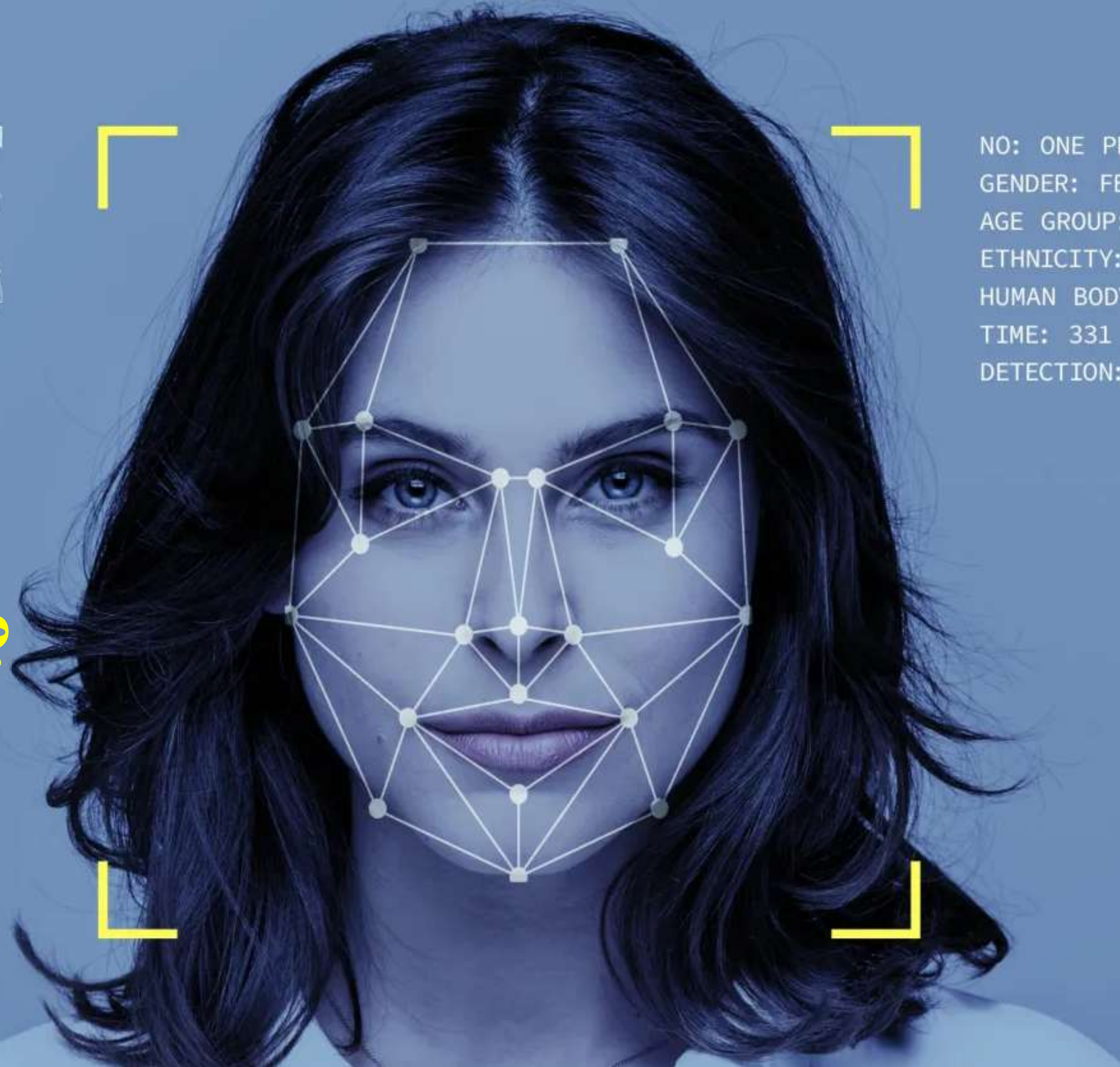


Where's AI?





NO: ONE PERSON
GENDER: FEMALE
AGE GROUP: YOUNG WOMEN
ETHNICITY: CAUCASIAN
HUMAN BODY PART: HUMAN FACE
TIME: 331 S
DETECTION: 25621 POINTS



Where's AI?



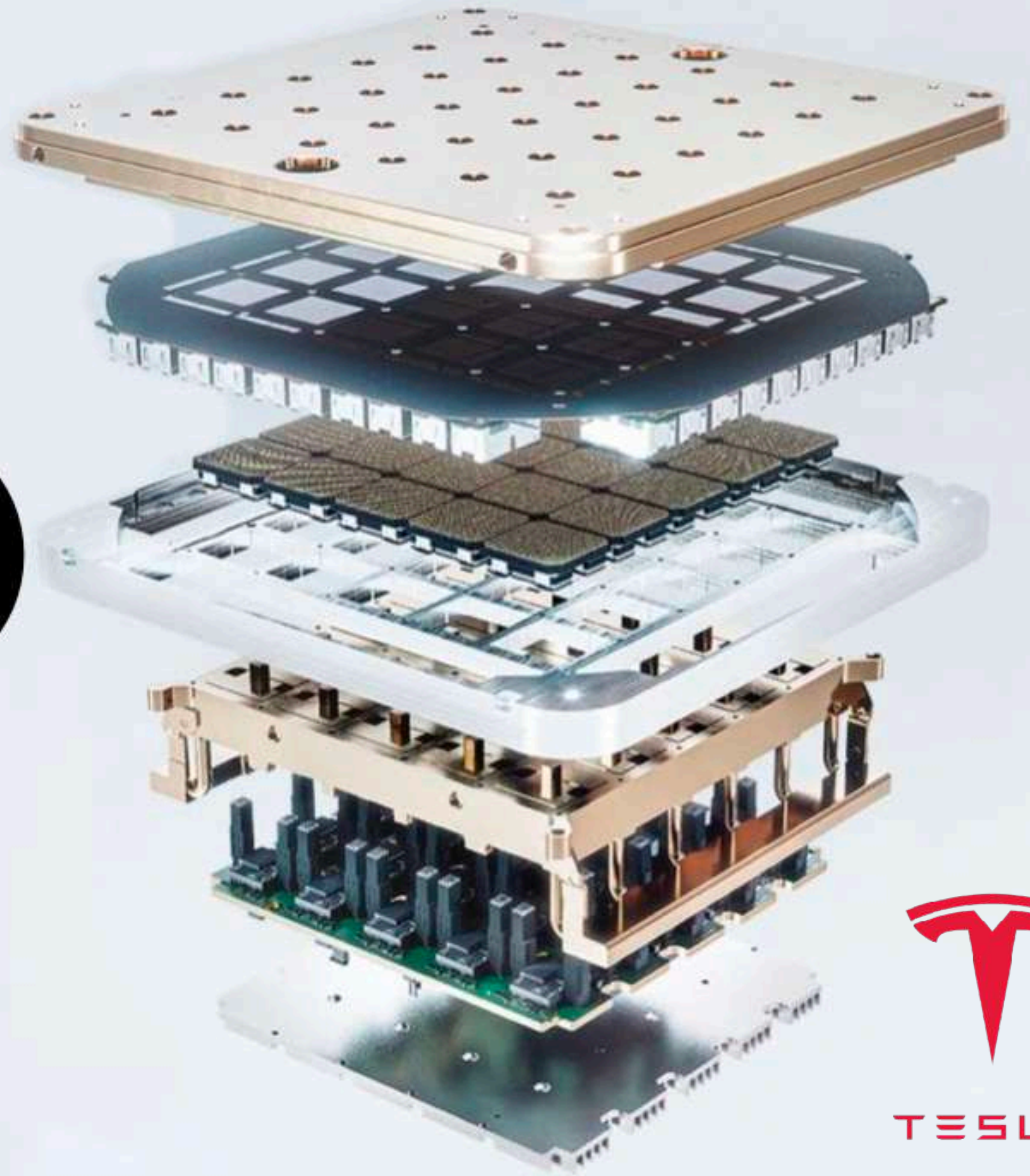
Where's AI?



Where's AI?



TESLA DOJO



TESLA



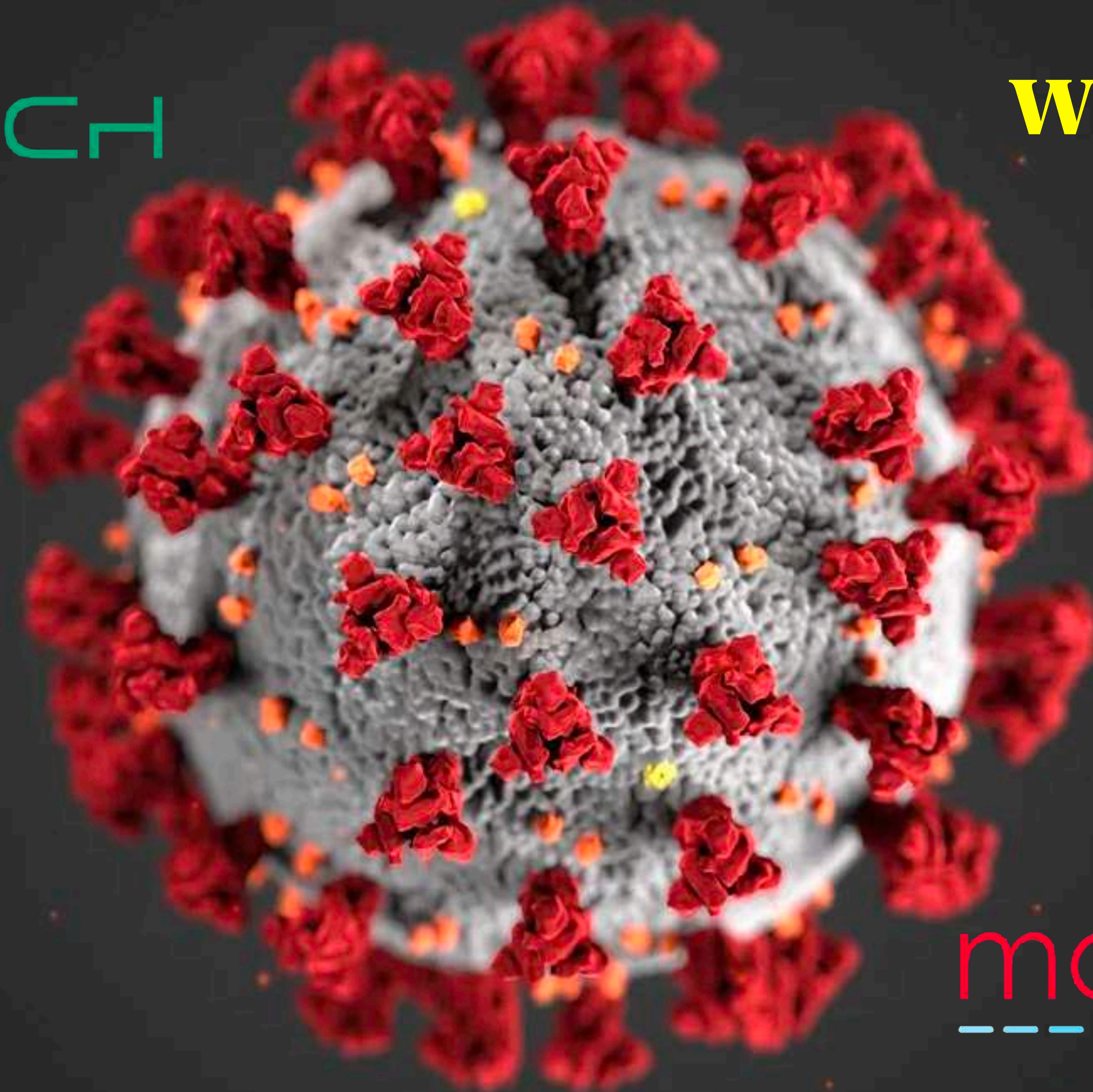
JOHN DEERE



Where's AI?

BIONTECH

Where's AI?



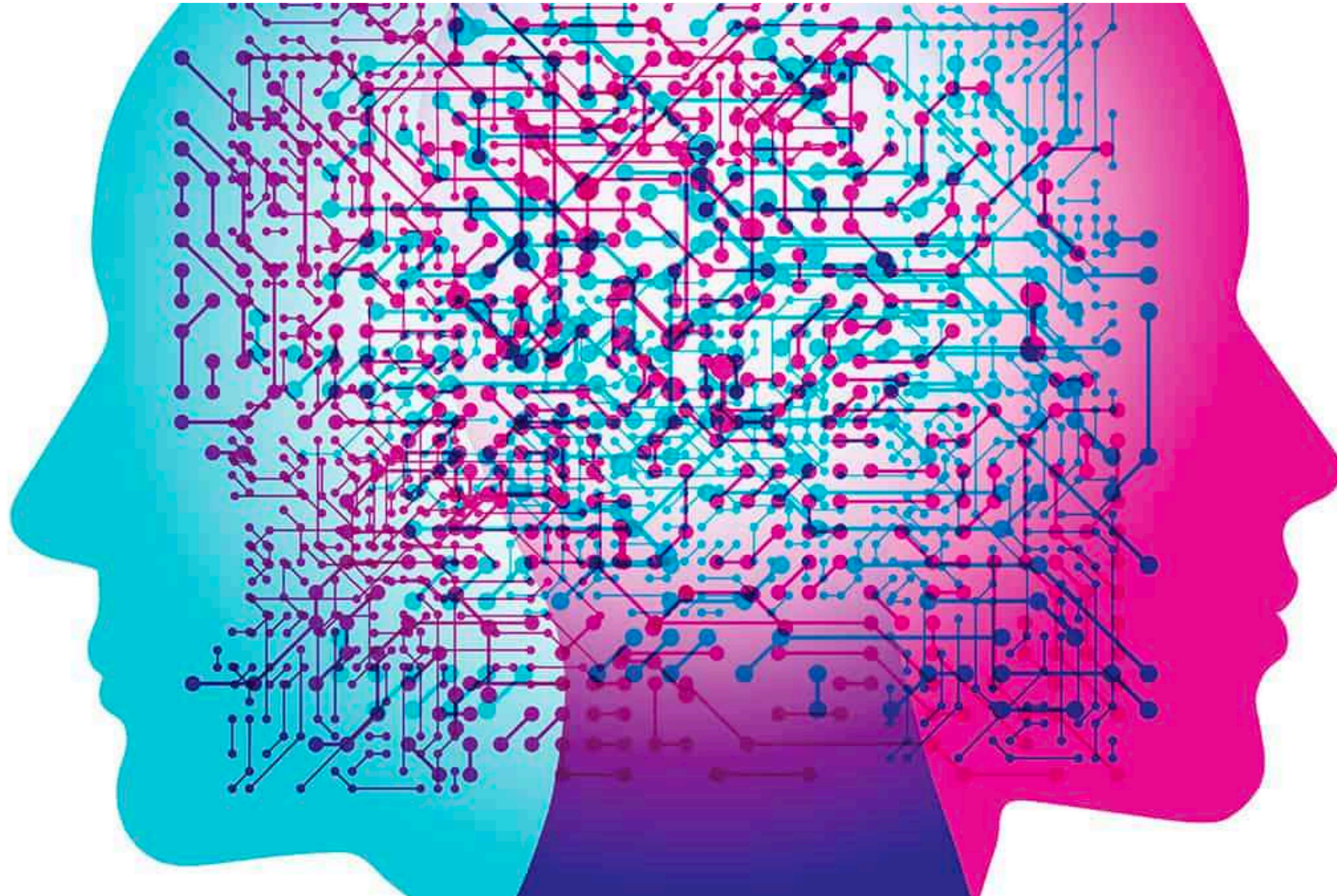
moderna®

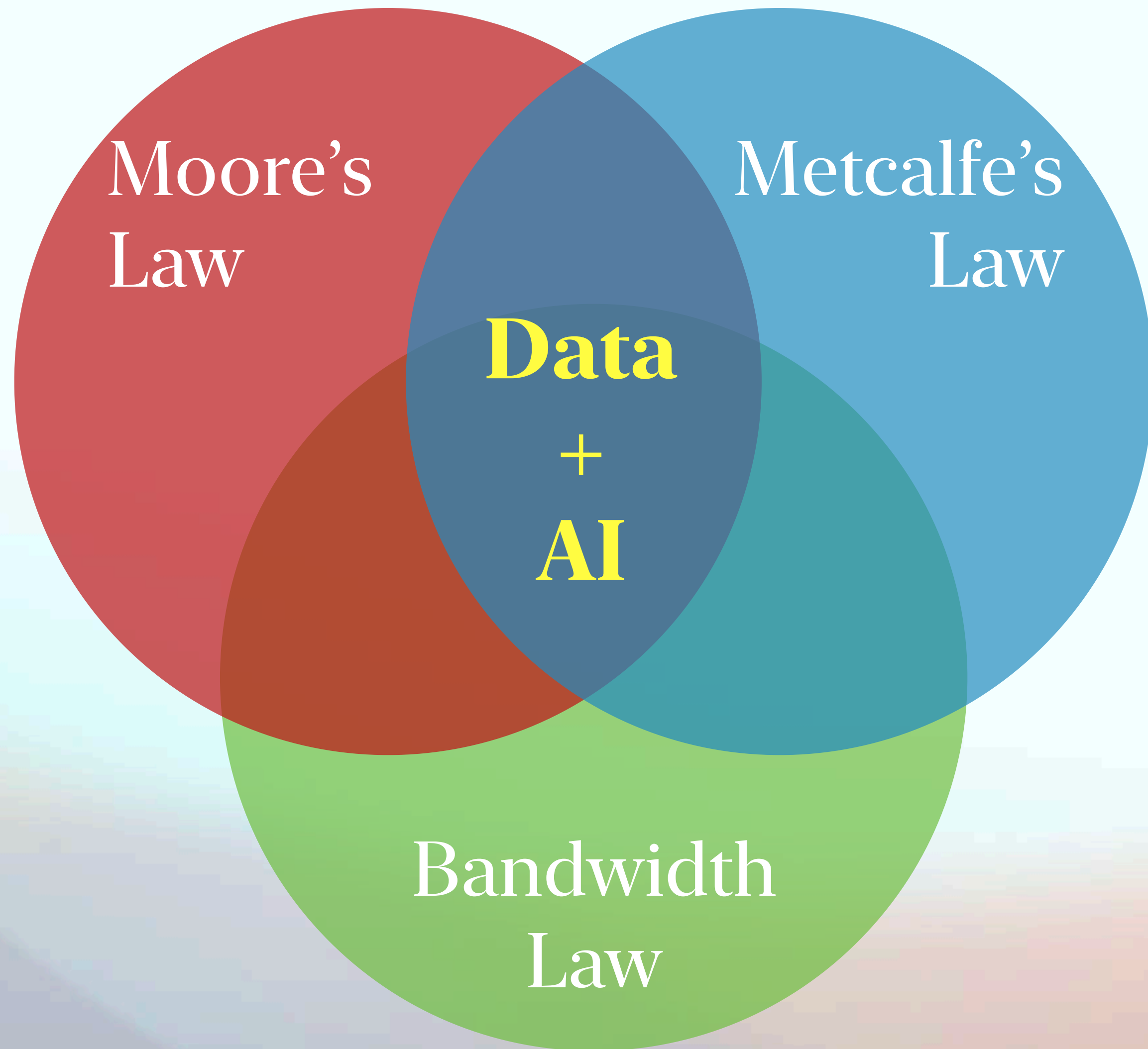
Where's AI?

Digital Twins | Metaverse | Mixed Reality

Amplified Intelligence

Smart Humans • Powerful Machines





- **Products**
- **Processes**
- **Services**
- **Business Models**
- **Organizing Logic**

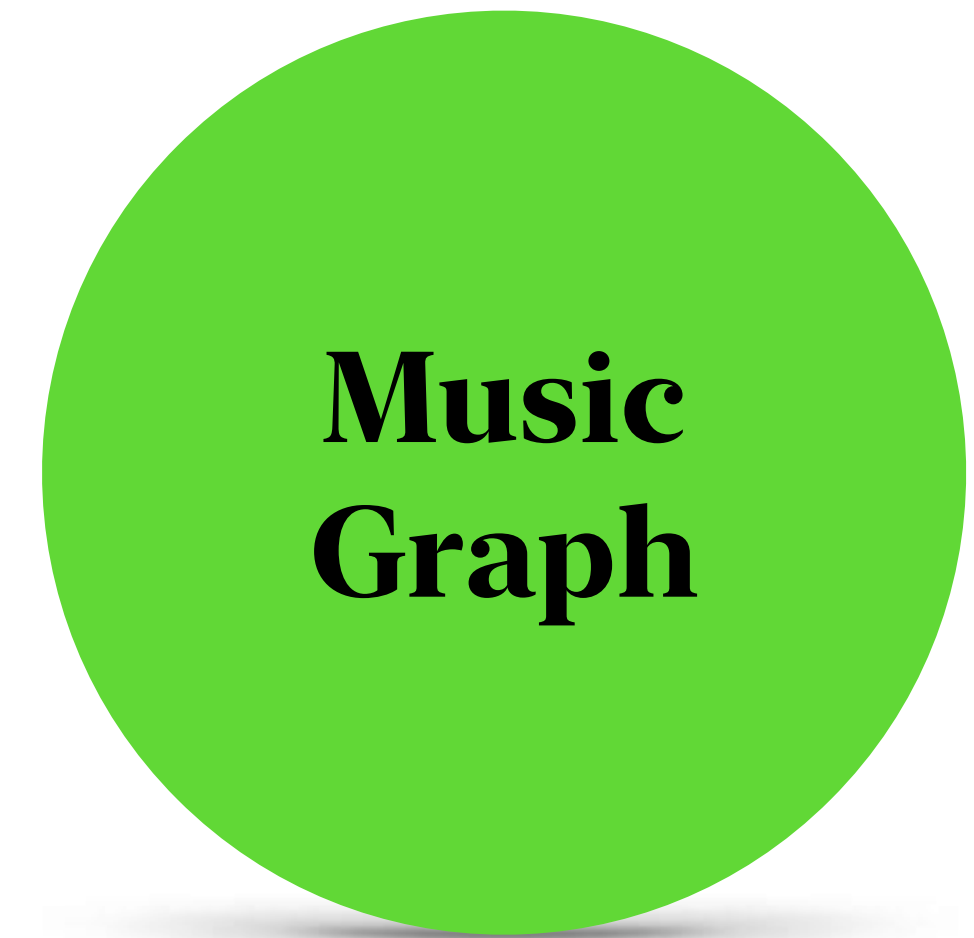
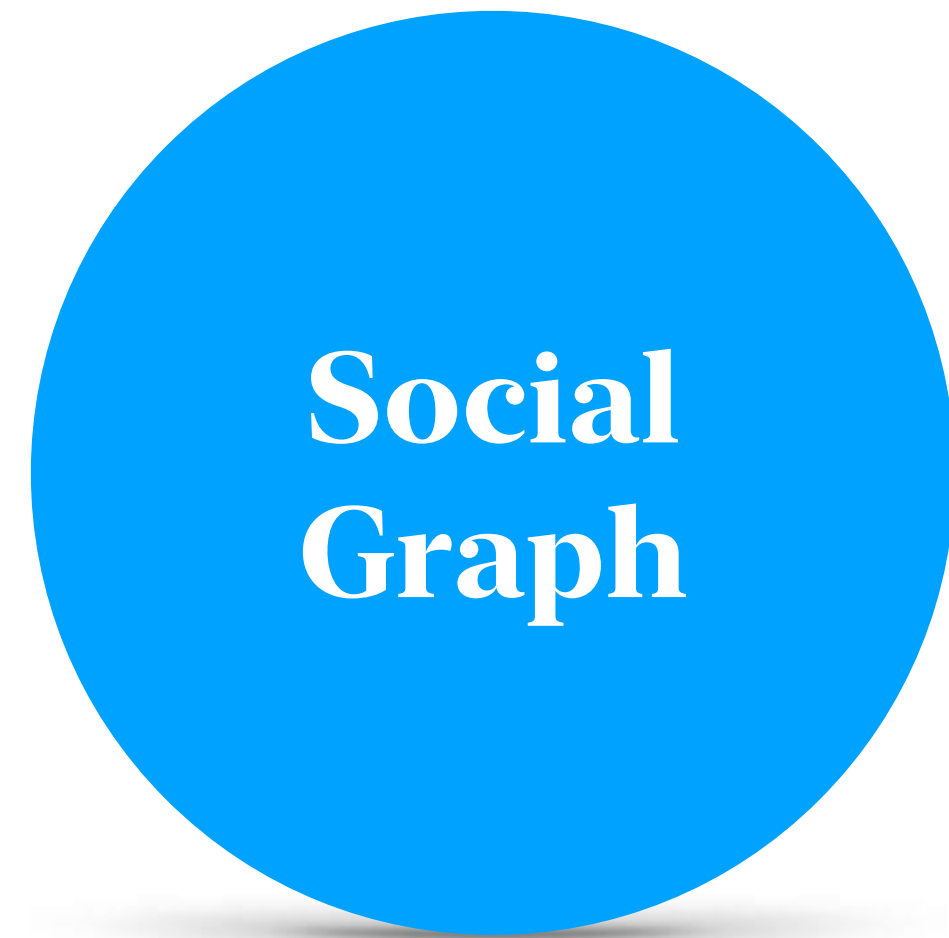
B2B



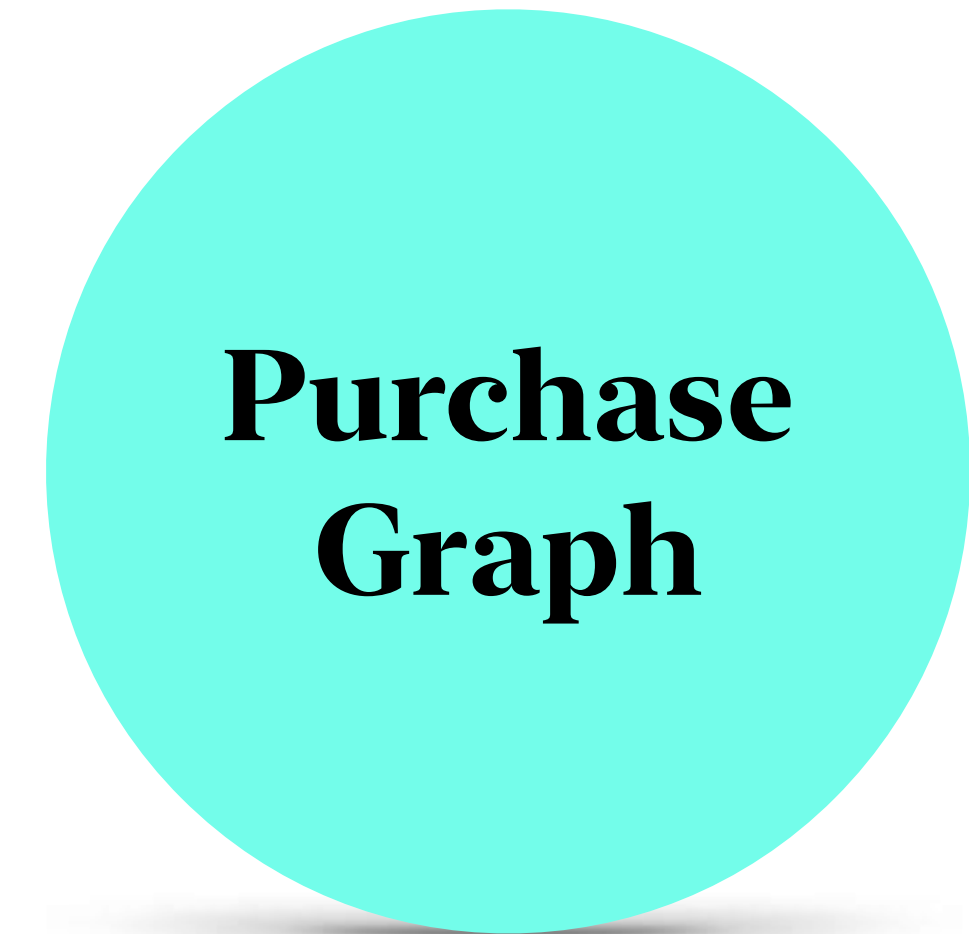
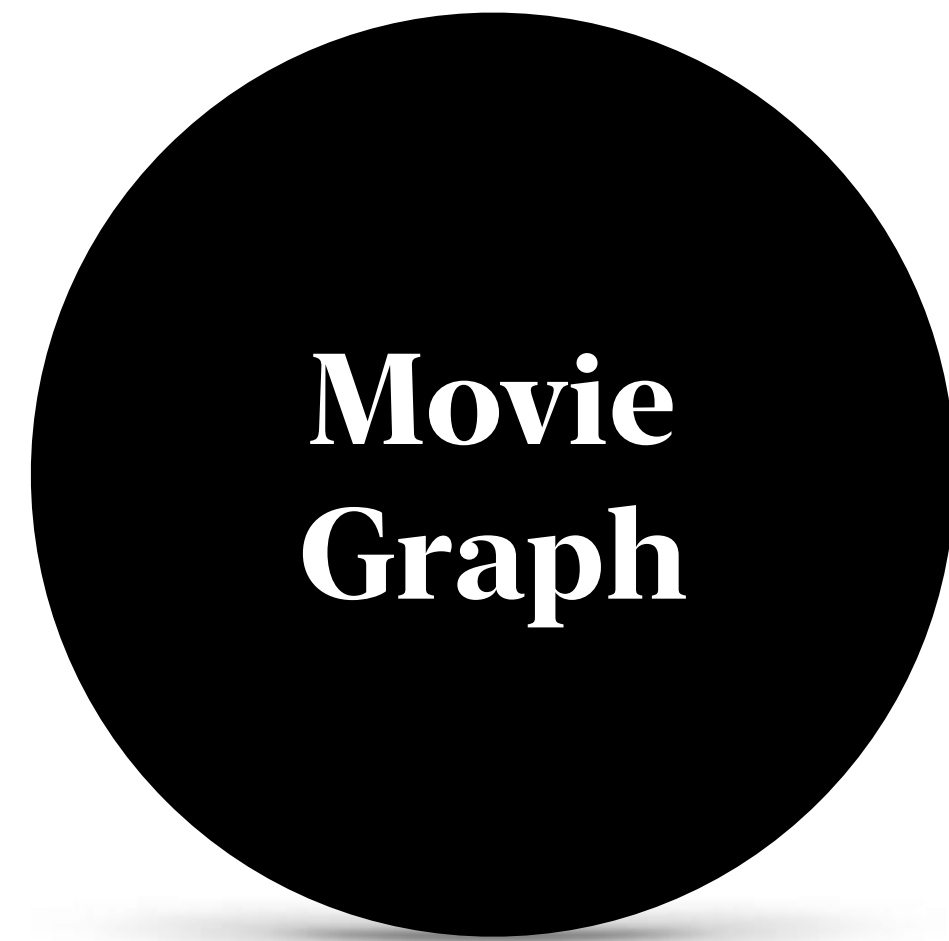
B2C

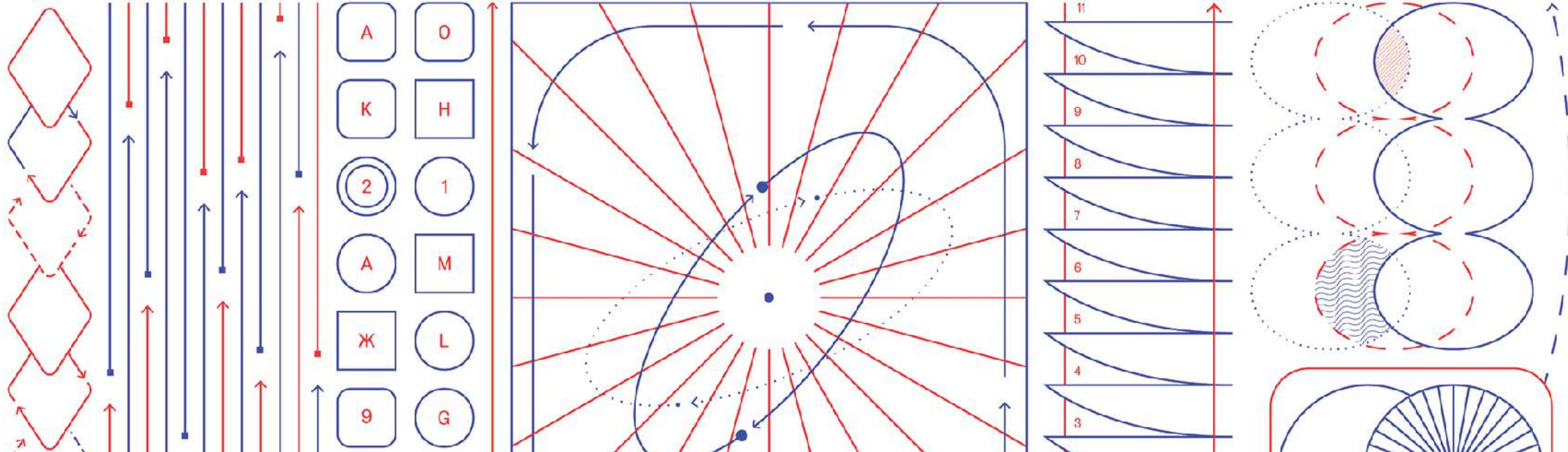
B2B2C

Datagraphs Emerge as New Driver of Competitive Advantage



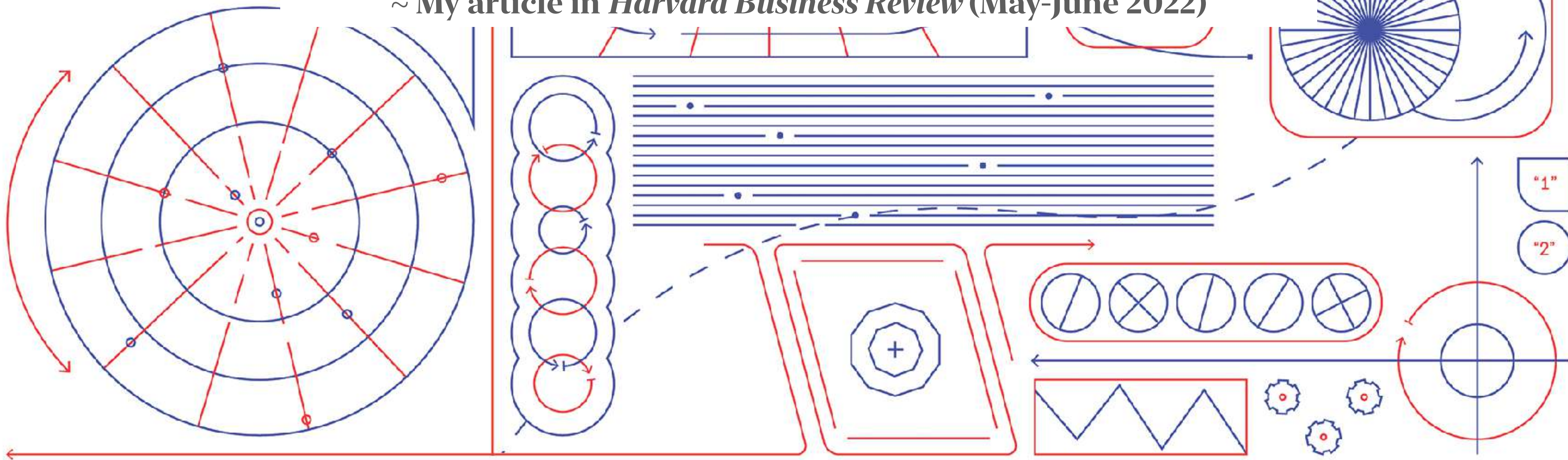
Datagraphs Emerge as New Driver of Competitive Advantage





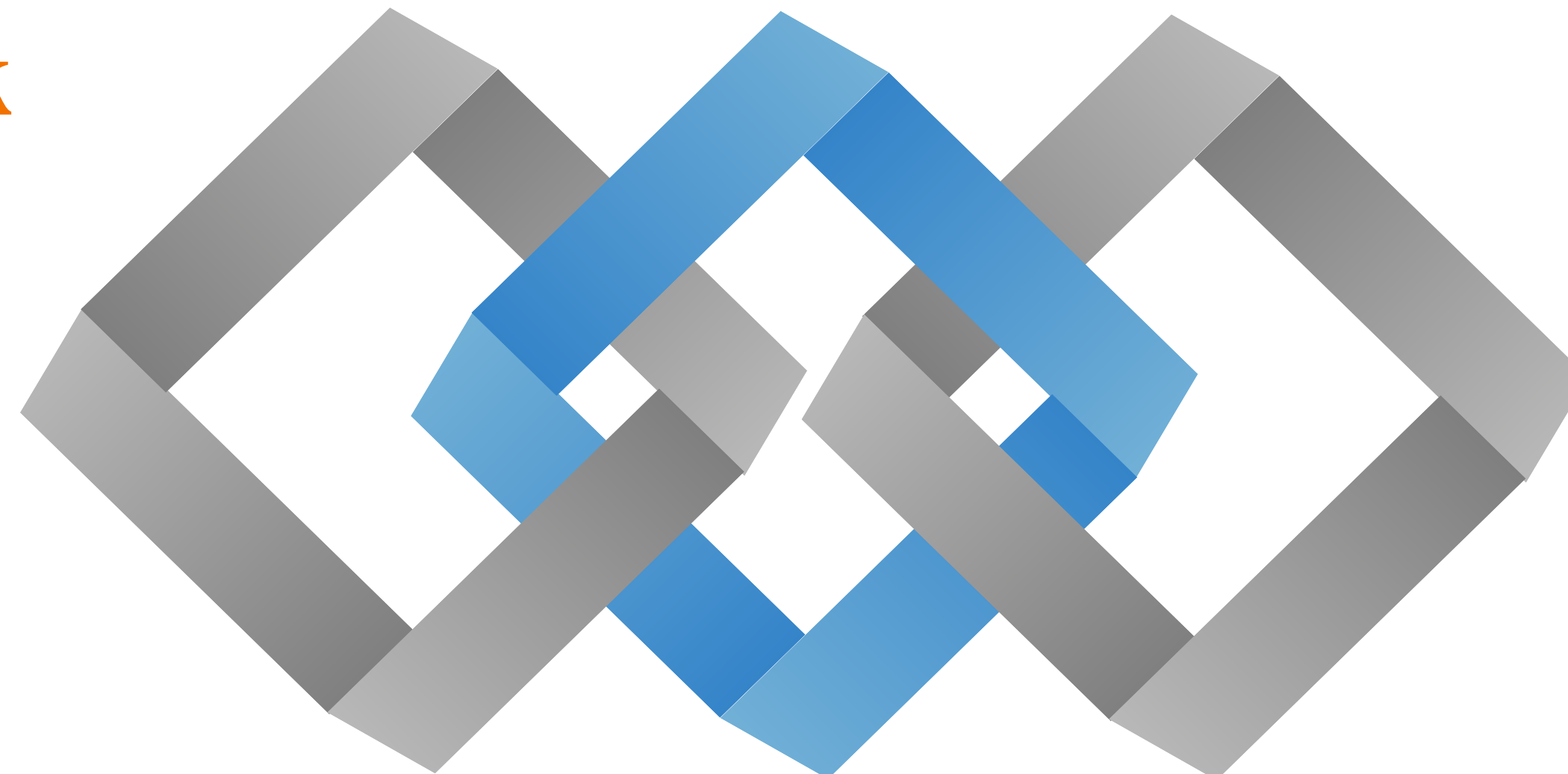
“Datagraphs as the next great digital advantage.”

~ My article in *Harvard Business Review* (May-June 2022)



Direct Network Effects

“Value increases with the
number of users”



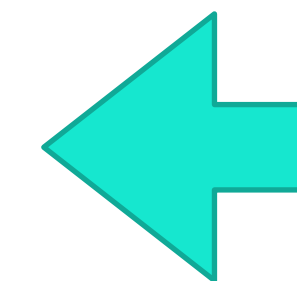
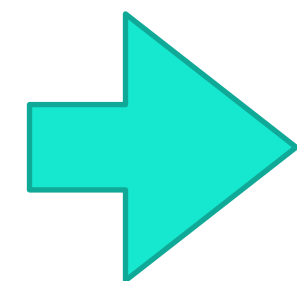
Indirect Network Effects

“Value increases with the
number of complements”

Data Network Effects

“Value increases with data on
product use over time”

{AI}



{AI}

**Industry
Incumbents**

**Competitive
Advantage
from
Mastering
AI**

**Digital
Innovators**

**How did we get
here?**

**Lessons From
Games that
Machines Play**

A man in a dark suit and tie is sitting at a chessboard, looking extremely stressed. He has his hands pressed against his temples, and his expression is one of intense concentration and frustration. The chessboard is in the foreground, with several pieces visible, including a king and a queen. The background is dark and out of focus, with some chess pieces visible on a shelf. The lighting is dramatic, highlighting the man's face and the chess pieces.

Man versus Machine — 1996

A man in a dark suit and tie is seated at a table, looking intently at a chessboard. His hands are clasped together in front of his face, suggesting deep concentration or stress. To his right is a large, beige computer monitor displaying a blue screen. In the background, several people are visible, some appearing to be spectators or photographers. The scene is dimly lit, with a focus on the man and the chessboard.

Man versus Machine — 1997



May 11, 1997



I make it clear.. that my loss to Deep Blue was also a victory for humans — its creators and everyone who benefits from our technological leaps. This is always the case in the big picture, and why [I] reject the ‘man vs machine’ competition storyline. The machines work for us, after all. The last third of the book is about the bright future of our lives with intelligent machines, if we are ambitious enough to embrace it. I hope my optimism is contagious.”

Feb 16, 2011



PIENSE

ΣΙΝΑΟΜΙΣ

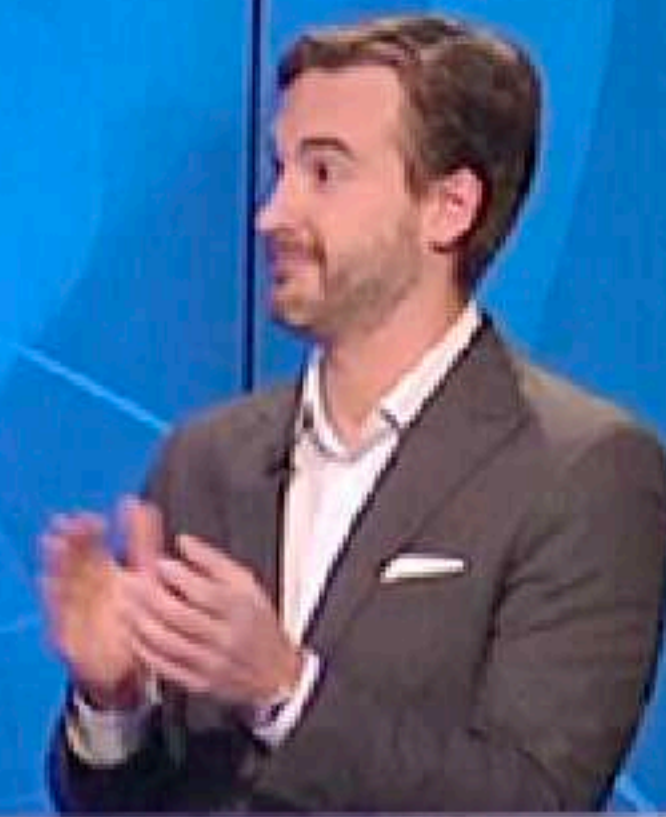
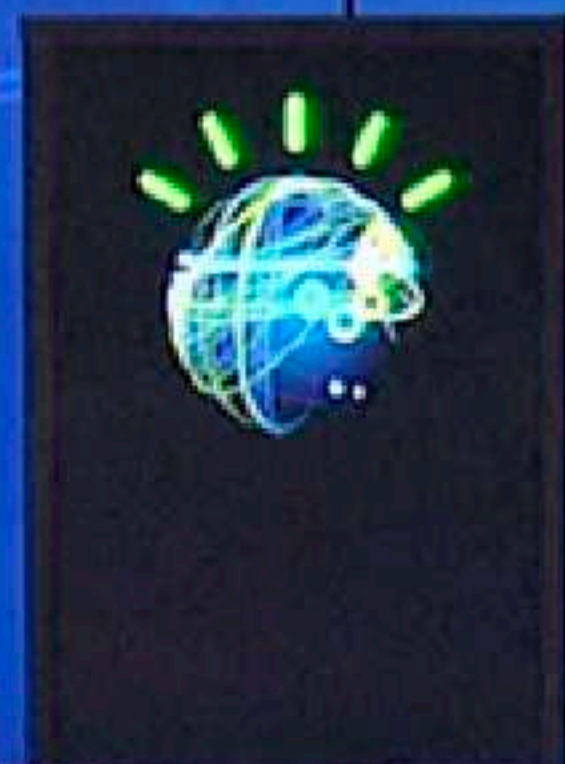
THINK

सोचिए

ΣΚΕΨΟΥ

DENKE

PENSER



\$300,000

Who is Stoker?
(FOR ONE WELCOME OUR
NEW COMPUTER OVERLORDS)

\$1,000

\$1,000,000

Who is Bram
Stoker?

\$17,973

\$200,000

WHO IS
BRAM STOKER?

\$5600

8 - 15 March 2016

March 2016



	AlphaGo	Lee Sedol
		



AlphaGo wins 4-1

**“Last year, it was quite humanlike...
this year it became like a God of GO”
~Ke Jie**

May 2017



AlphaGo Zero

Starting from scratch



December 6, 2017



28-0-72

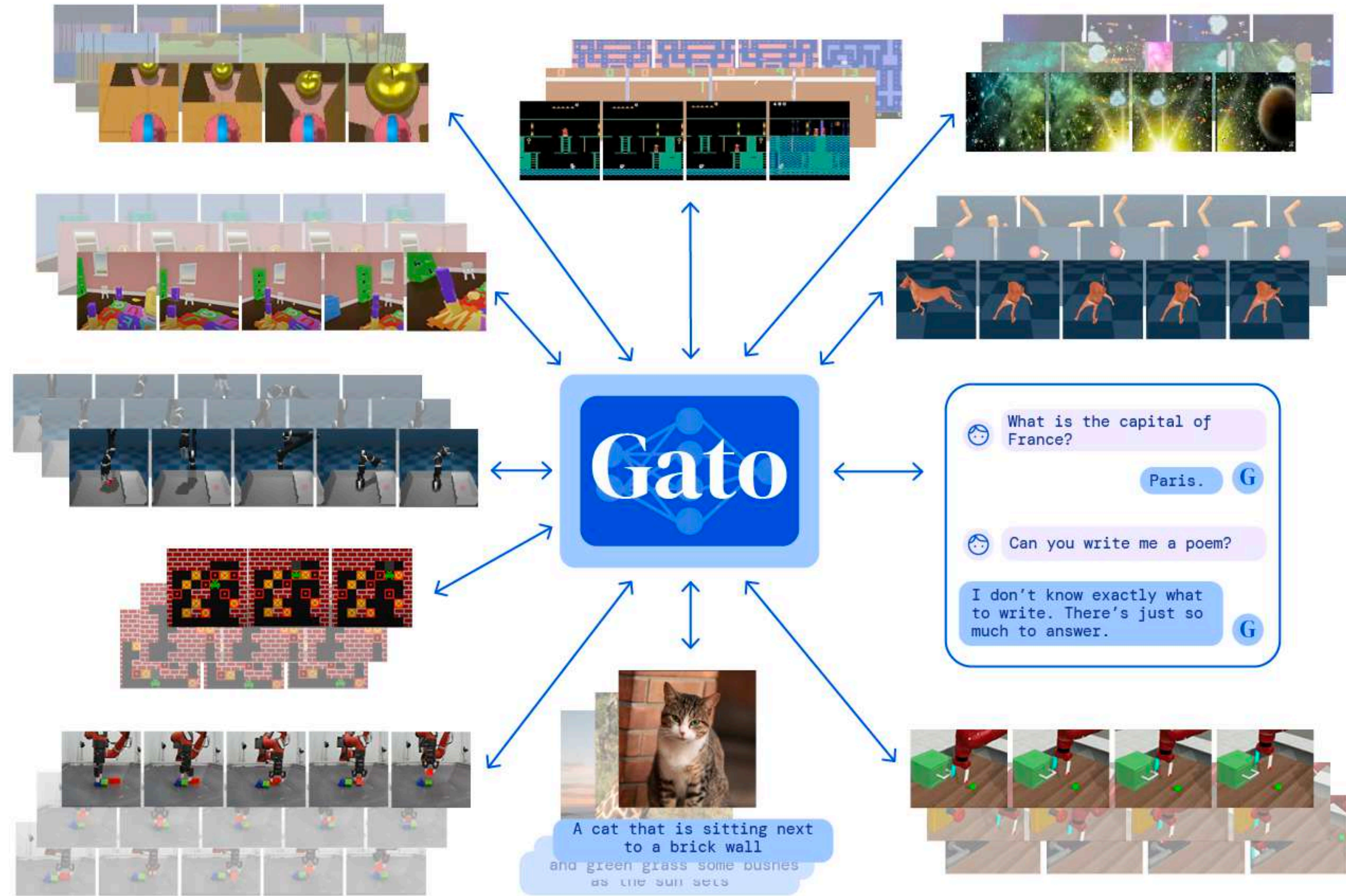
Alpha Zero

Alpha Zero vs Stockfish

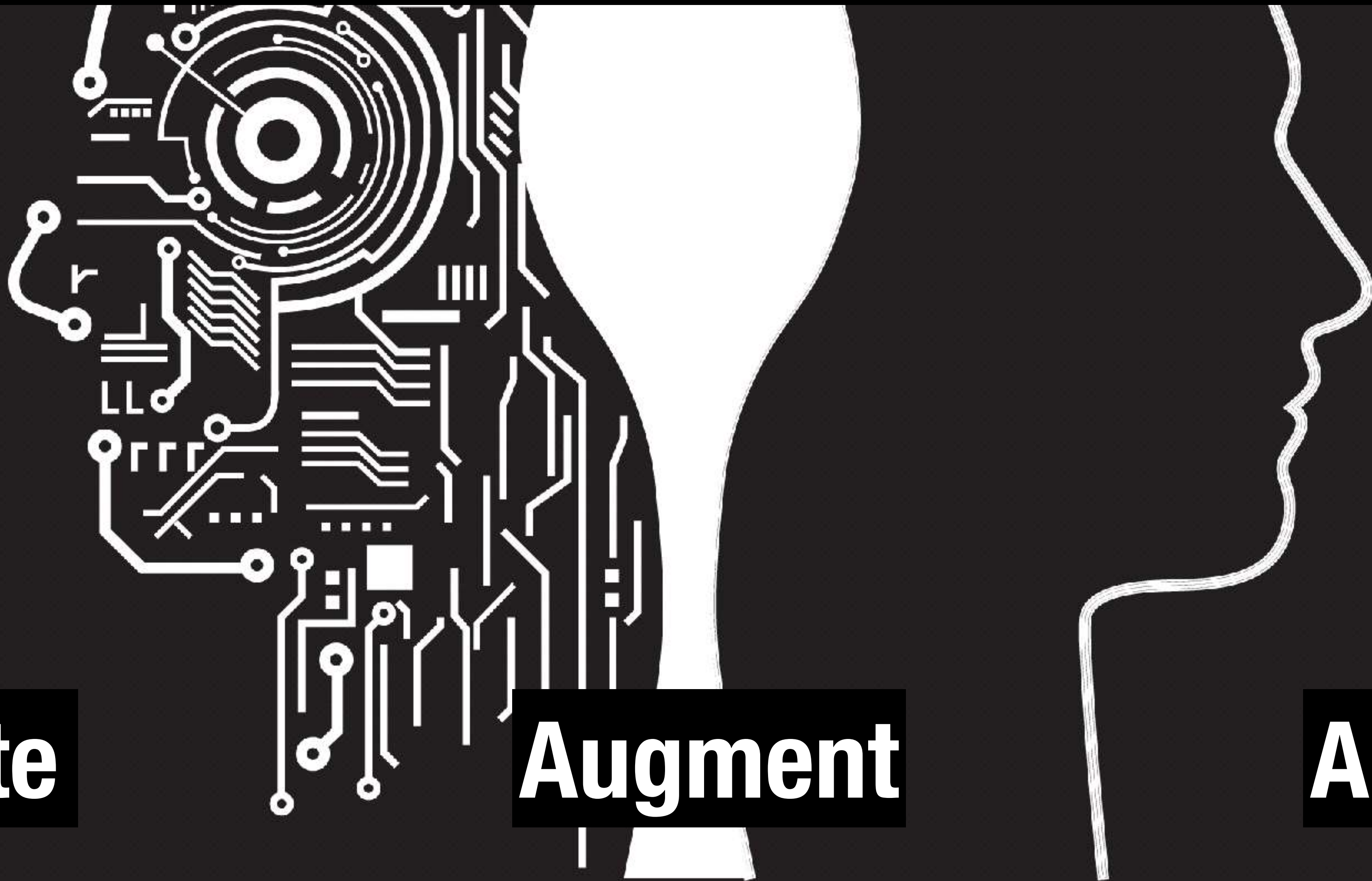


DeepMind in Healthcare

Google's DeepMind



Humans + Machines



Automate

Augment

Amplify

**Where do we go
from here?**

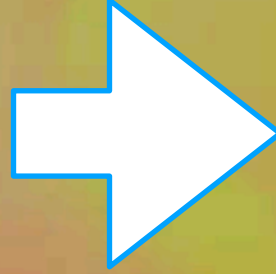
“Skills that are **easy for humans are hard for computers... and vice versa**”

TRUE?

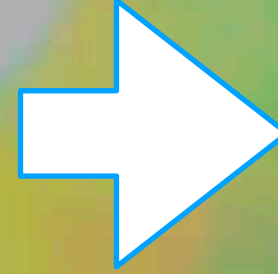
“**reasoning** requires very little computation, but sensorimotor and **perception** skills require enormous computational resources.”

TRUE?

Experimentation



Collision



Reinvention



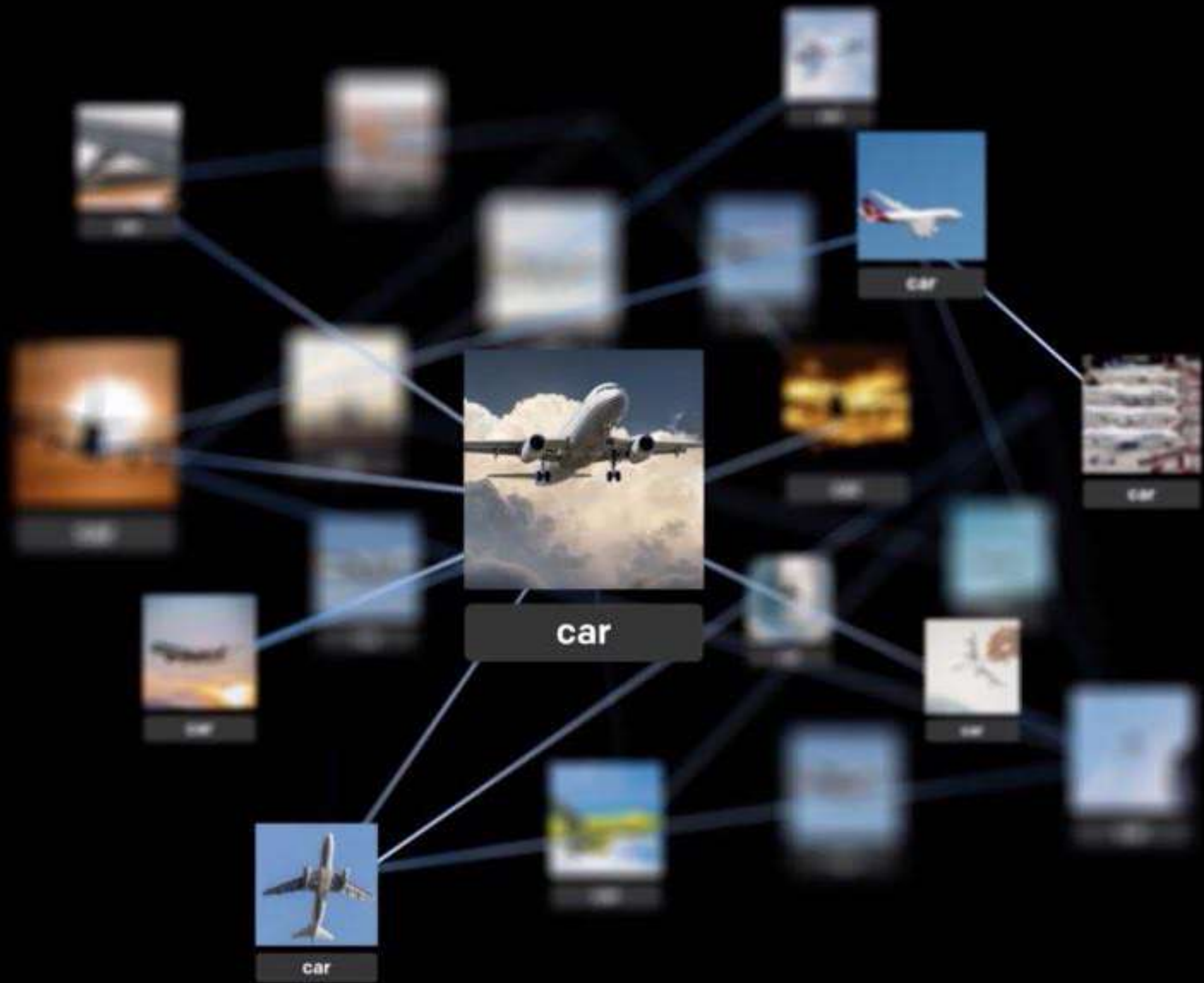
OpenAI





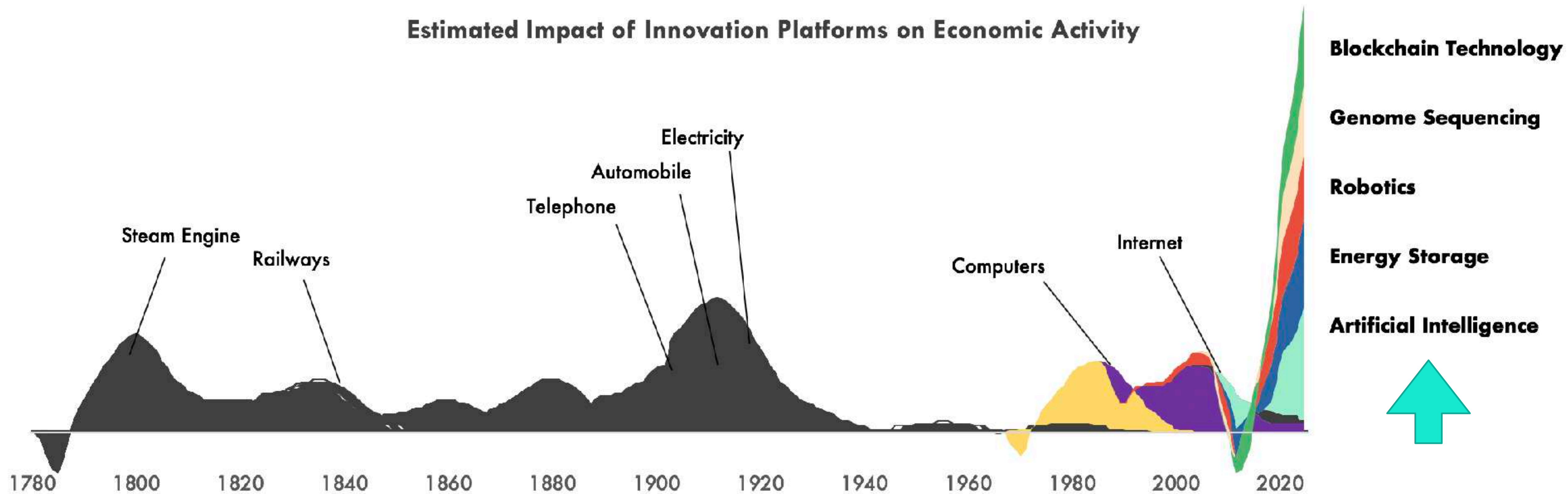
DALL·E 2

DALL·E 2 is a new AI system that can create realistic images and art from a description in natural language.



Transformation Frontiers...

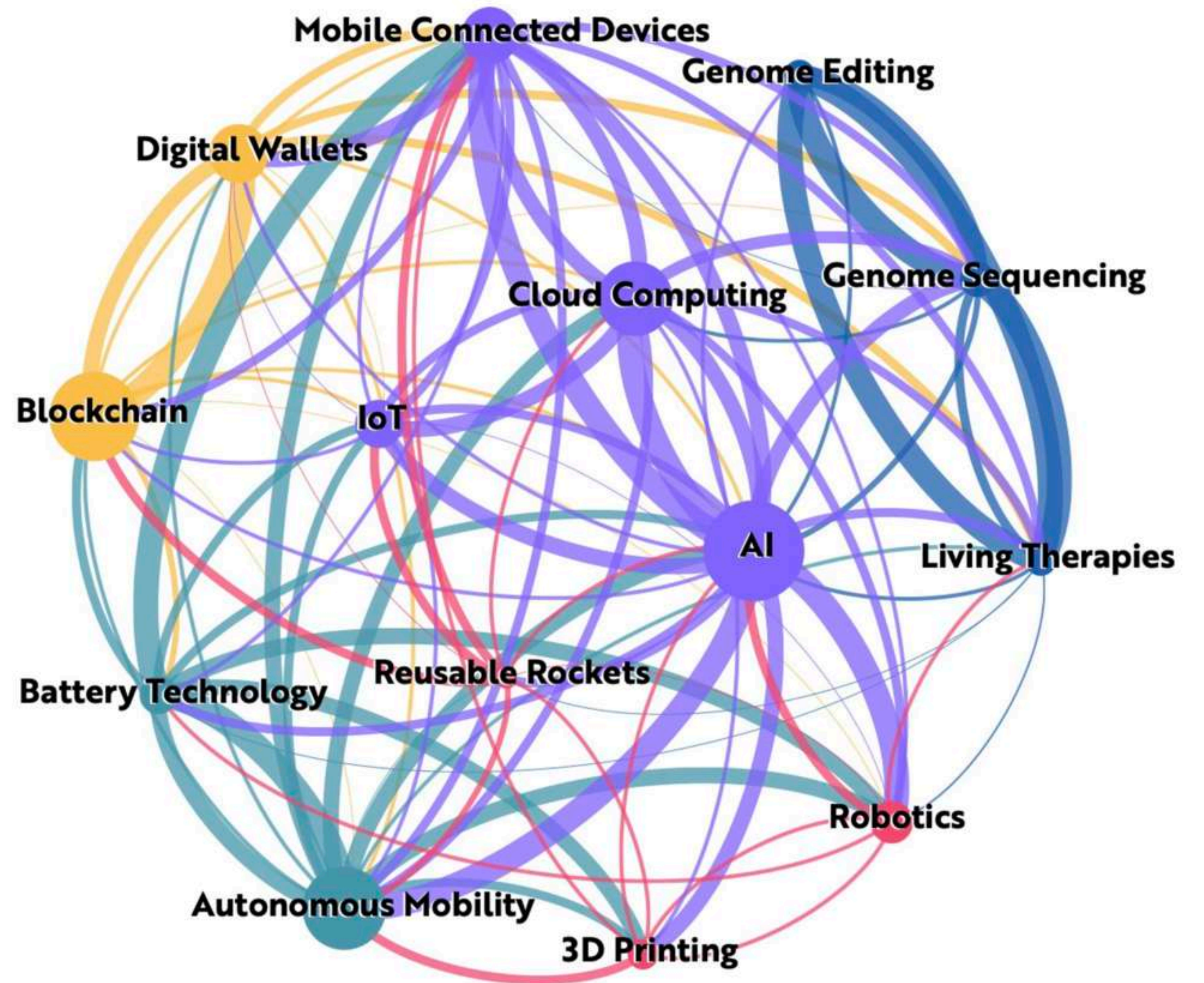
Estimated Impact of Innovation Platforms on Economic Activity

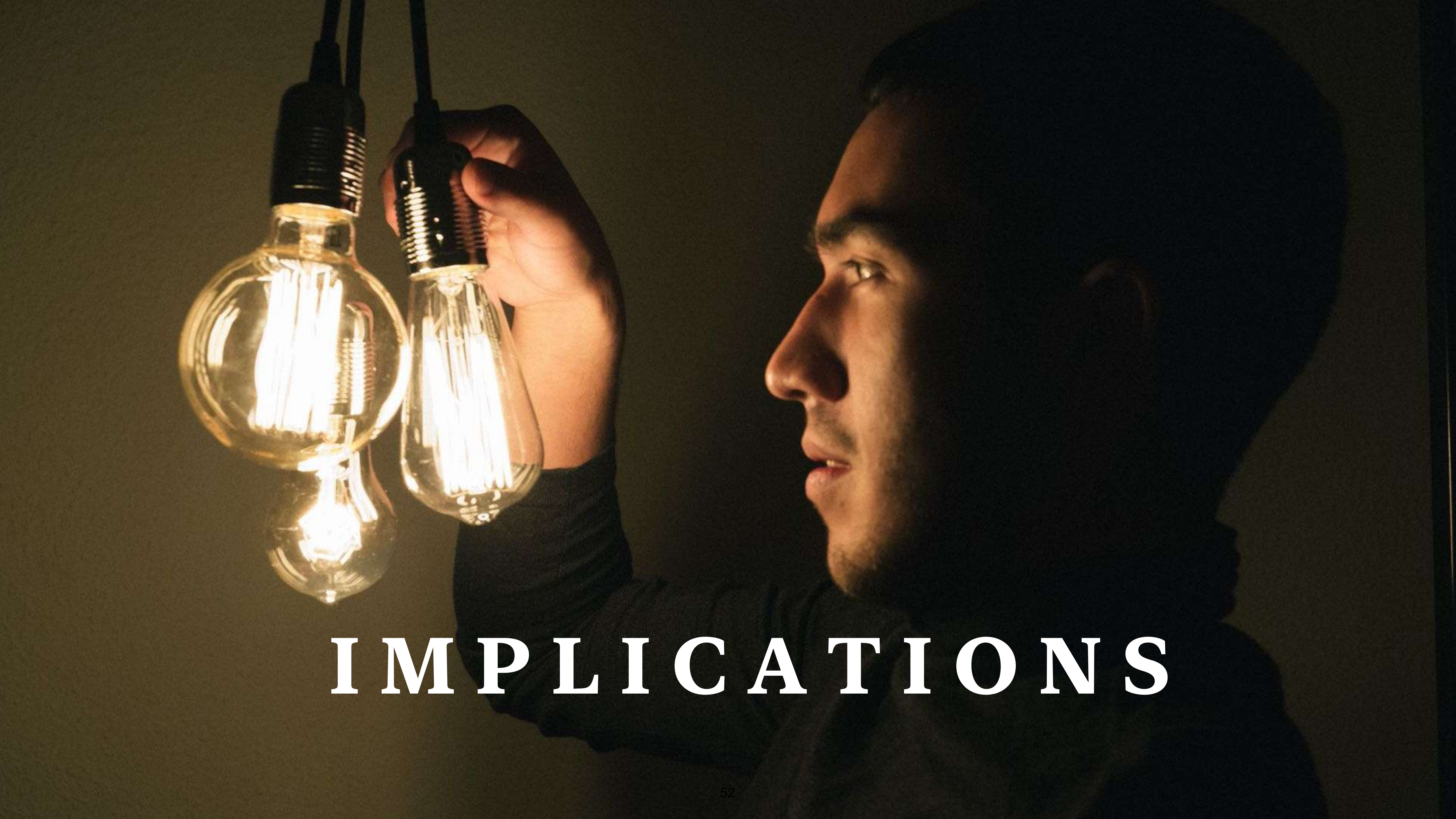


Source: ARK Investment Management LLC, 2018 | Forecasts are inherently limited and cannot be relied upon.

What's the likely view from 2030 looking back?

**Amplified
Intelligence is
the connective
thread across
multiple
converging
technologies.**





IMPLICATIONS

We are at the Third Inflection Point in Digital Transformation

**Web-
Centric**

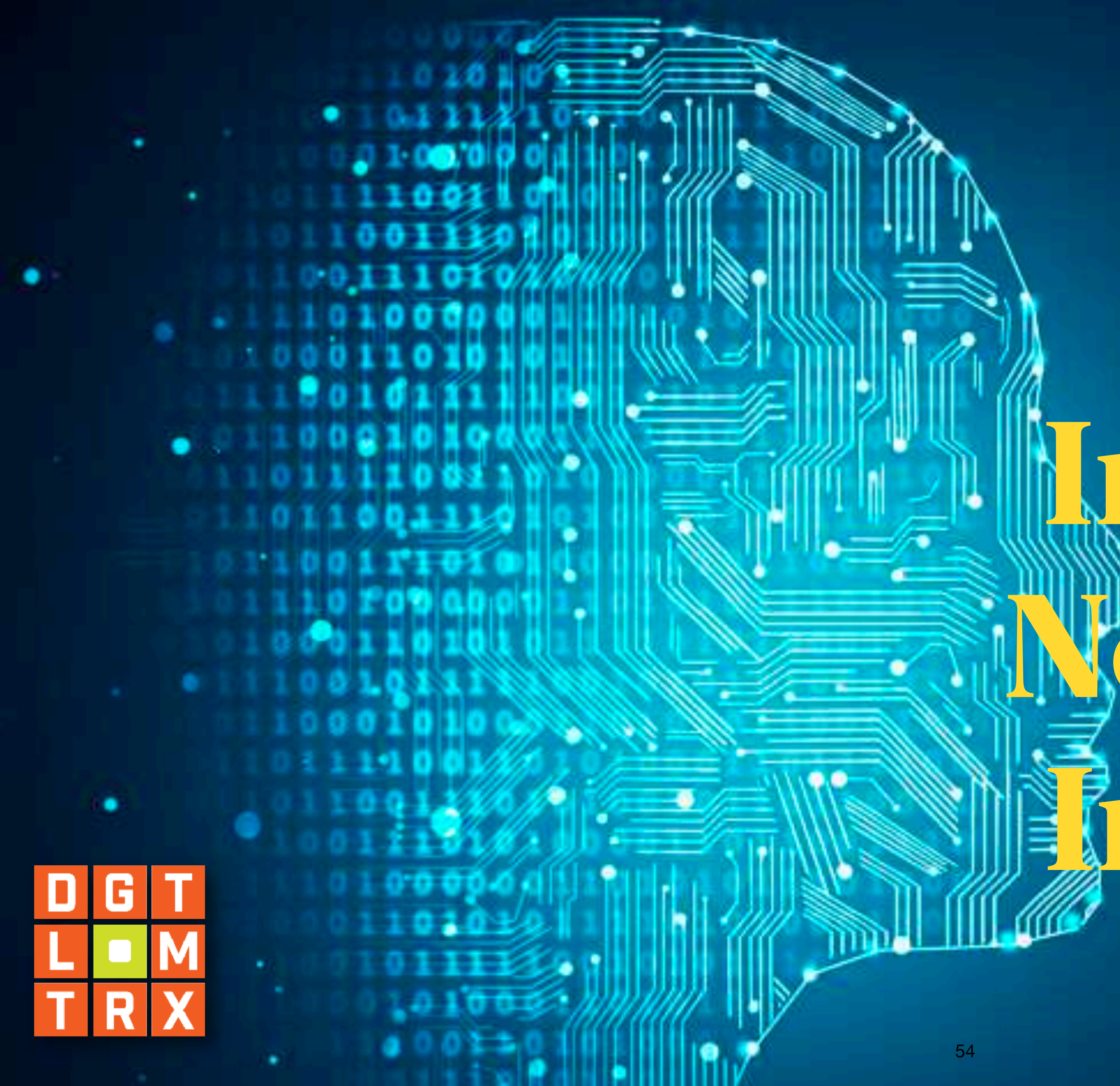
**First
Decade**

**Mobile-
Centric**

**Second
Decade**

**AI-
Centric**

**Third
Decade**



Amplified Intelligence; Not Artificial Intelligence.



Humans • Machines



Automation

Augmentation

Amplification

Collective Intelligence in Ecosystems Not Just inside Your Firm.





**Company Competence =
Human X Machine
{Learning}**

Identify & Overcome Transformation Traps Inside Your Firm.



What are your AI-led business experiments?



{innovate}

{no fail}

{test}

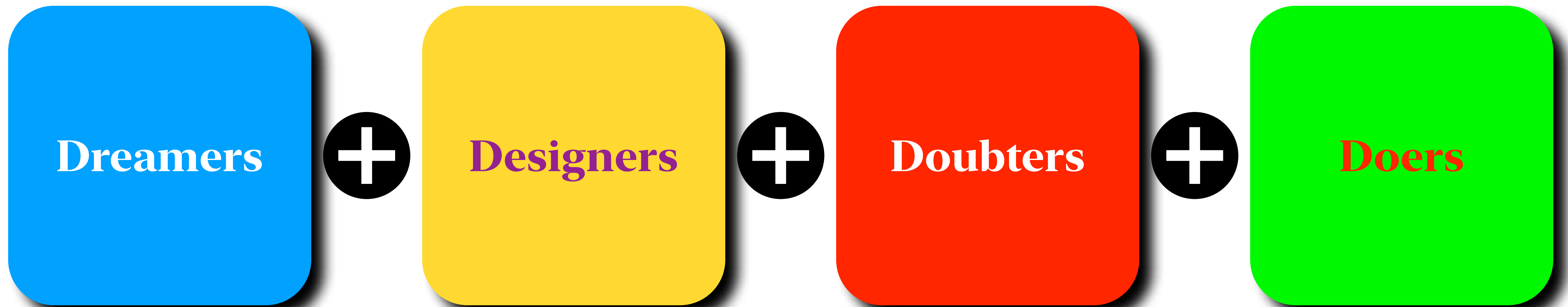
{insights}



Does your transformation roadmap reflect the potential impacts of AI?



Constitute Your Best Transformation Team.





**Amplified
Intelligence
Impacts
Multiple
Levels**

Society

Country

Industry

Company

Individual

The background features a glowing blue wireframe head on the left side, composed of interconnected points and lines. To the right, there is a perspective view of a server room with rows of server racks and glowing lights. The overall color scheme is dominated by various shades of blue and cyan, creating a high-tech, digital atmosphere.

**Managing
With
AI
Should be
Priority #1**



**The future is already here; just unevenly distributed.
~ William Gibson.**

“The **difficulty**
lies, not in new
ideas, but in
escaping from
the old ones...”

John M. Keynes

**“The secret of
change is to focus
all of your energy,
not on fighting
the old, but on
building the new.”**

Socrates

Thanks Very Much.



LinkedIn @NVenkatraman