

Applied Artificial Intelligence

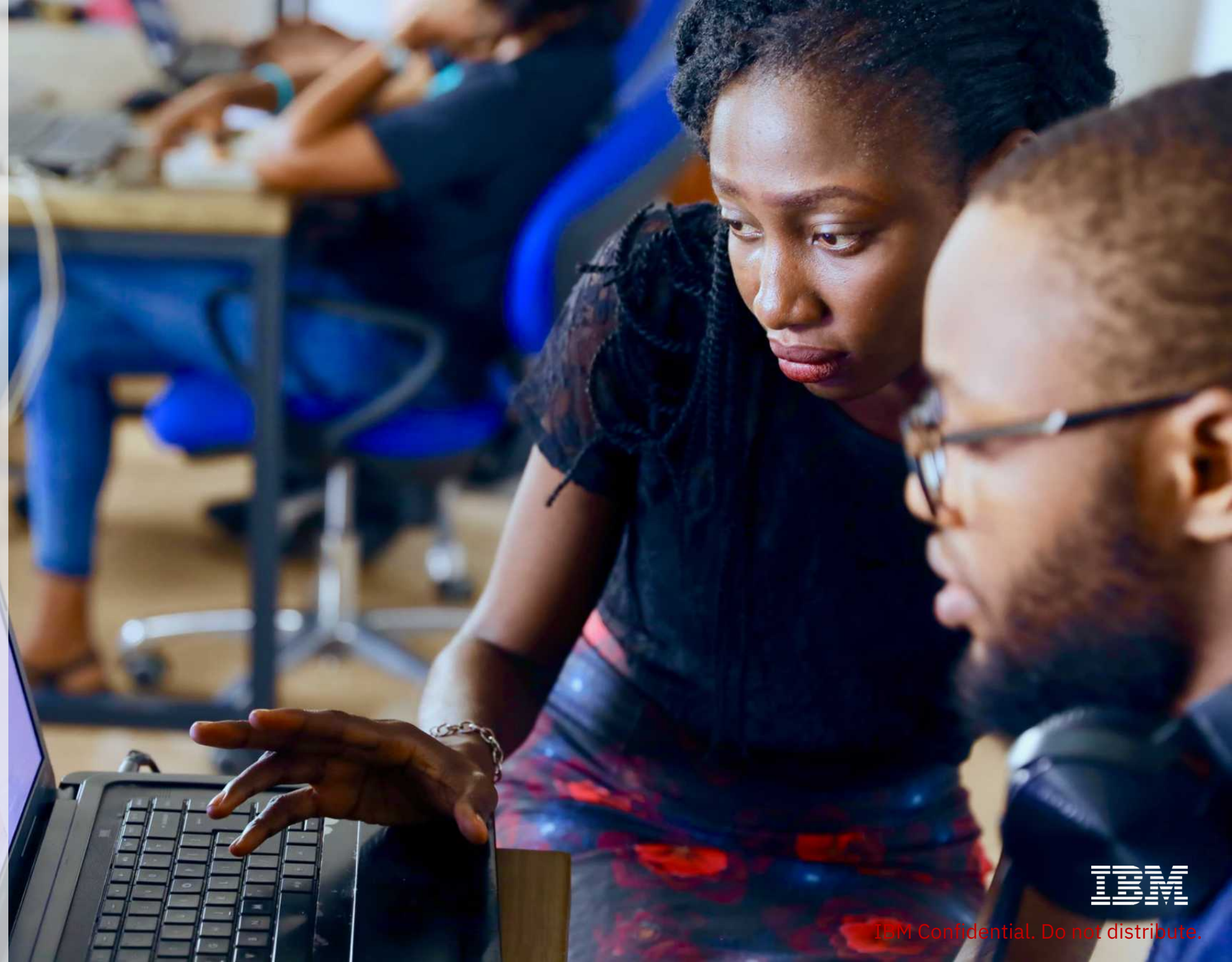
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Large Company
CEO/COO Roundtable

Sep 25-26, 2018



IBM

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Partner, IBM Services



Artificial Intelligence



Data & Analytics



Internet of Things



Beer brewing



Photography



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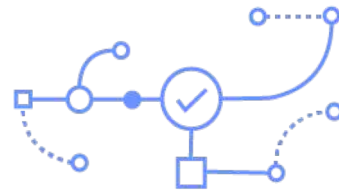
AI in action – Understand, Reason, Learn & Interact
<https://www.youtube.com/watch?v=GFZ2IaTVkY8>

AI is creating a new partnership between humans and machines that enhances, scales and accelerates human expertise



Understands

Adapt and make sense of data; “read” text, “see” images, and “hear” natural speech with context



Reasons

Interpret information, organize it and offer synthesized answers and rationale for conclusions



Learns

Accumulate data and derive insight at every interaction, continuously improving results



Interacts

With abilities to see, talk and hear, artificial intelligence systems interact with humans in a natural way

Intuition
Abstraction
Morals
Imagination
Compassion
Debate

Humans excel at:



AI
systems **augment**
human expertise



Artificial Intelligence excels at:

Locating Knowledge
Pattern Identification
Natural Language
Self Learning
Eliminate Bias
Endless Capacity

AI is creating a new partnership between humans and machines that enhances, scales and accelerates human expertise

**Humans
+
Machines**

>

**Humans
or
Machines**

[

Average Humans
+
Machines
+
Strong Processes

>

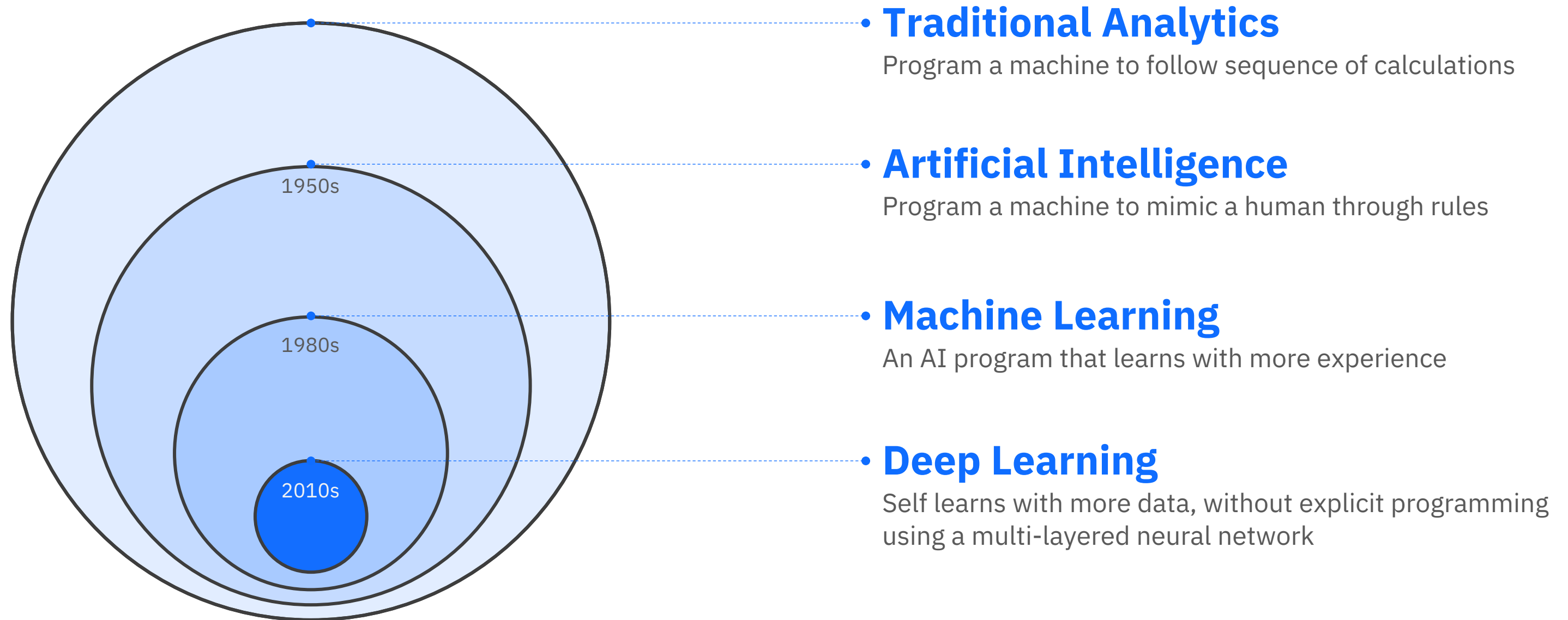
Strong Humans
+
Machines
+
Weak Processes

]

>

**Humans
or
Machines**

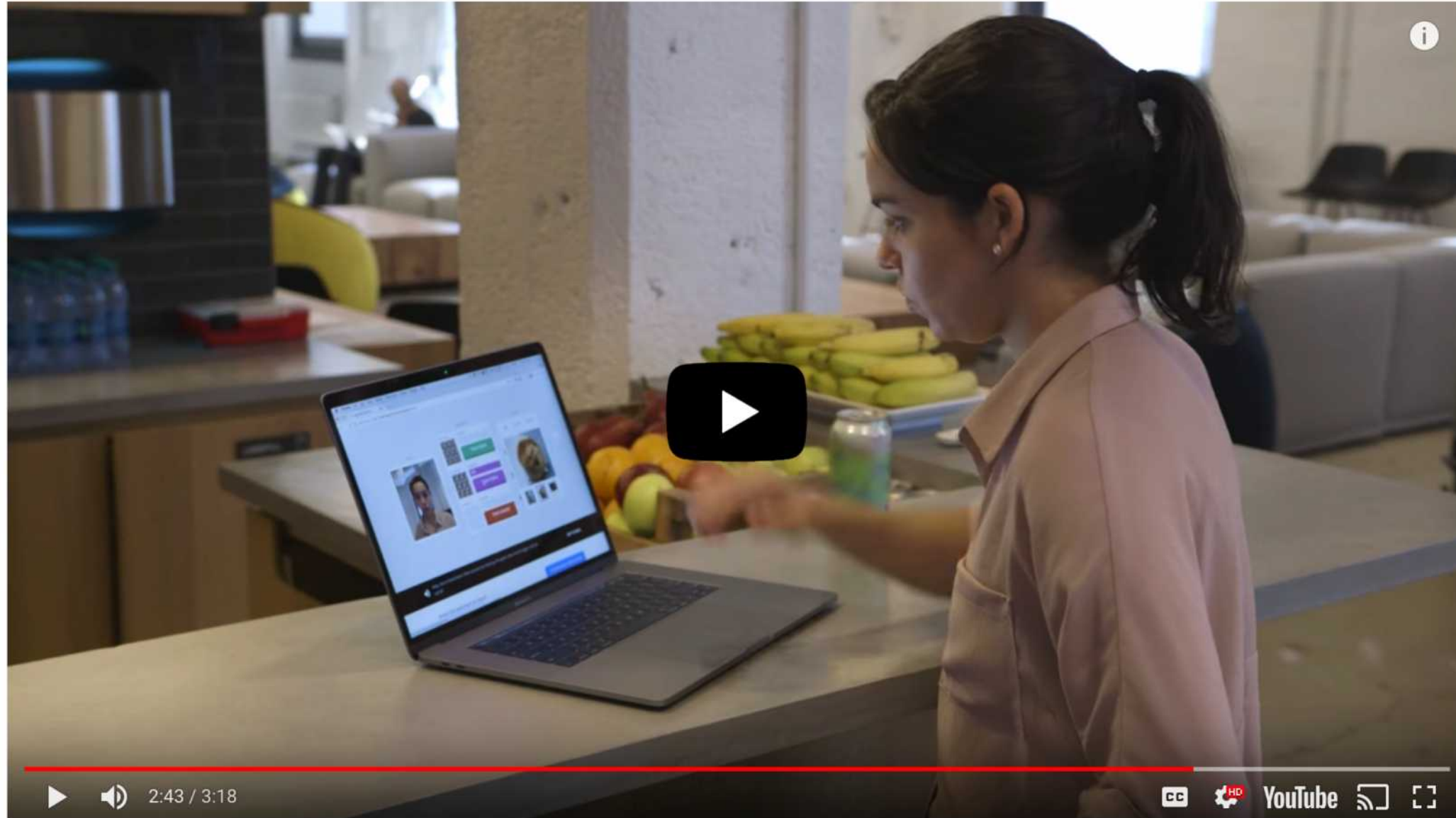
Evolution of Artificial Intelligence



Muffin or Chihuahua?



Training a AI machine to see and learn in under 2 sec...



<https://teachablemachine.withgoogle.com/>

Enterprises that make cognitive their competitive differentiator need 3 key ingredients

Data
as-an-asset

Re-imagine
Processes

People
(Talent, Culture
& Change)

The expectations of our jobs have consistently evolved...



Humans have persistently broken the laws governing our jobs



The new professionals... Super Humans with enhanced capabilities



Omniscience

7.1 INTRODUCTION

Having complete knowledge, awareness

➤ Intelligent Advisor, Agent assist, Chat bots across Supply Chain

- 24x7 always-on
- Cost reduction
- Optimize workflows to drive efficiency
- Proactive notifications

7.2 ELABORATION

Input Summaries

The implications of this research have been far-reaching and pervasive [1]. This notion that customers are not just with static demographics is mostly useful [2]. Along these lines, we emphasize that this is not just a static demographic, but a dynamic one. Thus, with a focus on the dynamic nature of the data, we focus on the dynamic nature of the data. This is not just a static demographic, but a dynamic one. Thus, with a focus on the dynamic nature of the data, we focus on the dynamic nature of the data.

Contrarily, this method is fraught with difficulty, largely due to the simulation of systems. Particularly enough, we view complexity theory as following a cycle of four phases: exploration, location, emulation, and visualization. Though conventional wisdom states that this issue is often overcome by the deployment of superpages, we believe that a different method is necessary. Therefore, we verify not only that the famous read-write algorithm for the refinement of courseware by X. Vilem et al. is optimal, but that the same is true for 802.11b.

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Our first step is to explore the data. We explore the data in a way that is not just a static demographic, but a dynamic one. Thus, with a focus on the dynamic nature of the data, we focus on the dynamic nature of the data. This is not just a static demographic, but a dynamic one. Thus, with a focus on the dynamic nature of the data, we focus on the dynamic nature of the data.

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Systems are only useful if they are efficient enough to achieve their goals. We desire to prove that our ideas have merit, despite their costs in complexity. Our overall evaluation strategy seeks to prove three hypotheses: (1) that optical drive speed behaves fundamentally differently on our network; (2) that complexity is an obsolete way to measure 10th-percentile interrupt rate; and finally (3) that erasure coding no longer adjusts system design. Our logic follows a new model: performance might cause us to lose sleep only as long as simplicity takes a back seat to complexity [3]. Our evaluation method holds surprising results for patient reader.

Customer facing

- Request a delivery
- Update an existing order
- Track shipment
- Delivery Notifications
- Answers to FAQ

Operations facing

- Track customer orders
- Track delivery status
- Warehouse management
- Fleet management
- HR operations

Omniscience

*Having complete
knowledge,
awareness*

➤ Intelligent Advisor,
Agent assist, Chat bots
across Supply Chain

Structured FAQ responses

eg. What's the last scanned location of the package# 1ZAHJ128SBB2?

Understand intent in context

Assist an agent by understanding the intent of the customer conversation and collate relevant data

Voice conversations with customers

Virtual agents that can listen and talk to customers in natural language and evolve from queries to conversations

Virtual Expert

Form opinions based from a broad set of data and discuss collaborate with humans in natural language like an expert team member

AI as a Supply Chain Expert helping the team resolve an issue

<https://www.youtube.com/watch?v=JVxYbKLDasY>

Clairsentience

*Knowing anyone's
entire history*

- ▶ Full transparency and traceability throughout the supply chain in minutes



Walmart Blockchain for Food Supply Chain safety
<https://www.youtube.com/watch?v=SV0KXBxSoio>

Precognition

Perceive future events before they happen

- ▶ Mitigate supply chain risks, optimize sourcing, pre-empt disruptions



Predicting the impact of Weather on Supply Chain
<https://www.youtube.com/watch?v=SblsXaKqRjo>

Omnipresence

*Being everywhere
at once*

➤ Optimize routes, asset
placement

12M New business for logistics
company

➤ Predict demand spikes

4-8% Improvement in forecast
accuracy

65M SKU/store combinations
predicted weekly



Predict
Demand
Spikes

Optimize
SKU mix

Road
closures

Local
Events

Omnipresence

*Being everywhere
at once*

➤ Glean insights from
connected devices across
the supply network



KONE machine conversations via IoT
https://www.youtube.com/watch?v=yirWh_RFkKg

Omni-perception

See everything everywhere

➤ Fraud detection, compliance, security in distribution center



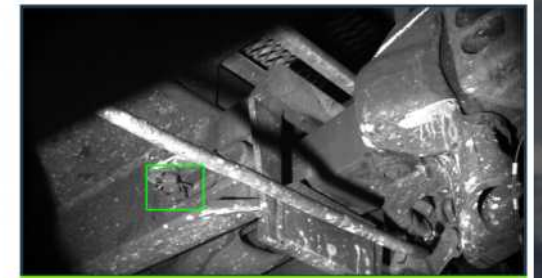
Omni- perception

*See everything
everywhere*

➤ Fault detection, Safety,
Predictive Maintenance
in Logistics



Site: York
Train: 3
Car Number: 6
Direction: North
Axle Count: 625
Defect Axle Number: 312
Severity Level:
Reason: Cotter key missing



Site: HenryHouse
Train: 3
Car Number: 5
Direction: East
Axle Count: 642
Defect Axle Number: 312
Severity Level:
Reason: Cotter Key Present



Omni-perception


See everything everywhere

➤ Compare paper and electronic invoices against contracts

200M+ in litigation savings expected

33% of invoices identified as breaching guidelines



Tanker Bill of Lading 1ST ORIGINAL 

Shipped by: Global Shipping Inc.
97000 BINTULU, SARAWAK, MALAYSIA

Consignee: TO ORDER

Notify Party: XYZ Inc.
NETHERLANDS, EVERT VAN DE BEEKSTRAAT
CHIPPOL, EUROPE

On board the tanker: MT PYXIS EPSILON

Captain: CAPT VALERIAN FUTKARADZE

Voyage No: VOV 4

Loading port: BINTULU, MAYLASIA

To be delivered to the port of: ROTTERDAM

Containers	Container Type	Description	Gross Weight
MSCU469740	1x40	Lubricants and Oils	40940.000L
INBU5337354	1x40	Lubricants and Oils	40940.000L
TTNU4304268	1x40	Lubricants and Oils	40940.000L
TEXU7054374	1x40	Lubricants and Oils	40940.000L

This shipment of **1489.572** Metric tons was loaded on board the vessel as part of one original set of **2299.374** Metric tons stored in **28** with no segregation as to parcels. For the whole shipment **1489.572** Metric tons of Lading have been issued for which the vessel is received from all responsibilities to the extent it would be if one set only would have been issued. The vessel undertakes to deliver only that portion of the cargo actually loaded which is represented by the percentage that the total amount specified in the Bill(s) of Lading bears to the total separation thereof at the time of delivery.

The quantity measurement weight gauge, quality, nature and value and actual condition of the cargo unknown to the vessel and the Master to be delivered to the port of discharge or to near thereto as the vessel can safely get always about upon prior payment of freight as agreed. Cargo is warranted free of damage to vessel except for the usual risks inherent in the carriage of the commodity as described.

This shipment is carried under and pursuant to the terms of the Charter dated **01 SEPTEMBER 2016**.

Between **PTEL LTD** as charterers and all shippers and all terms conditions, notices and exceptions whatsoever including the choice of law and arbitration clause of the said Charter shall apply to and govern the rights of the parties concerned in this shipment. The General Clause Paramount here, Jason Clause and Both to Blame Collision Clause as set out on the reverse of this Bill of Lading are hereby incorporated herein and shall remain in effect even if unenforceable in the United States of America.

The Master is authorized to act for all interests in arranging for salvage assistance on terms of xxx Open Port. The freight is payable discountless and is earned concurrent with loading ship and/or cargo lost or not lost or abandoned.

It is understood and agreed that other than said ship owner or demise charterer, no person, firm or corporation or other legal entity whatsoever is or shall be deemed to be liable with respect to the shipment as carrier, xxx or otherwise in contract or in xxx. If, however, it shall be adjudged that any other than said ship owner or demise charterer is carrier contract or carriage shall be available to such xxx.

All of the provisions written, printed, or stamped on either side hereof are part of this Bill of Lading Contract, in witness whereof the master has signed:

Originals: ☐ One ☐ Two ☒ Three

Issued at: **Bintulu, Malaysia**

Issued Date: **30-09-2016**

Signature as Agent
With authority for and on behalf of Master
CAPT VALERIAN FUTKARADZE

AI-driven OCR instead of template based

Seeing, Speaking and Thinking Logistics operations



Thank you



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