



The 'Big Data Intelligence' Driving the Next Digital Disruption



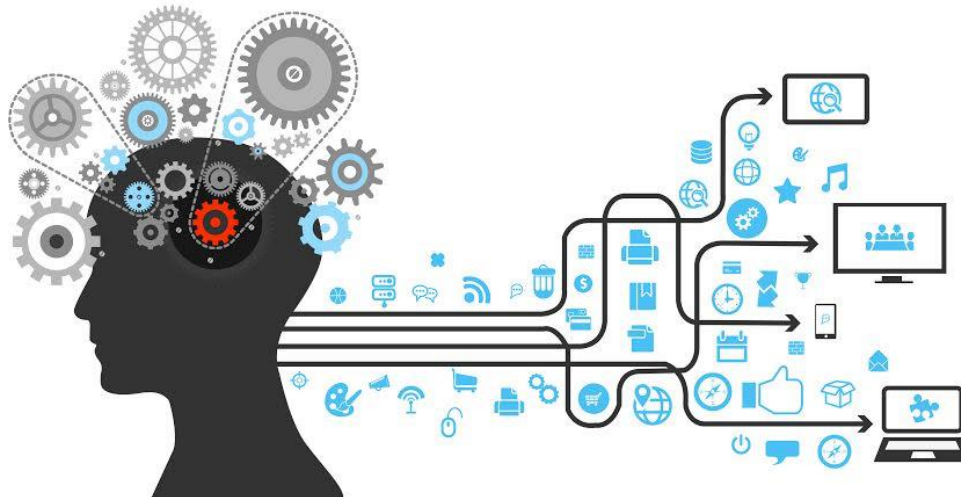
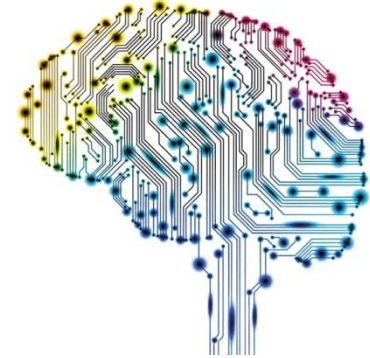
Prepared by Aissam OUAZA, Engineer, MBA, Serial Entrepreneur, Keynote Speaker, Consultant, Mentor



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BIG DATA AND AI ARE BREAKTHROUGH DIGITAL TRENDS

- Immediacy is the new consumer habit.
- A sea of data is both the fuel and result of Digital Transformation.



These disruptive technologies are emerging while converging very fast, for the sake of more agility, smarter business processes and better productivity.



HISTORY OF BIG DATA

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- The term Big Data was first coined in 1998 by John Mashey.
- According to a new report from IBM Marketing Cloud, “10 Key Marketing Trends For 2017,” 90% of the data in the world today has been created in the last two years alone, at 2.5 quintillion bytes of data a day!



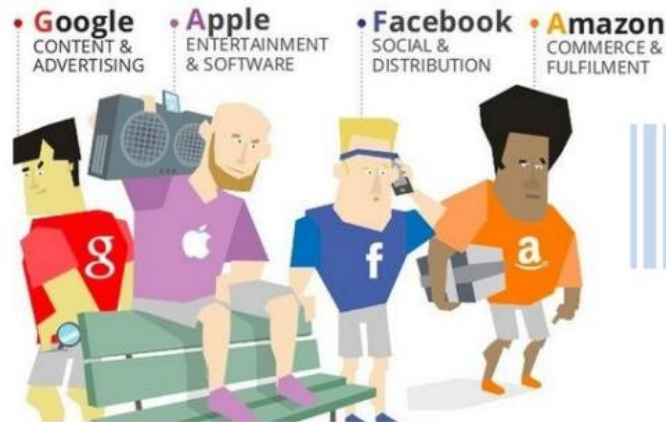


HISTORY OF BIG DATA

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GAFA ERA : Data, data and more data

**FANTASTIC
FOUR**





WHAT IS BIG DATA ?

E S P R

- Simply: Data of Very Big Size.
- Can't process with usual tools.
- Distributed Architecture Needed.
- Structured (Record wise) / Unstructured (Files).



EVERY INDUSTRY IS CONCERNED BY BIG DATA

How These Industries Are Leveraging Big Data.
You May Get Surprised! How Different Industries are Using Big Data?

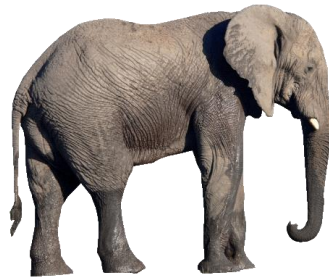


Source: Andrea Maria, September 2017, Medium.com



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graph LR; A[Collect] --> B[Store]; B --> C[Process]
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The diagram illustrates a three-step process flow. It begins with a box labeled 'Collect', followed by an arrow pointing to a box labeled 'Store', which is then followed by another arrow pointing to a box labeled 'Process'.

A cheetah is shown in a full running stride, facing right. Its body is low to the ground, and its legs are extended. The cheetah's fur is a golden-yellow color with numerous black spots. The background is a plain, light gray.

A vibrant display of various fresh fruits, including apples, grapes, and berries, arranged in wooden crates. The image shows a variety of colors and textures, from bright red apples to green grapes and purple berries.

A word cloud of computer science and mathematics terms. The most prominent words are 'Algorithm', 'Sorting', 'Searching', 'Maximum', 'Shortest', 'Distance', 'Graph', 'Line', 'CP', 'DP', 'Matrix', 'Intersection', 'Convex', 'points', 'path', 'Modular', 'LC', 'PC', 'Subsequence', 'Matching', 'Exponentiation', 'First', 'Optimal', 'Longest', 'Common', 'Vertex', 'Articulation', 'Bridge', 'Minimum', 'Maximum', 'Flow', 'Network', 'Bipartite', 'Hungarian', 'Hamiltonian', 'Game Theory', 'Combinatorics', 'Probability', 'Statistics', 'Geometry', 'Algebra', 'Calculus', 'Discrete Math'.





WHAT IS ARTIFICIAL INTELLIGENCE ?

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Artificial intelligence (AI) is intelligence exhibited by machines

The term artificial intelligence was coined by John McCarthy in 1956

- The theory and development of computer systems
- To perform tasks requiring human intelligence such as:
 - Visual perception,
 - Speech recognition,
 - Decision-making,
 - Translation between languages.



Source: Sandeep Giri, CLOUD x LAB



E S P R

WHAT IS ARTIFICIAL INTELLIGENCE ?



Artificial Narrow Intelligence (ANI): Machine intelligence that equals or exceeds human intelligence or efficiency **at a specific task**.

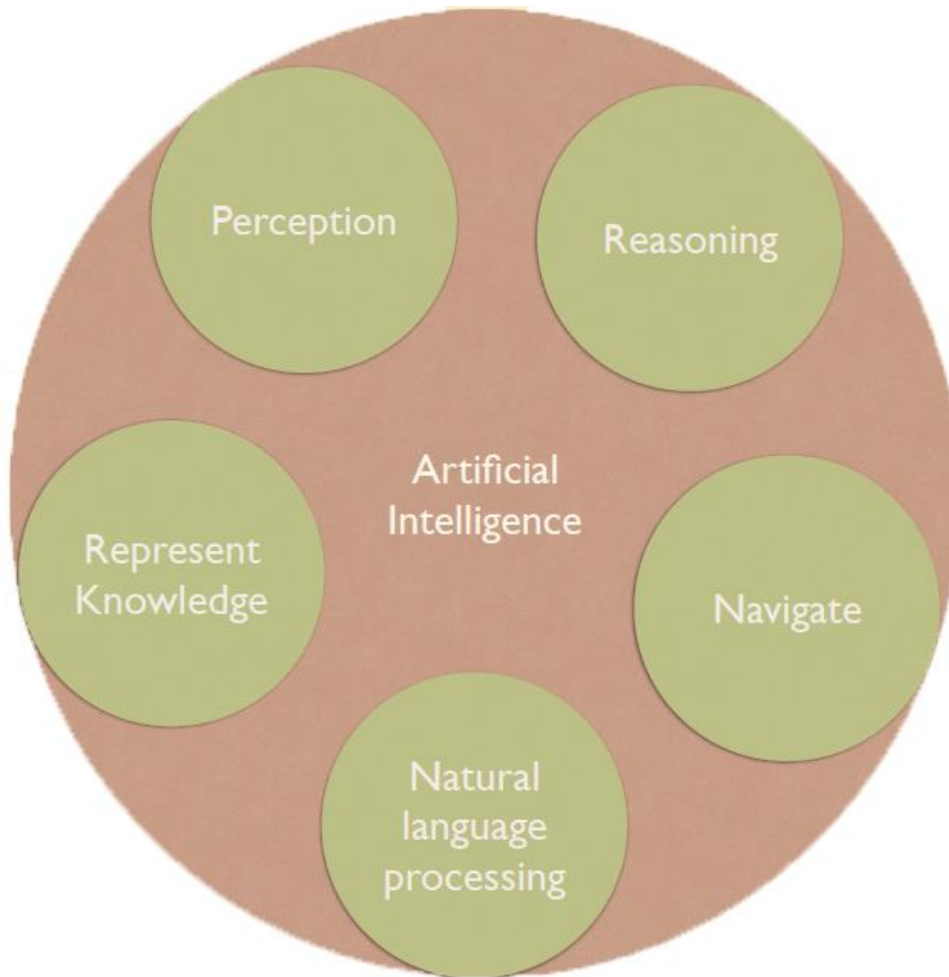


Artificial General Intelligence (AGI): A machine with the ability to **apply intelligence to any problem**, rather than just one specific problem (*human-level intelligence*).



Artificial Superintelligence (ASI): An **intellect that is much smarter than the best human brains** in practically every field, including scientific creativity, general wisdom and social skills.

SUB OBJECTIVES OF ARTIFICIAL INTELLIGENCE

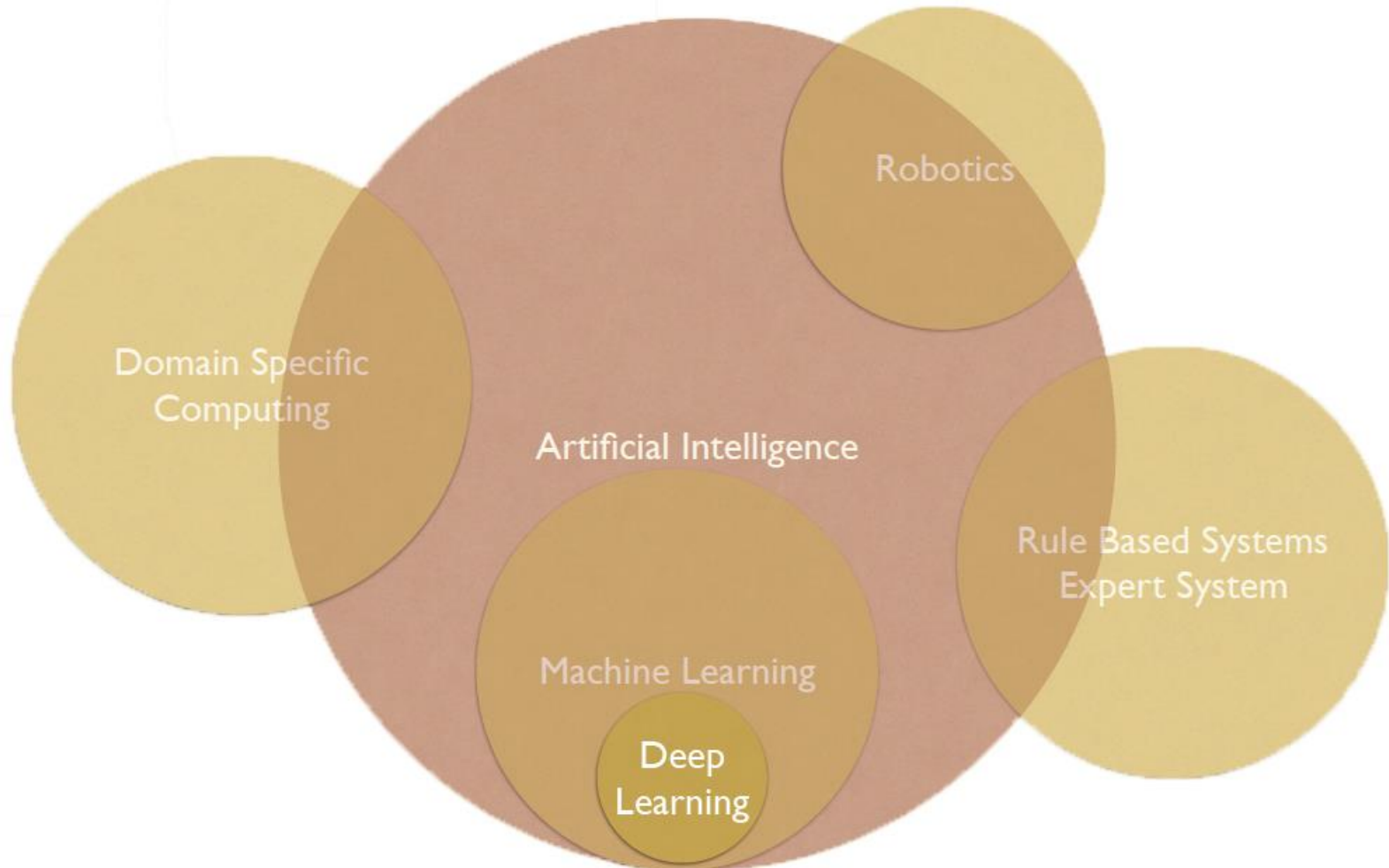


With these previous building blocks, the following should emerge:

- Emotional Intelligence.
- Creativity.
- Intuition.

Source: Sandeep Giri, CLOUD x LAB

HOW TO ACHIEVE ARTIFICIAL INTELLIGENCE ?

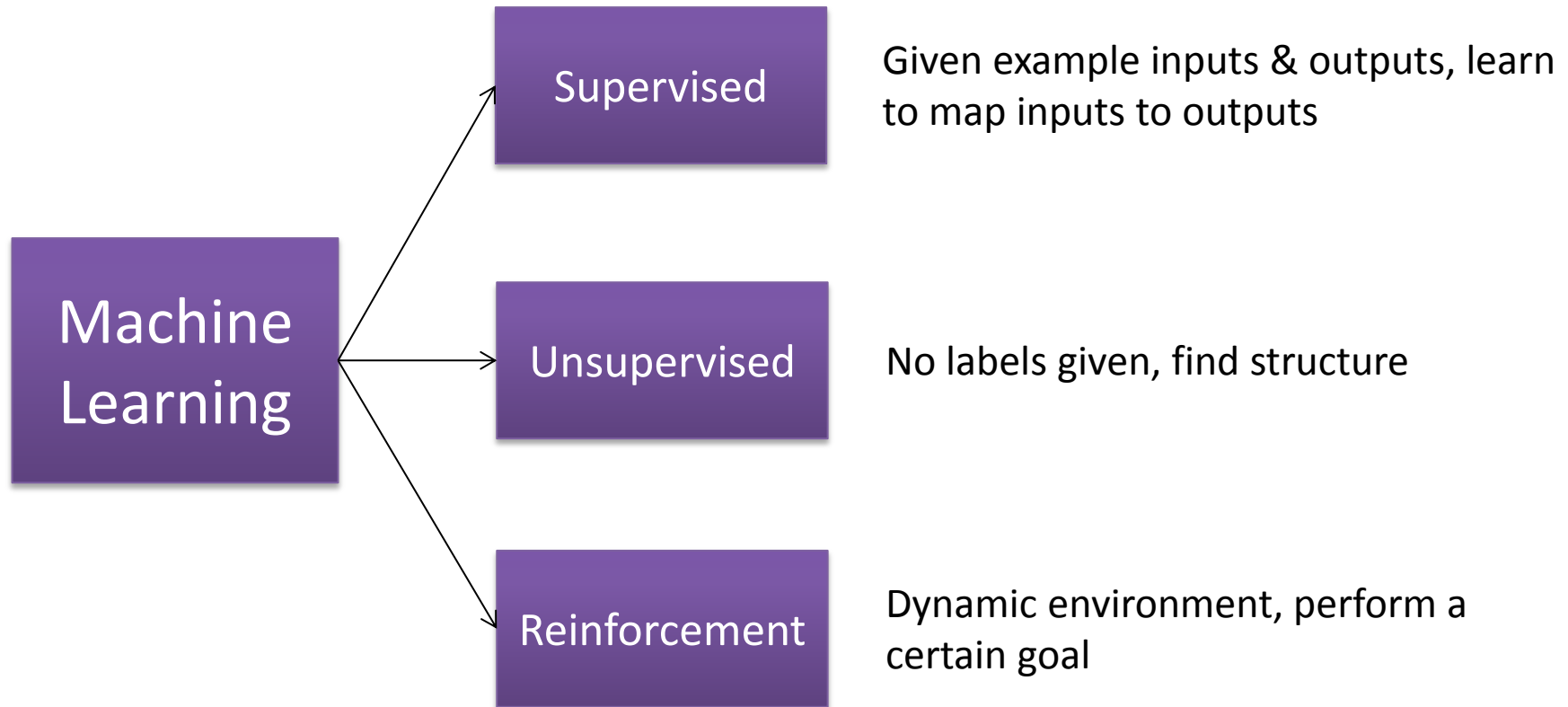


Source: Sandeep Giri, CLOUD x LAB



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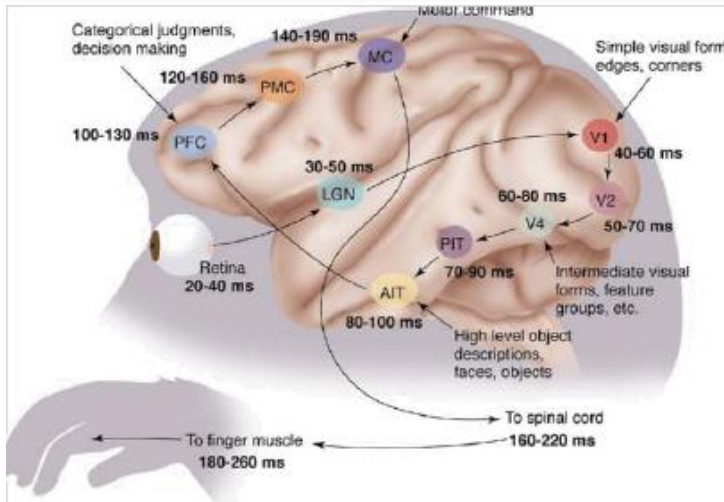
MACHINE LEARNING - BASICS



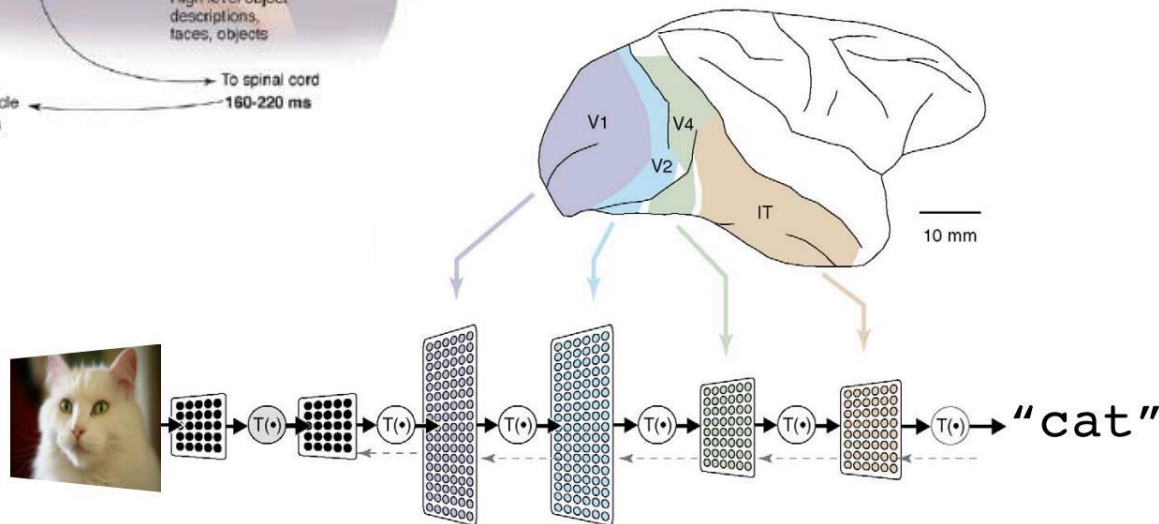


DEEP LEARNING - BASICS

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The first hierarchy of neurons that receives information in the visual cortex are sensitive to specific edges while brain regions further down the visual pipeline are sensitive to more complex structures such as faces.



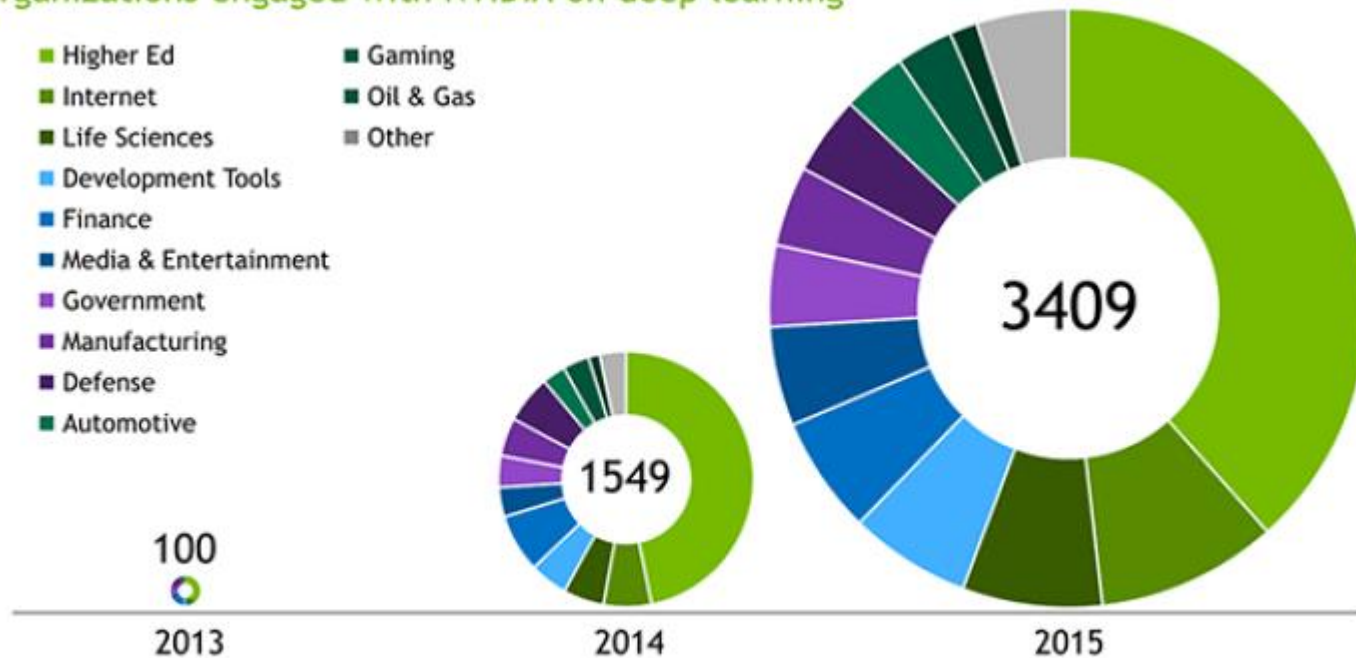
A deep neural network consists of a hierarchy of layers, whereby each layer transforms the input data into more abstract representations (e.g. edge -> nose -> face). The output layer combines those features to make predictions.

Source: Lukas Masuch, Deep Learning - The Past, Present and Future of Artificial Intelligence

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EVERY INDUSTRY WANTS INTELLIGENCE

Organizations engaged with NVIDIA on deep learning

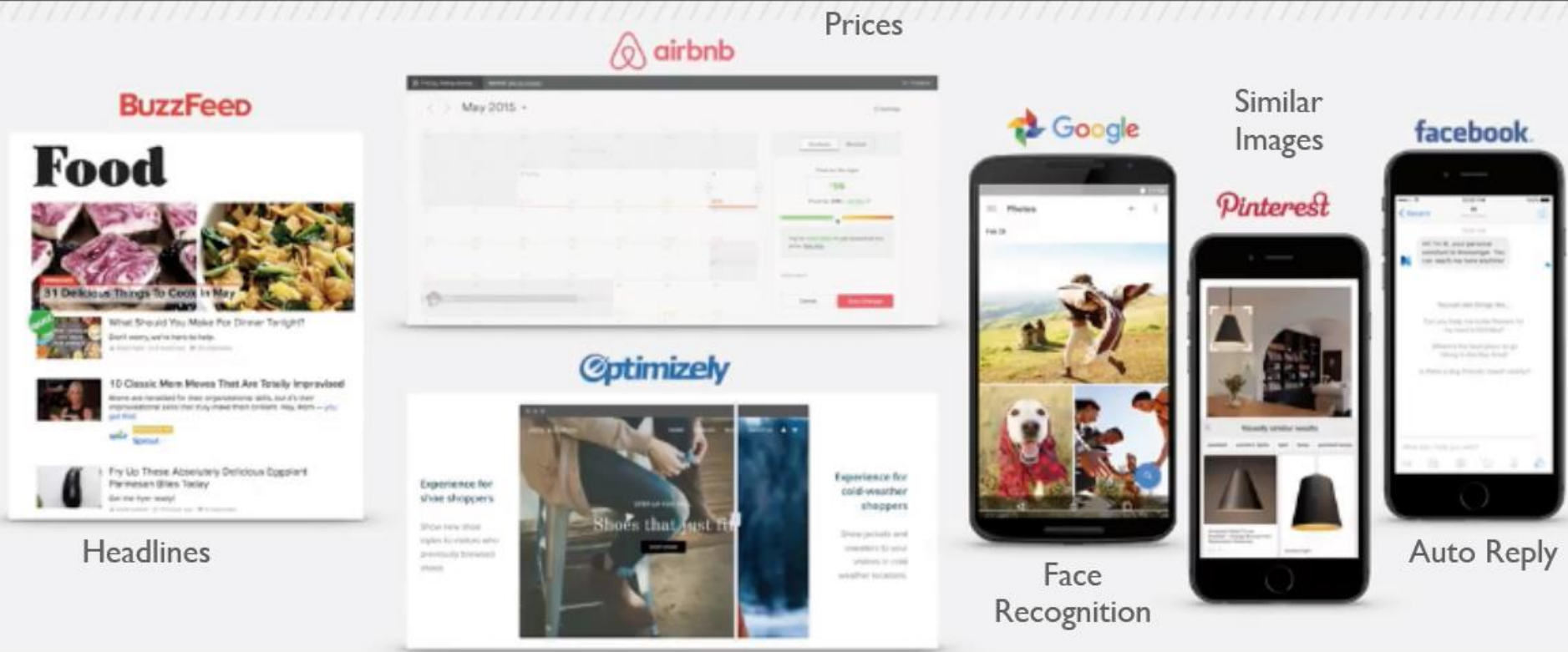


Source: Lukas Masuch, *Deep Learning - The Past, Present and Future of Artificial Intelligence*

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WHO IS USING ARTIFICIAL INTELLIGENCE ?

ALMOST ALL



Source: Sandeep Giri, CLOUD x LAB

TO GATHER DATA & AUTOMATICALLY SOLVE PROBLEMS, WHAT DO WE NEED ?

Big Data

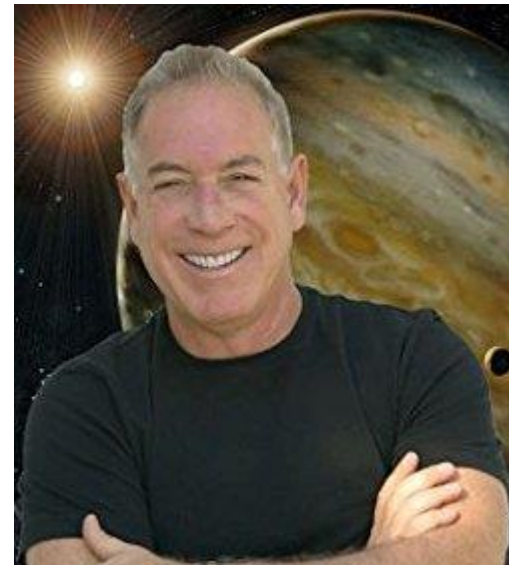


Artificial
Intelligence

A deluge that can be controlled

Underscoring the importance of human
intelligence

“The Next Digital Disruption is Big Data Intelligence”. The convergence of big data with AI is inevitable as the automation of smarter decision-making by thinking machines, is the next evolution of Big data.



(James Canton, Global futurist)



THE CONVERGENCE OF BIG DATA AND ARTIFICIAL INTELLIGENCE

- In a world where there is big data everywhere, the monetization of data, faster decision-making and knowledge extraction, will be driven by AI.
- The coming back of AI as one of hottest trends in tech at the moment is due to high data volumes, cutting-edge algorithms, and outstanding progress in computing power and storage.
- AI allows getting the most out of data which paradoxically represents the main limitation of AI learning process. This is to say that big data capabilities would obviously bring AI to its fullest potential.
- Combining AI and Big data is definitely the biggest disruptive breakthrough of our time.



THE PAST OF THE PRESENT

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Robots now have emotions !!



Source: Emotional robot. (Aldebaran/Jake Curtis)

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THE PRESENT OF THE PRESENT

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SELF-DRIVING TRANSPORTATION

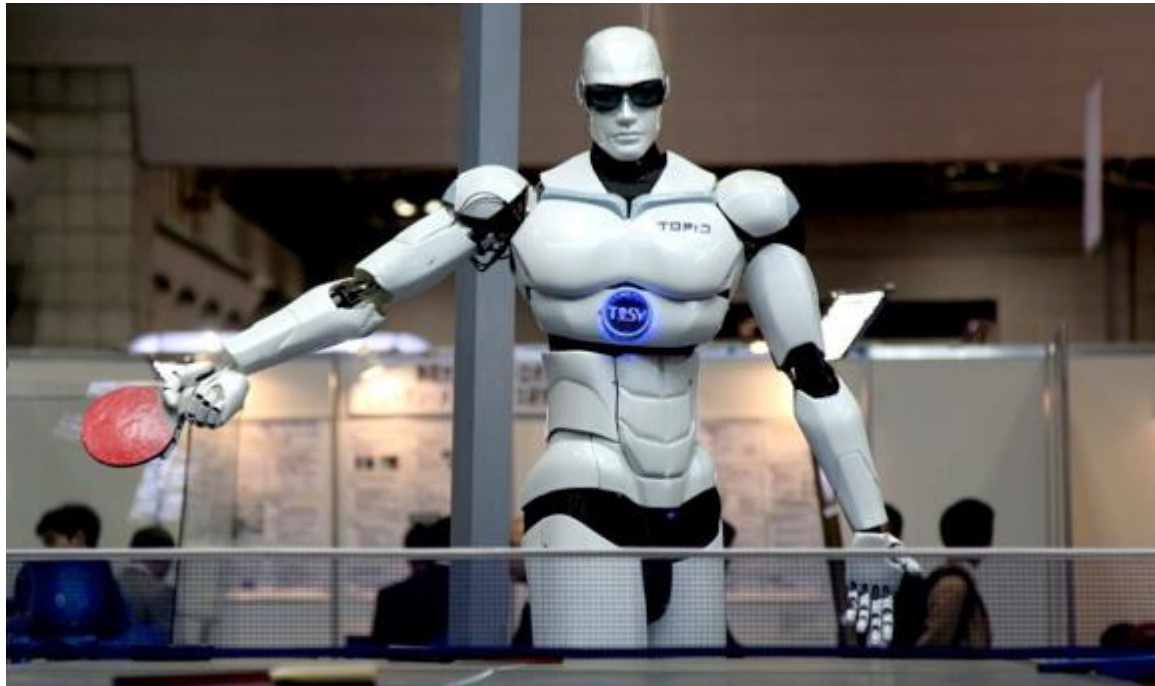
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THE FUTURE OF THE PRESENT

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Robot Olympics Planned for 2020 Powered by Japan's 'Robot Revolution' !!



Source: Jason Dorrier - Aug 02, 2014, SingularityHub

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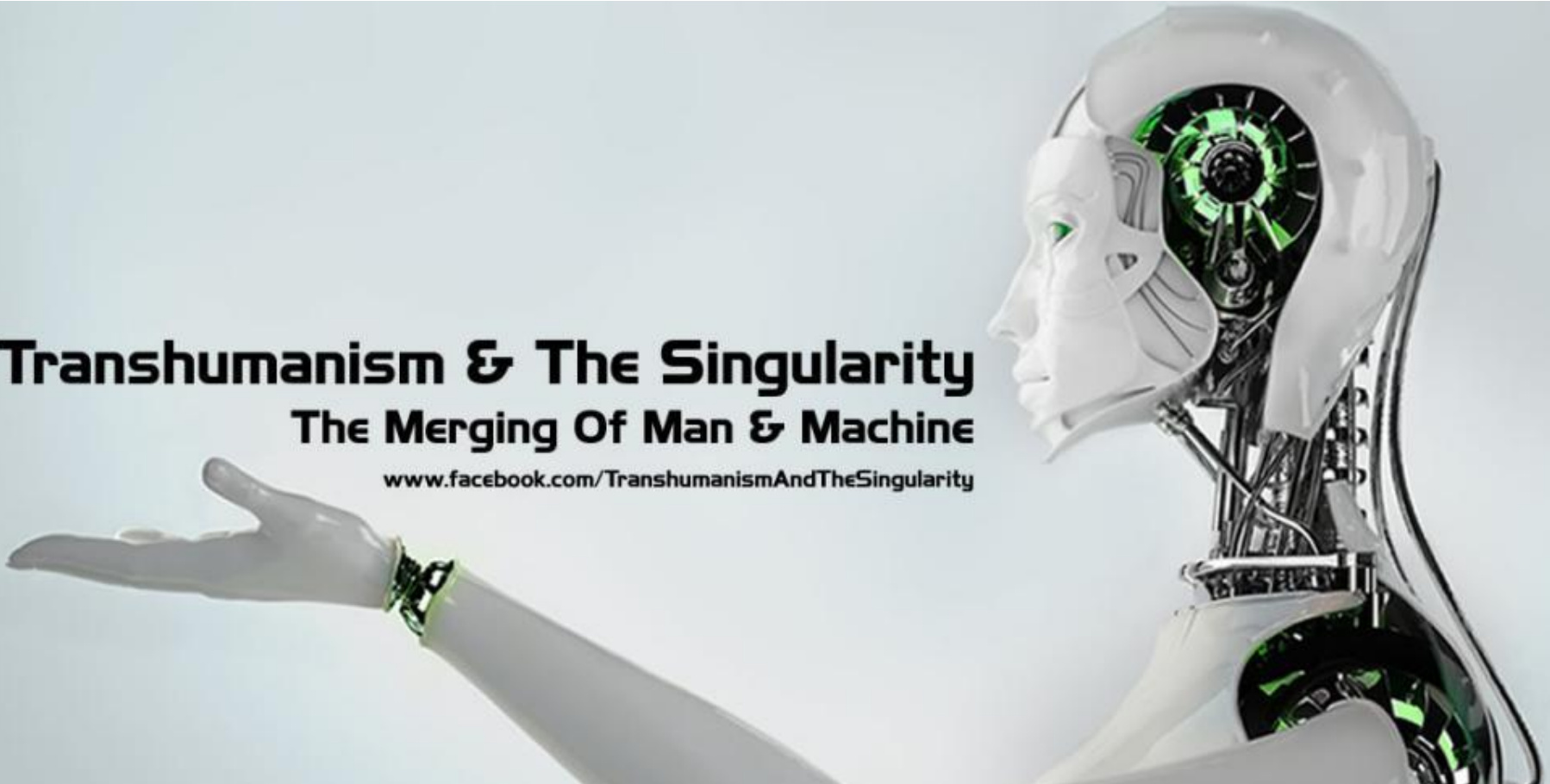
THE FUTURE OF THE FUTURE

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2029: the year when robots will have the power to outsmart their makers !! (Ray Kurzweil, Google expert in artificial intelligence)

Transhumanism & The Singularity **The Merging Of Man & Machine**

www.facebook.com/TranshumanismAndTheSingularity



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CONCLUSION

E S P R

- Big data and AI are breakthrough digital trends that are disrupting the whole business landscape and benefiting businesses that have already planned for this change upstream.
- We can assume that this combination will herald an age of outstanding innovations in technology. “Let’s just hope that the virtues of this union will outweigh the vices”.

Attitudes towards the future



- | | |
|-----------------------------------|-------------------|
| •Passive (ostrich) | Suffer the future |
| •Reactive (fire fighter) | Respond |
| •Preactive (insurer) | Prepare |
| •Proactive (builder) | Create |



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