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ERASMUS K2 « PASSPORT TO THE FUTURE »

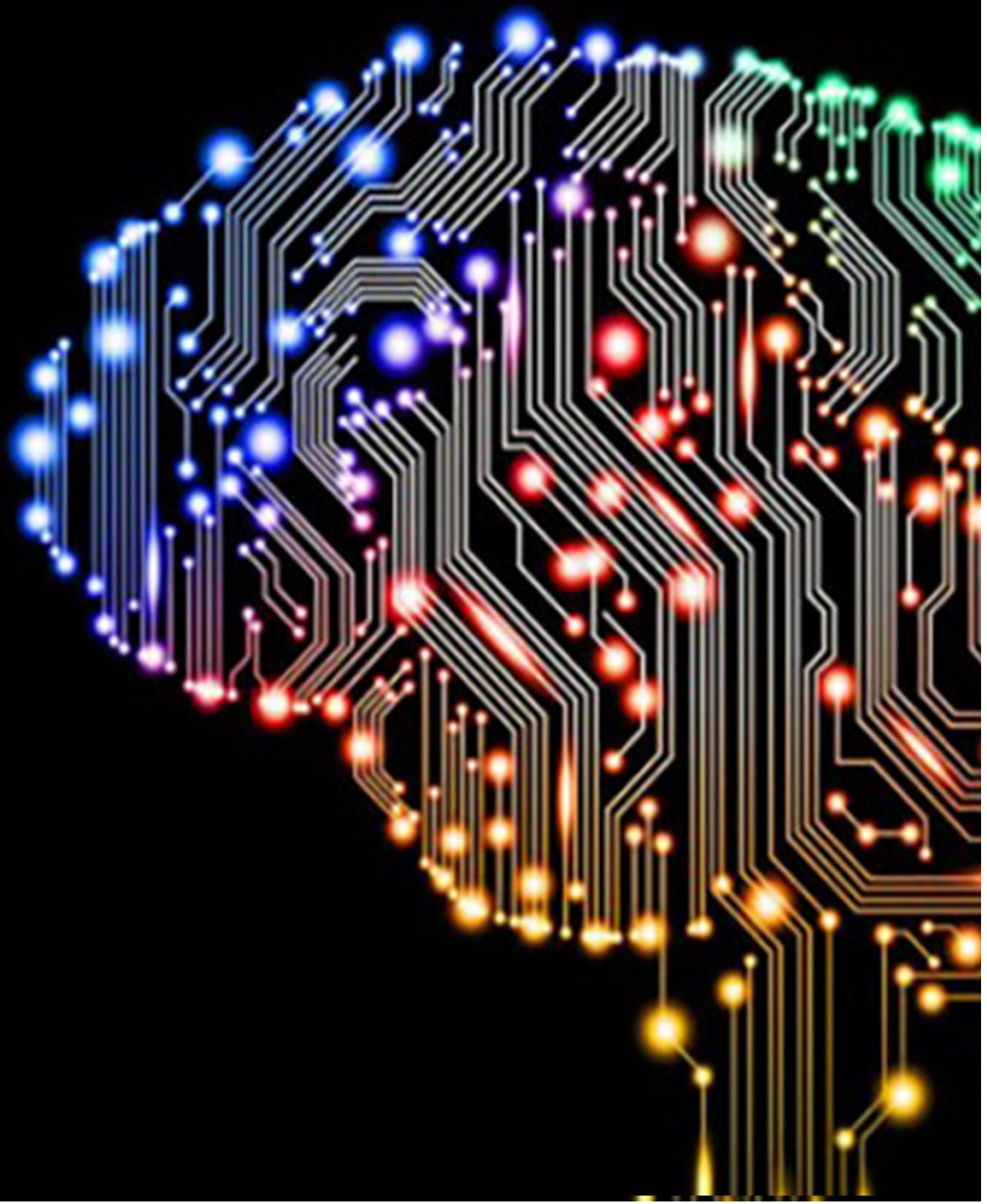
New Technologies in Different Branches of Science

SILALE 24-30 APRIL 2022

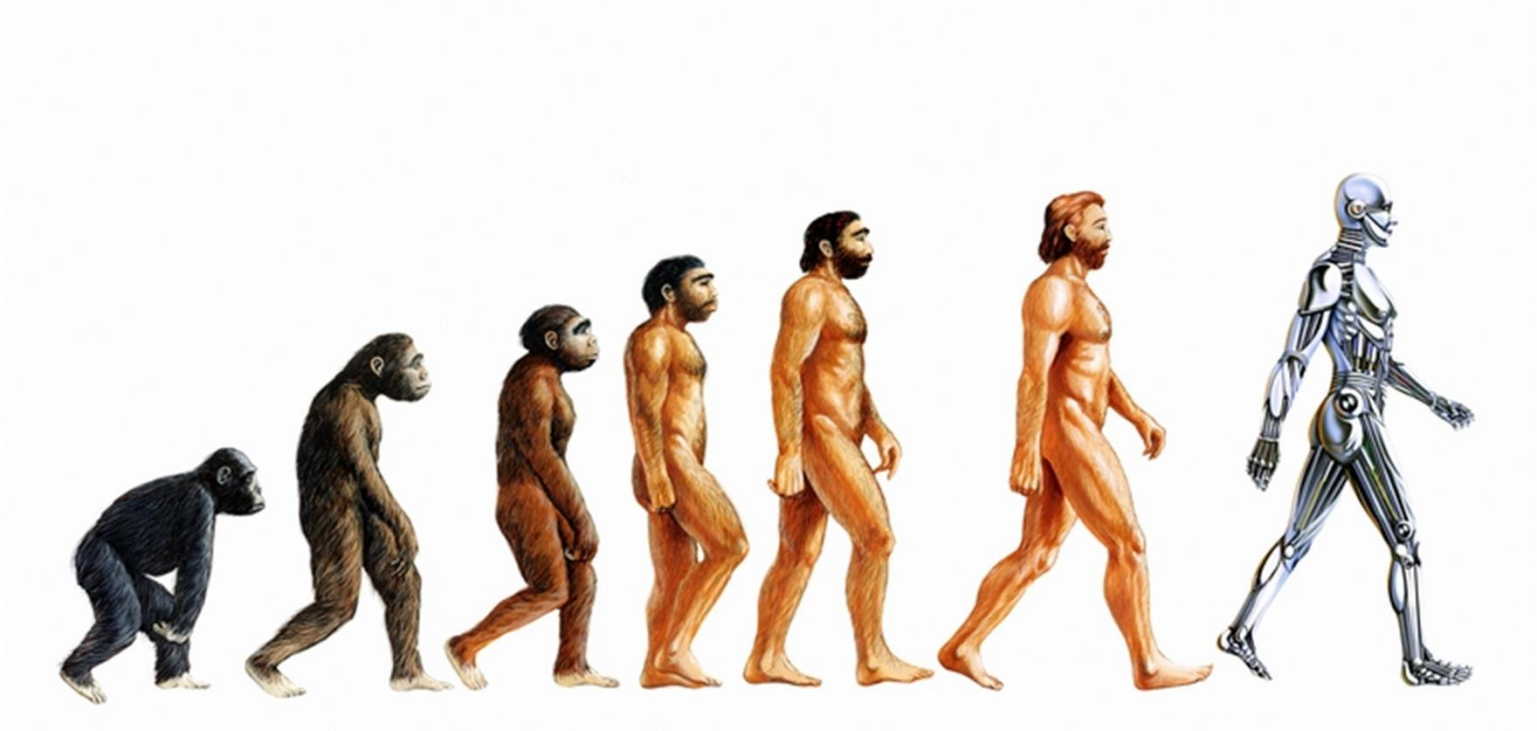
Co-funded by the
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of the European Union

ARTIFICIAL INTELLIGENCE

by Claudia Corradino
e
Vincenzo Sirugo

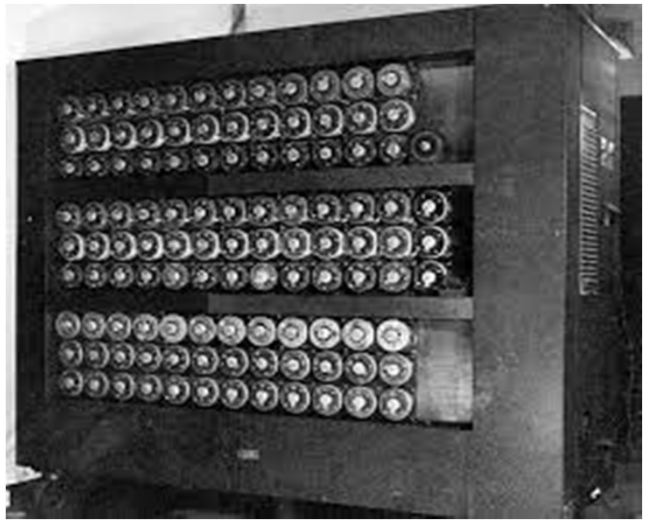


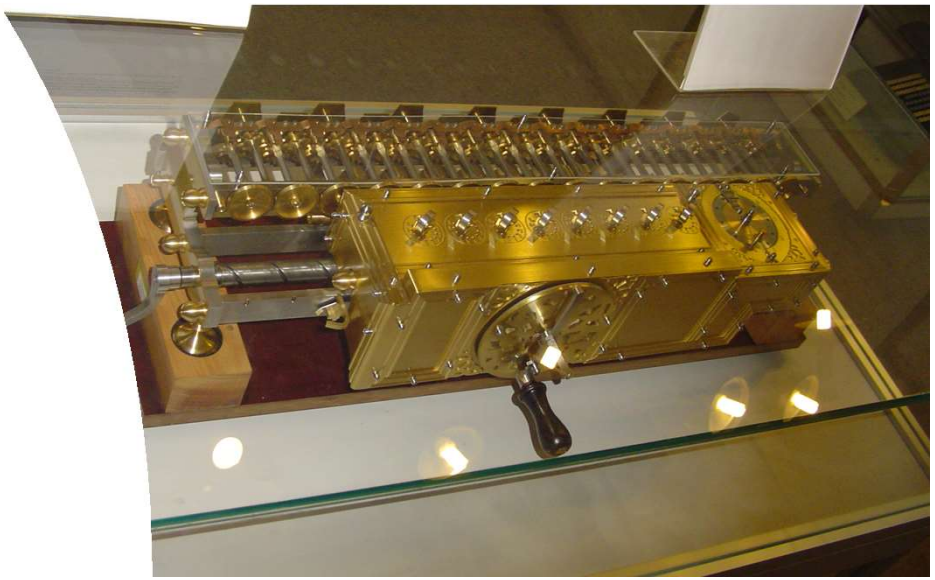
FROM THE MONKEY TO THE HUMANOID ROBOT



FAMOUS SCIENTISTS AND THEIR INTELLIGENT MACHINES

- Leibniz's stepped reckoner was the first calculator which could perform the four basic mathematical operations (1670).
- This machine can be seen in the Science Museum in Hannover, Germany





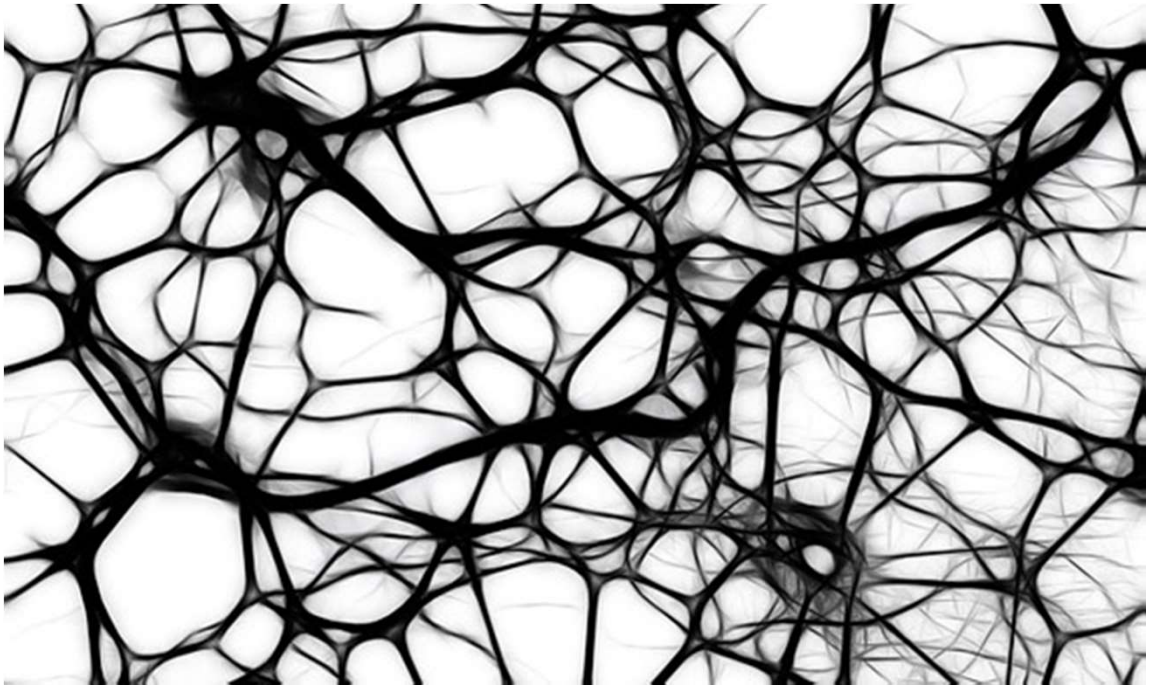
- Alan Turing's machine could read a series of 1s and 0s from a tape describing the steps needed to solve a problem, that was the first algorithm (1936).
- A. Turing is considered the father of Computer Science and Artificial Intelligence

WHAT IS ARTICIAL INTELLIGENCE?

- AI is intelligence demonstrated by machines which recreate the human thought process
- They replicate some elements of human intellectual abilities such as the ability to learn and to reason
- Research on Machine Learning (and Artificial Vision in general) has always tried to draw inspiration for the development of algorithms from the human brain.

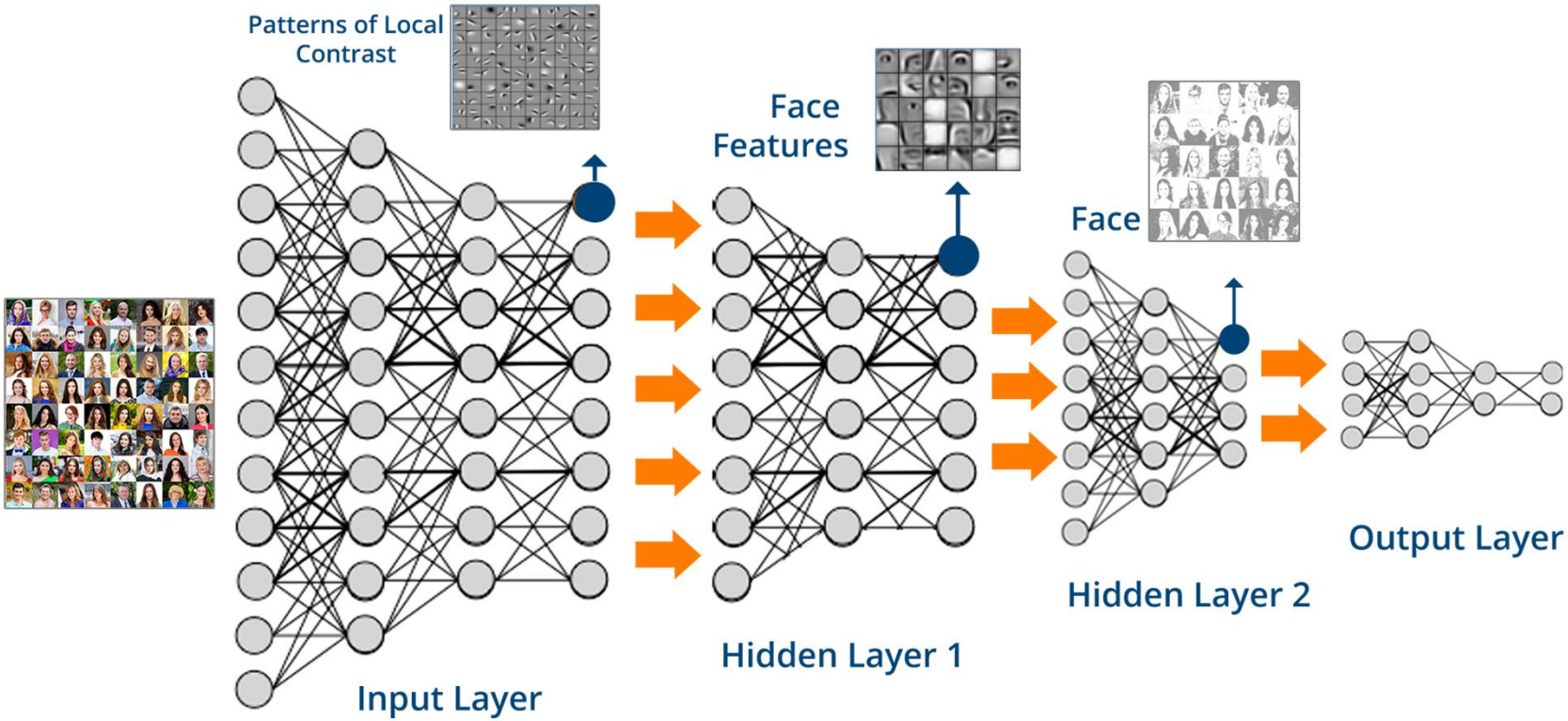


A net of neurons in the human brain

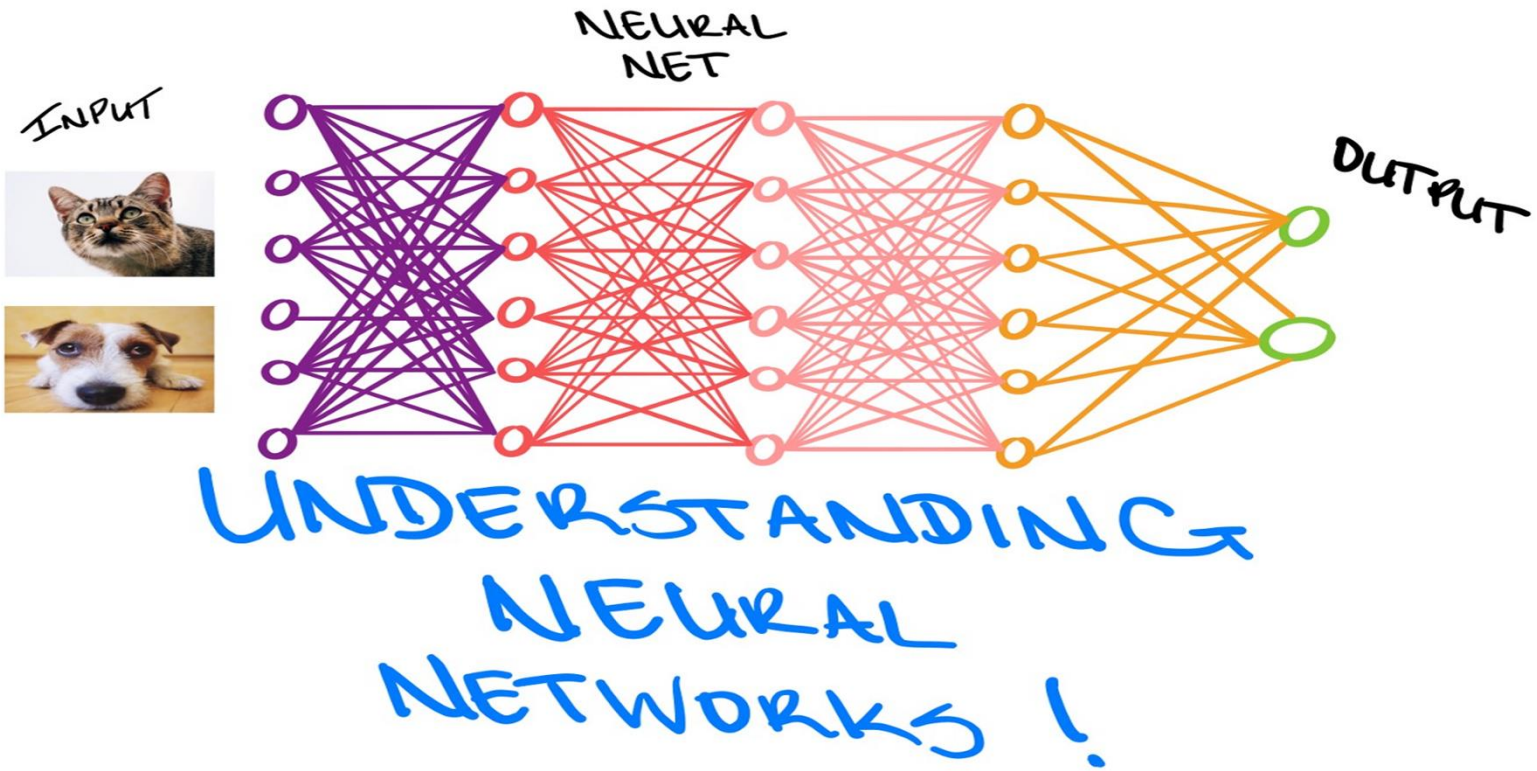


Neurons are cells that capture input signals, process them and send stimuli to the different parts of the human body

A scheme of an artificial neural net



Artificial neural networks (ANN) are based on the concept of "artificial neuron" or a structure that, similarly to the neurons of living beings, apply a non-linear transformation (called activation function) to the contributions of the different inputs of the neurons



Neural parts are made up of computations components and neural networks are these parts interconnected.

Neural networks pass data among themselves, gathering more and more meaning as the data move along and processing more complex data easily.

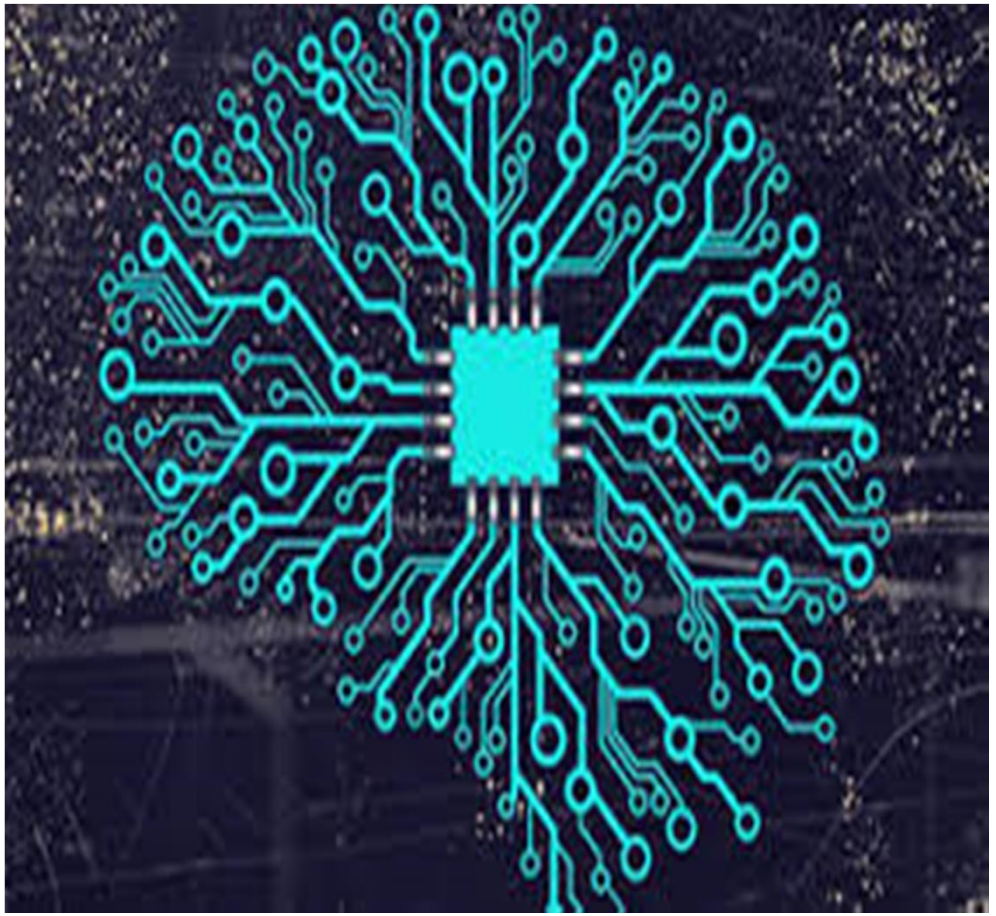
A neural net “learns “ by exposure to lots of inputs and corresponding outputs. Once trained , the neural net responds to an input with a likely output.

In fact, the information (input) is compared to a series of stored data and possible actions are considered .

It is predicted the most successful action (output) based on the collected information.

NEURAL NETWORKS AND DEEP LEARNING

- Neural Networks are better at handling ambiguity than rule-based systems
- Unlike rule-based systems, a neural network doesn't give definite answers, only the most probable answers (Some call this " fuzzy logic")
- Deep learning refers to using multi-layered neural networks to process data in increasingly complex ways and to perform tasks like speech and image recognition through the exposure to these vast amounts of data







APPLICATIONS OF ARTIFICIAL INTELLIGENCE





ARTIFICIAL INTELLINGENCE

Pros

Autonomus devices are used

- To work in dangerous environments (chemical/radioactive sites, damaged buildings etc.)
- to help elderly/disabled people
- To predict weather forecasts
- To carry out business transactions
- To perform complex procedures and operations in surgery
- To solve cases in criminal investigation
- To deliver food/ medicines/ other items in poor undeveloped areas

Cons

Autonomous devices cause

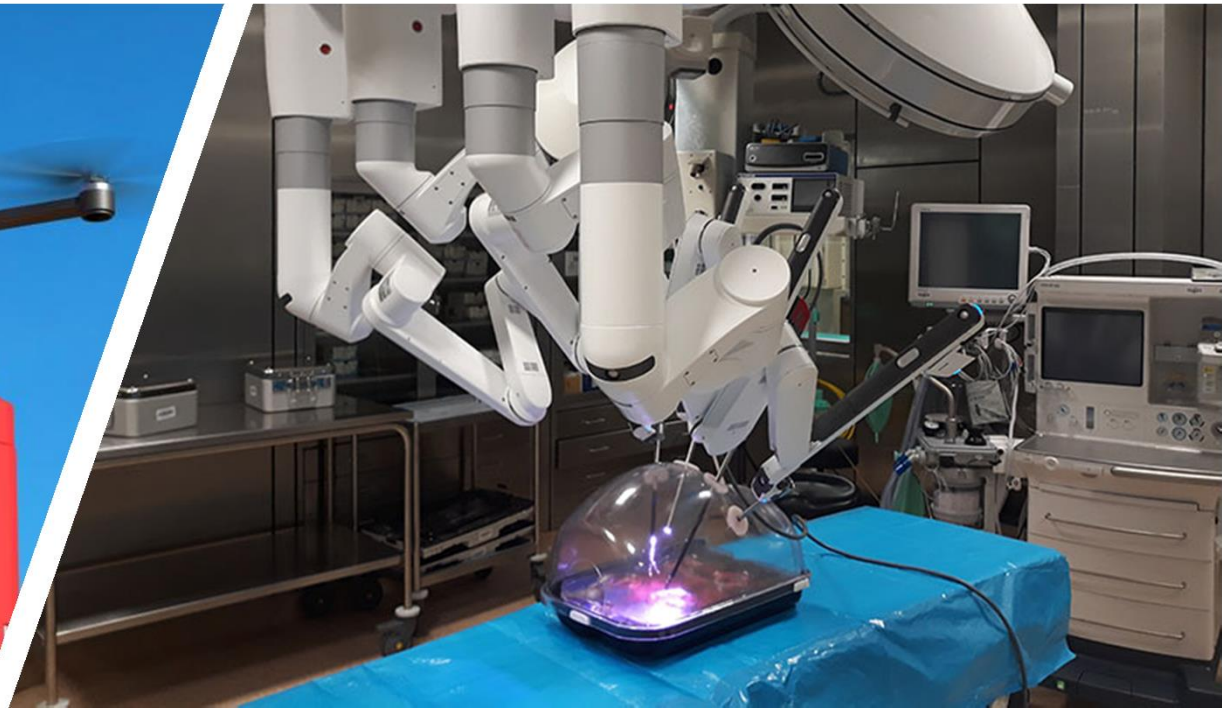
- A dramatic reduction of workforce
- unemployment
- Tecnology contolled by specialized powerful programmers
- Mass control
- The devolpment of autonomos super intellingent devices out of human control

IS THIS A HUMAN BEING?



video

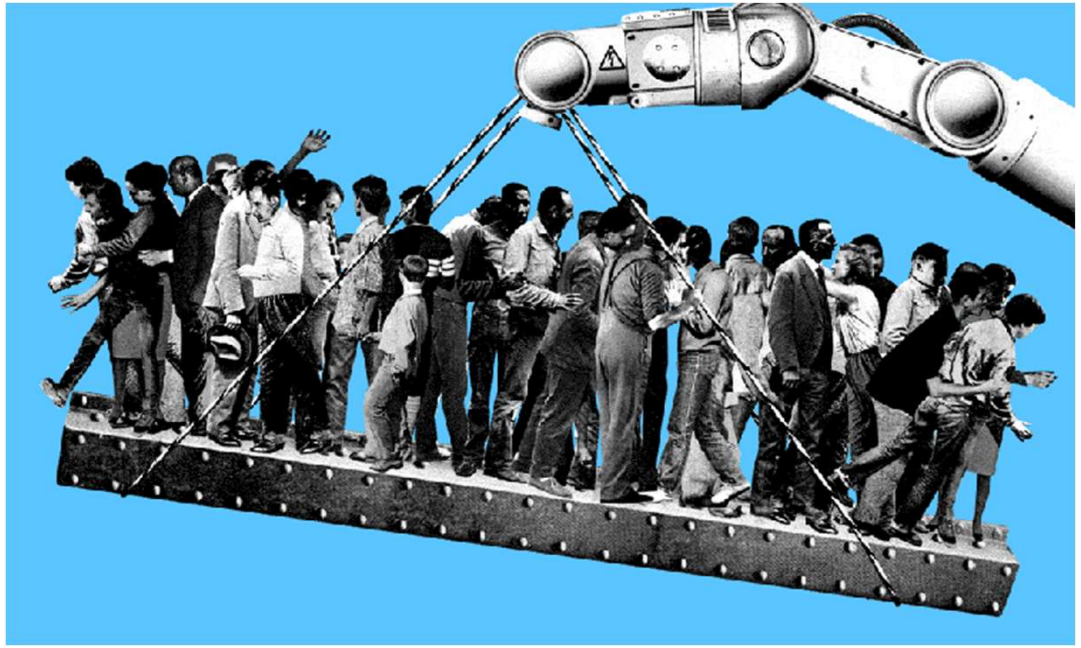


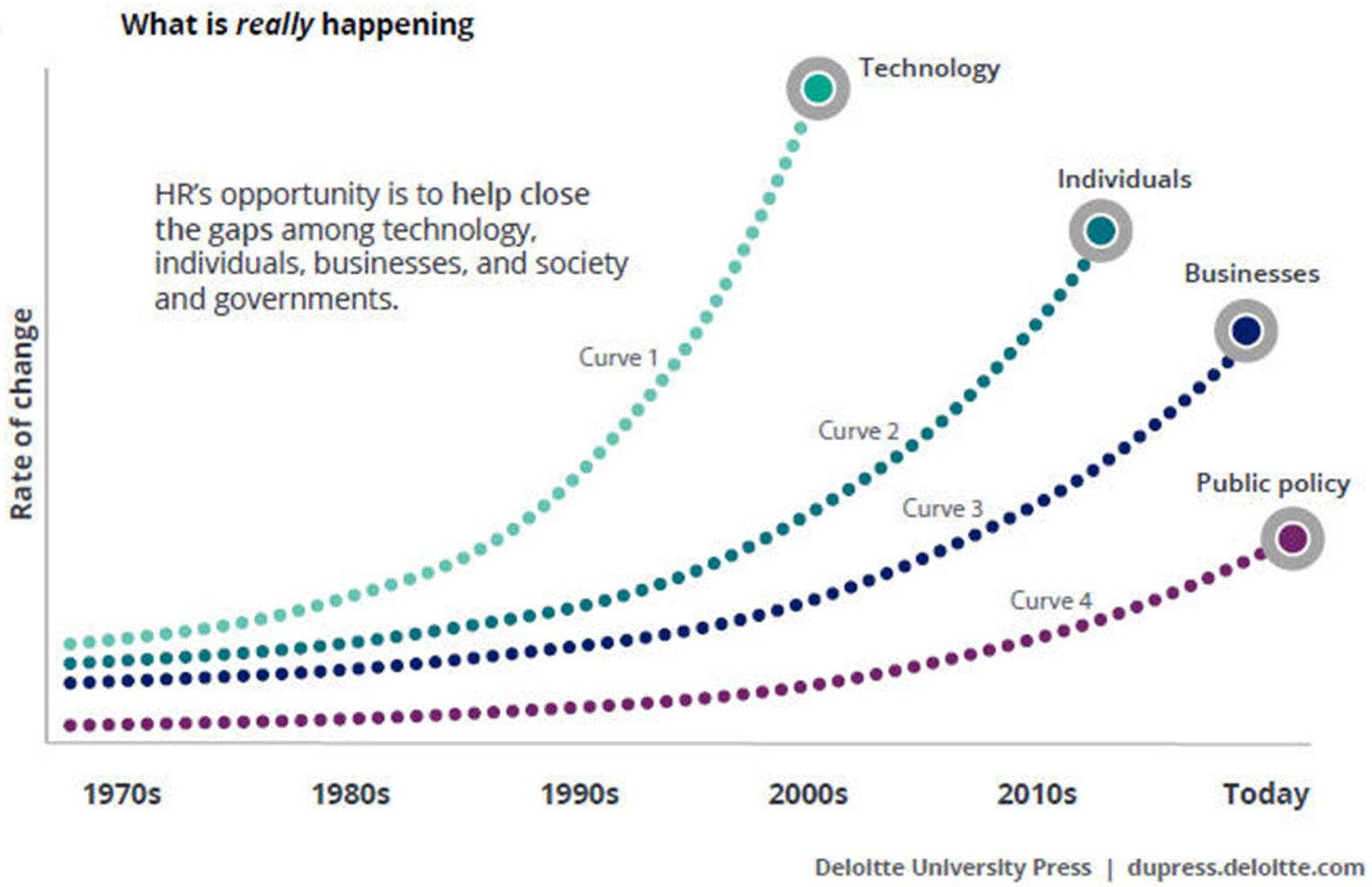


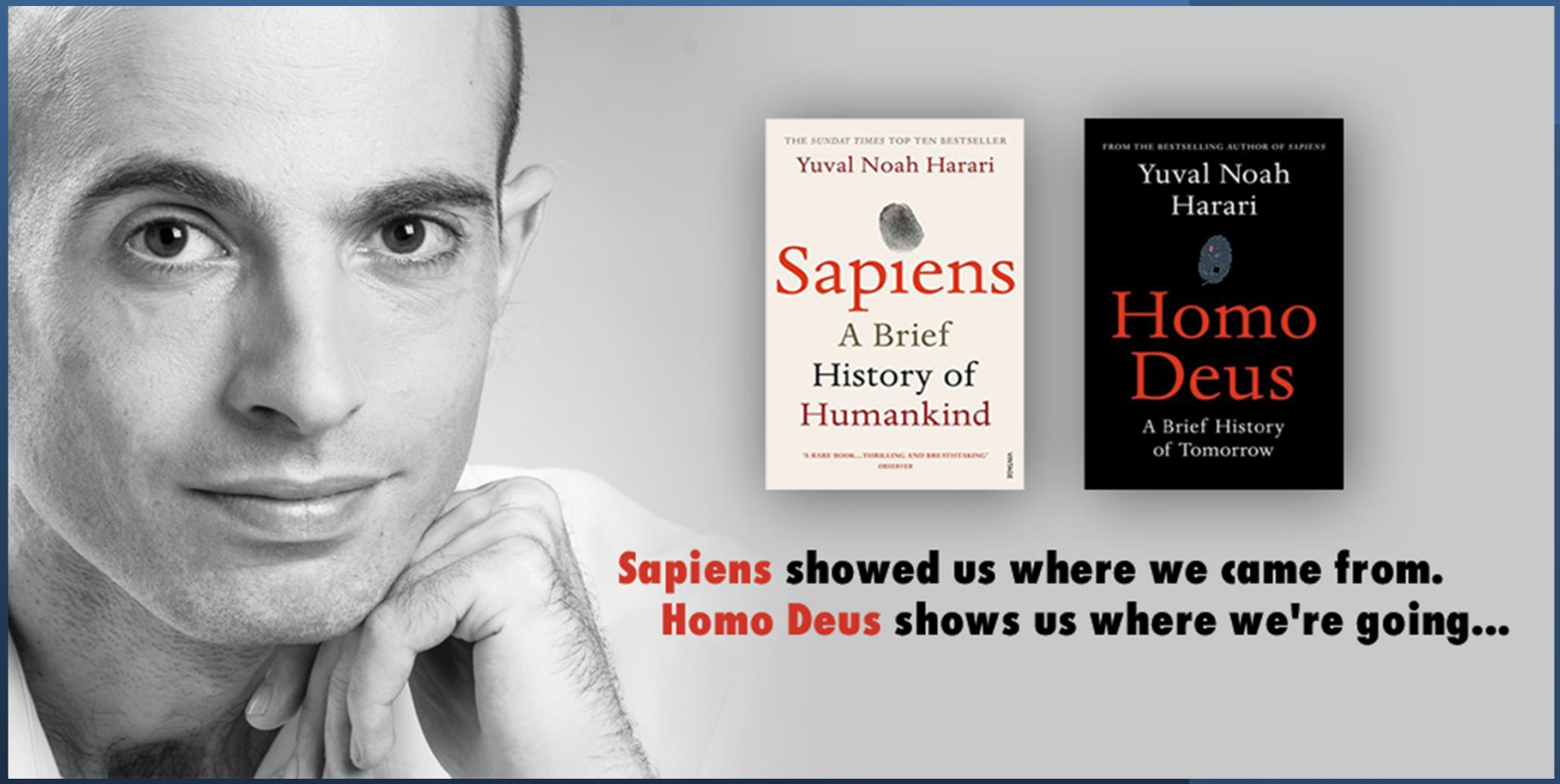

POLICE
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MR-E
1904

The rise of the useless class




What is *really* happening
HR's opportunity is to help close the gaps among technology, individuals, businesses, and society and governments.
Rate of change
Technology
Individuals
Businesses
Public policy
Curve 1
Curve 2
Curve 3
Curve 4
1970s
1980s
1990s
2000s
2010s
Today
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THE SUNDAY TIMES TOP TEN BESTSELLER
Yuval Noah Harari
Sapiens
A Brief History of Humankind
FROM THE BESTSELLING AUTHOR OF SAPIENS
Yuval Noah Harari
Homo Deus
A Brief History of Tomorrow
Sapiens showed us where we came from.
Homo Deus shows us where we're going...

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THANK YOU
FOR YOUR ATTENTION

