

A person is silhouetted against a vibrant, multi-colored Milky Way galaxy in a dark night sky. The galaxy's colors transition from yellow and orange at the bottom to pink, purple, and blue at the top. The person is standing on a dark, rocky ridge, looking up at the stars.

DEMYSTIFYING ARTIFICIAL INTELLIGENCE

Katy Yam – Element AI



WHAT IS ARTIFICIAL INTELLIGENCE?

ar·ti·fi·cial in·tel·li·gence

noun: **artificial intelligence**; noun: **AI**; first known use: **1955**

A branch of computer science dealing with the simulation of intelligent human behaviour in computers.



general vs narrow ai

General AI that can accomplish tasks like humans can, is a far reality

MACHINE (narrow)

- Recognize Patterns
- Execute
- Be Trained
- IQ



PEOPLE (general)

- Understand
- Create
- Teach
- EQ + IQ

WHY IS IT SO HOT NOW?

>90%

of all data has
been generated
in the last
2 years

**...and this
has been
true for the
last 30
years.**

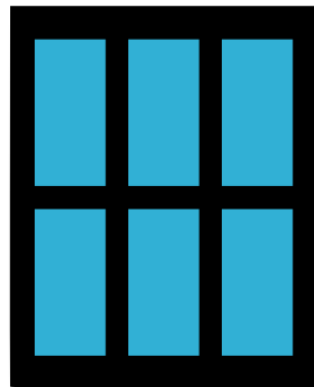


GPU

GPU-accelerated computing coupled with CPUs
will deliver **1000x computational power into 2025**

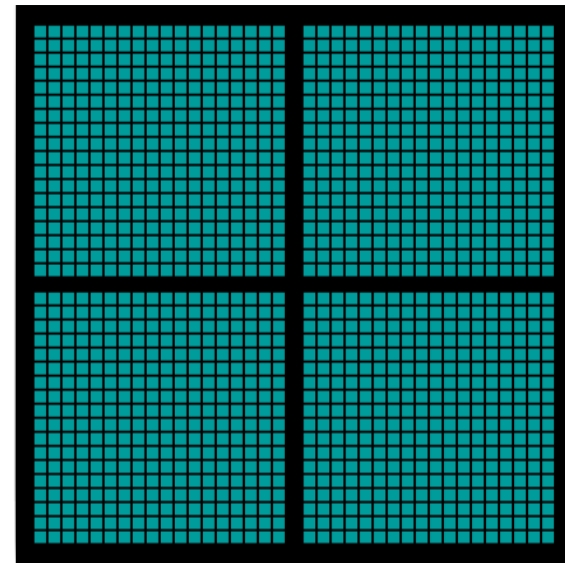
CPU vs GPU

noun: **central processing unit**; noun: **graphics processing unit** ; pioneered in **2007**



CPU
Multiple Cores

+



GPU
Thousands of Cores

Artificial Intelligence

Thinking actions
(e.g. Spreadsheets)

Machine Learning

Systems that can extract patterns & predict outcomes
(e.g. Spam Classifier)

Deep Learning

Multi-layer neural networks that self-learn
(e.g. Google Photos)

The recent era of success is largely due to advances in a category of AI technique called **deep learning.**

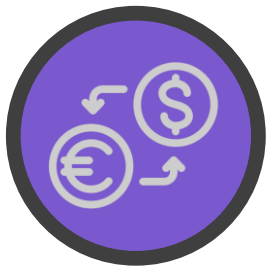


OKAY, SO WHY SHOULD I CARE?

WHAT IS THE BIG SHIFT?

Decision making is evolving from being
RULES BASED to being **DYNAMIC**

Employee tasks will change from
BUILDING & CHECKING
to **VALIDATING & TRAINING**



Questions on this?

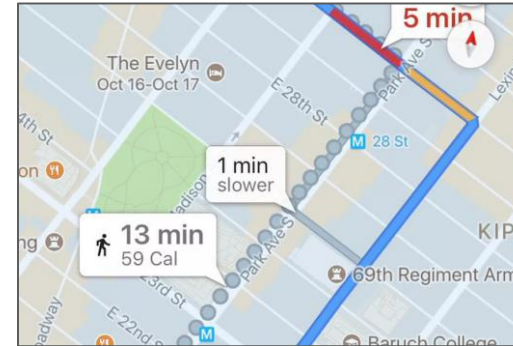
The best AI are **invisible**, assisting us in our **day-to-day activities**.



Virtual personal assistants
Siri, Cortana, Alexa/Echo, Now



Recommendation engines
Netflix, Amazon, Facebook newsfeed, Airbnb



Location services
Waze, Google Maps, OpenTable, Uber



Predictive text
Google smart-reply, smartphone keyboards

AI is already here.

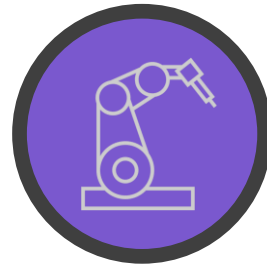
Some areas of AI



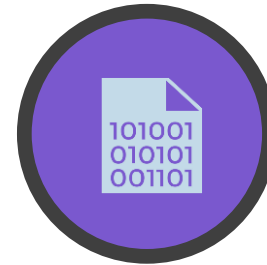
Speech
recognition
& NLP



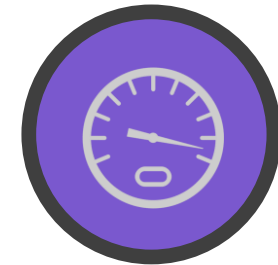
Image
recognition
(vision)



Control
(automation
& robotics)



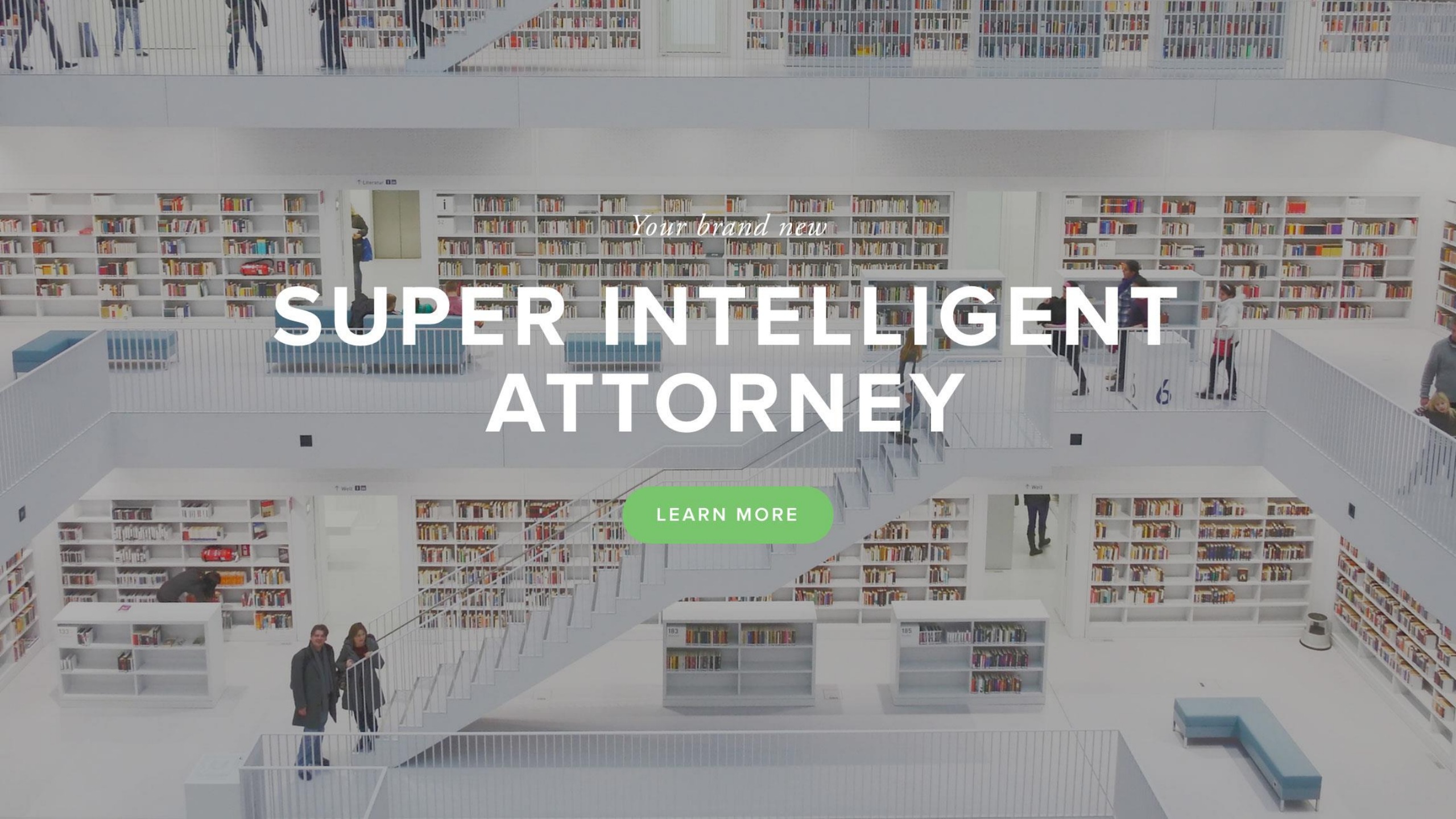
Complex
problem
solving
(prediction,
segmentation)



Operations
optimization
(sensors,
defects,
prevention)

Transformational uses of AI

Across industries

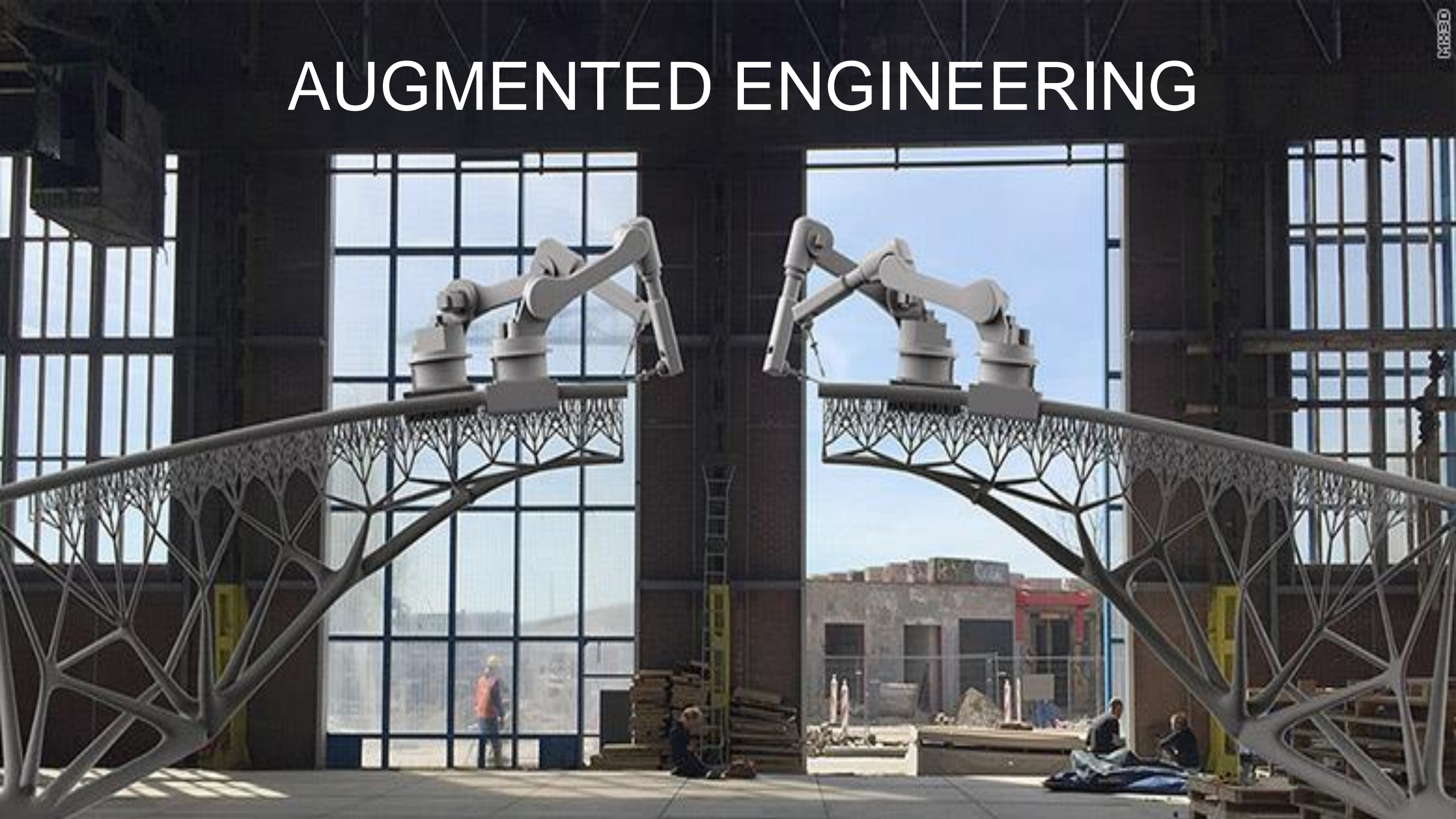


Your brand new

SUPER INTELLIGENT ATTORNEY

LEARN MORE

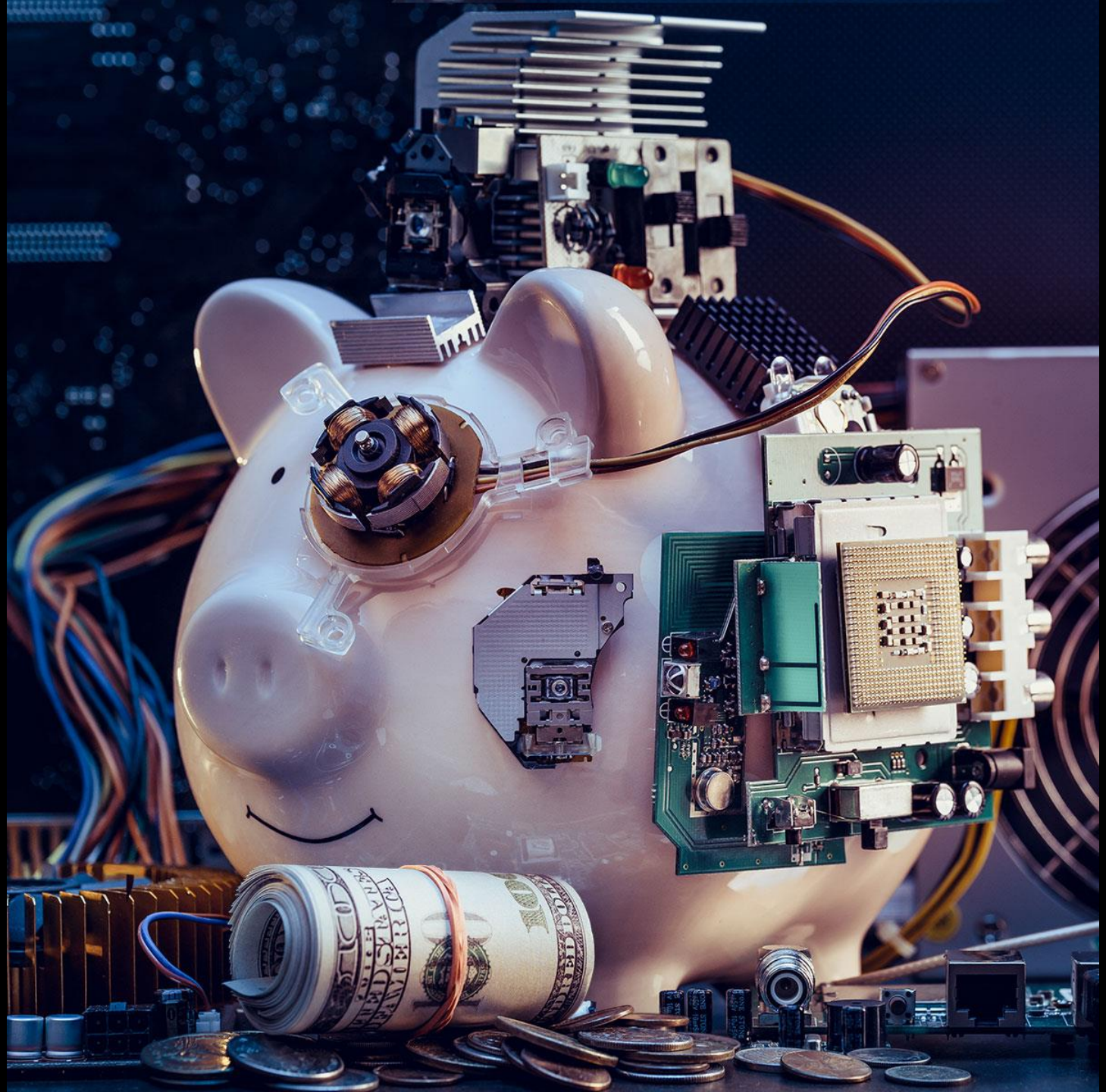
AUGMENTED ENGINEERING





AUGMENTED DESIGN

AUGMENTED DECISION MAKING



What is AI's potential for Responsible Gaming?

GameSense

KNOW THE GAME

PLAY BETTER

GET SUPPORT





bcgc


Know more.
PLAY BETTER.



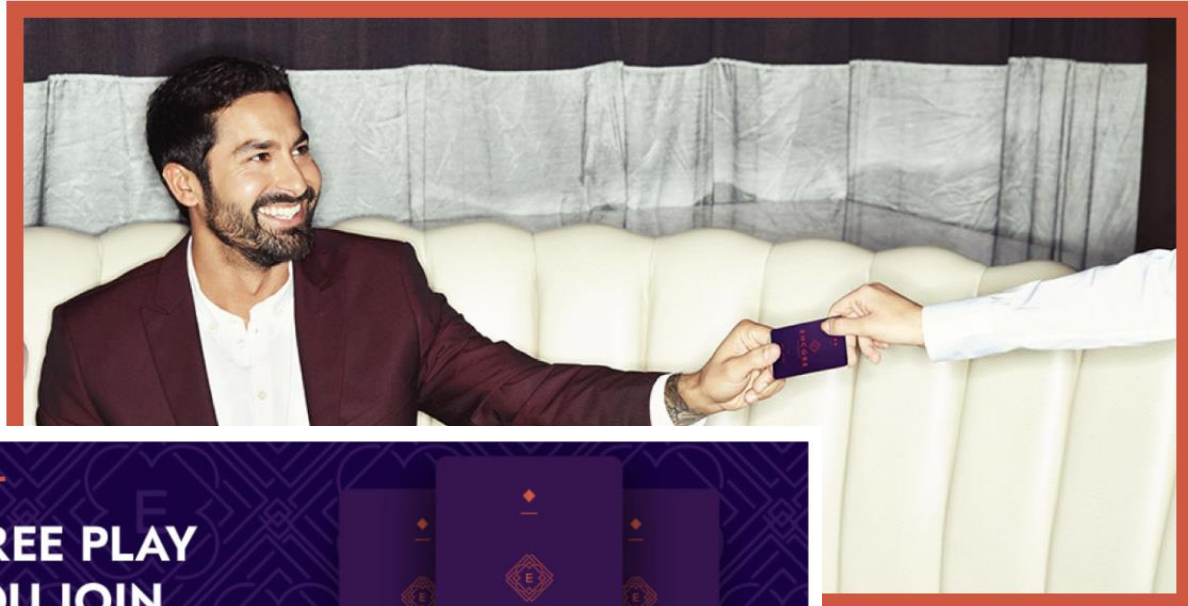


GameSense KNOW THE GAME PLAY BETTER GET SUPPORT  


Voluntary SELF EXCLUSION



If you're gambling more often than you think you should, you might want to consider BCLC's voluntary self exclusion program.



GET \$10 FREE PLAY
WHEN YOU JOIN.





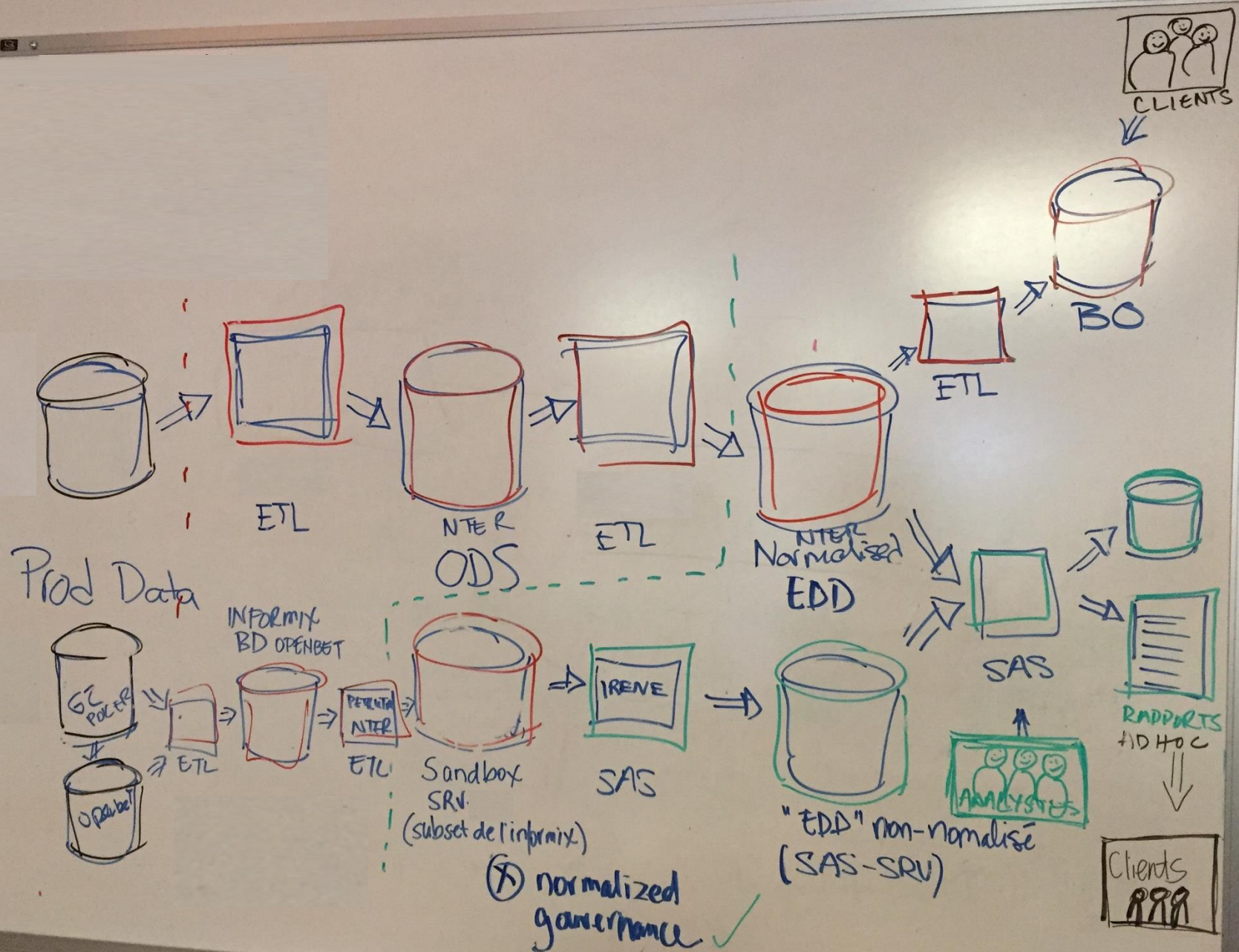
**ARE YOU & YOUR ORGANIZATION
READY TO SHIFT?**

Areas to examine in order to embrace this **Paradigm Shift.**



Data Infrastructure

Have you been investing,
maintaining or cutting over the
years?



Visions for the "data" house.



“SWOON, SO DREAMY”

Actual state of the "Foundation".



YIKES!

Reality Check



Setting the Foundation



Invest in maintaining & updating

- Infrastructure
- Analytical tools

COMPUTATIONAL POWER REQUIRED: Labelling by deep learning networks

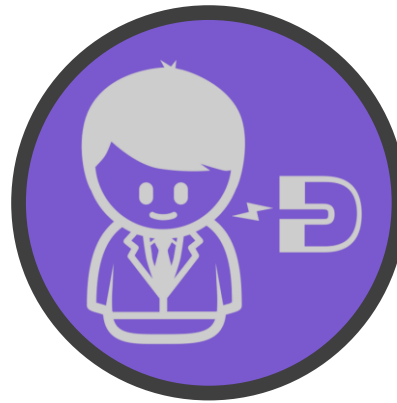


Areas to examine in order to embrace this **Paradigm Shift.**



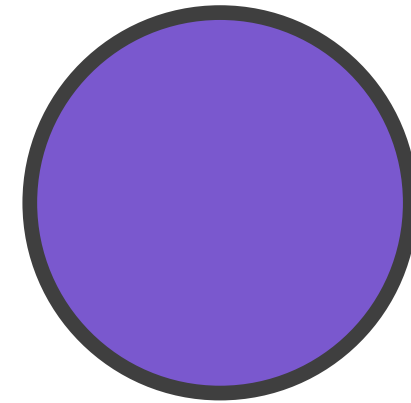
Data Infrastructure

Have you been investing, maintaining or cutting over the years?



Skills & Talent Pool

How will you help your staff pivot towards dynamic decision making?





IT'S HARD TO HIRE AI TALENT

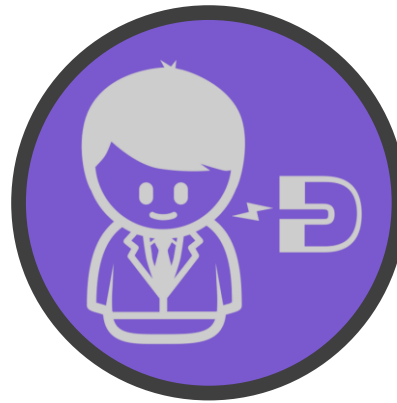
Most work for sexy technology companies or have
turned down million dollar packages to stay in
academia AND it takes years to train a good scientist

Areas to examine in order to embrace this **Paradigm Shift.**



Data Infrastructure

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Open Source & Sharing Economy

Ready to build partnerships to collaborate to win?

Collaboration ideas to consider...

- AI talent is **scarce**, so an autonomous **in-house department is a dead end.**
- Leverage university research labs, public institutes & private companies even giants like FB, Google & Amazon are **partnering to scale**, investing in research labs & **creating open-source platforms** like TensorFlow.
- Trend towards **non-proprietary code** on sharing platforms like **GitHub**.
e.g. Python or R versus SAS



Canadian AI Ecosystem 2018

ELEMENT AI

Startups & Enterprises

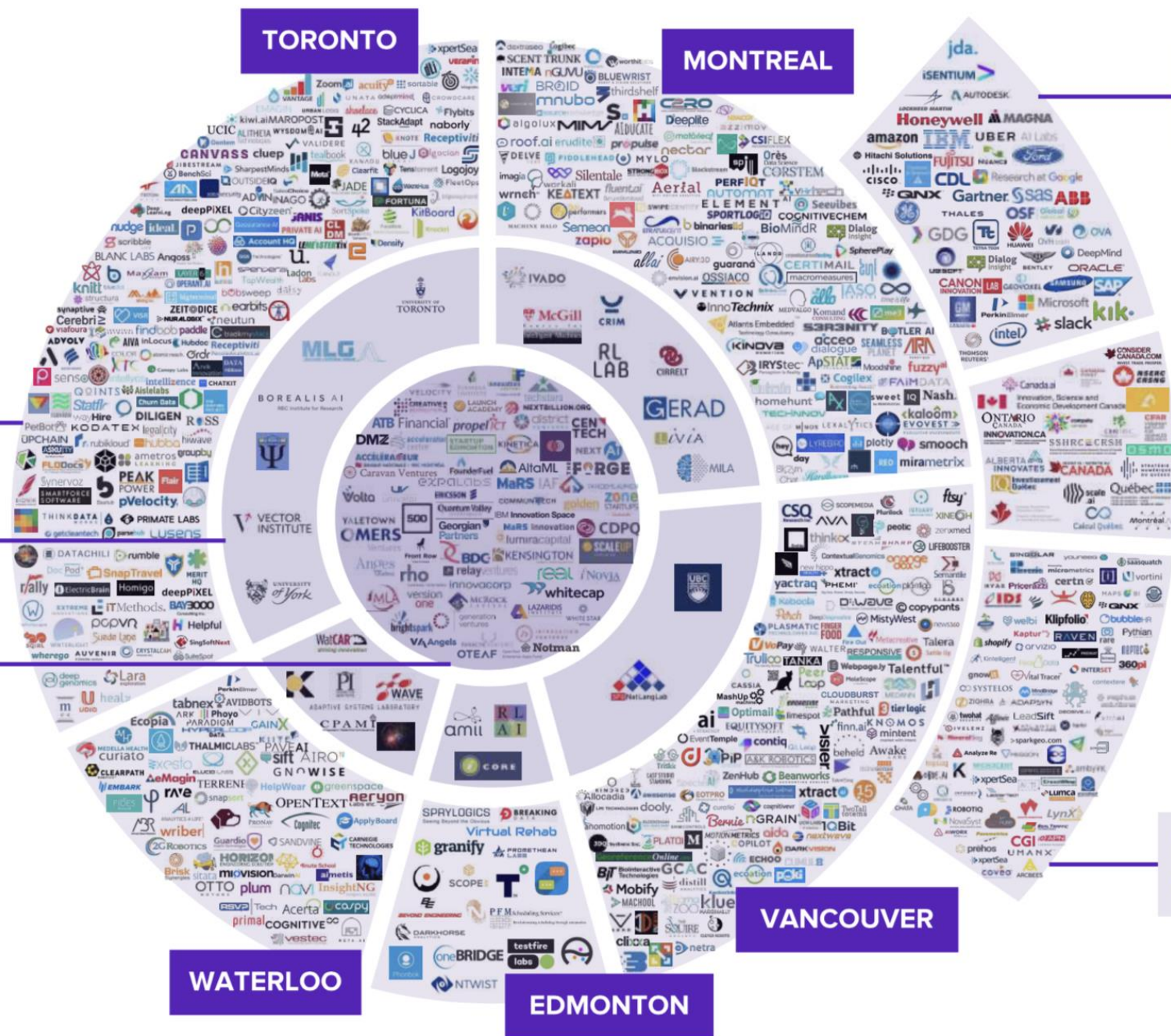
Academic Labs

Incubators, Accelerators & VC (Pan-Canadian)

International Players in Canada (Pan-Canadian)

Public & Non-Profit

Startups & Enterprises (Outside of Cluster Cities)



TORONTO

MONTREAL

VANCOUVER

WATERLOO

EDMONTON



SO WHERE DO I START?

START SMALL.

- Start with a **proof of concept** (POC) on a sample data set to get a small win.
- Identify a specific problem (cost efficiency or revenue generation).
- Litmus test your **change management plan** to deal with **fear & resistance**.
- **Road test** a pilot project then **iterate**. Rinse & repeat.



KEY TAKEAWAYS

1. Shift from rules-based to **dynamic decision making**. Jobs will change.
2. Question of when, not if so **assess your readiness to transform**.
3. **Start collaborating** & building partnerships to gain access to talent
4. Start **SMALL**. Test drive. Under-promise, over-deliver.
5. Don't underestimate the **need for change mgmt**.
6. **Be wary of AI washing**.

Join at
slido.com
#aiHorizons



Thoughts or Questions?



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