PRO.M.I.S.
Programma Mattone Internazionale Salute

CONFERENCE

"Artificial Intelligence and Chronic disease management"

ARITIFICIAL INTELLIGENCE AND PRIVACY IN eHEALTH

19 June 2018
Palazzo della Provincia Autonoma di Trento
P.zza Dante 15
TRENTO

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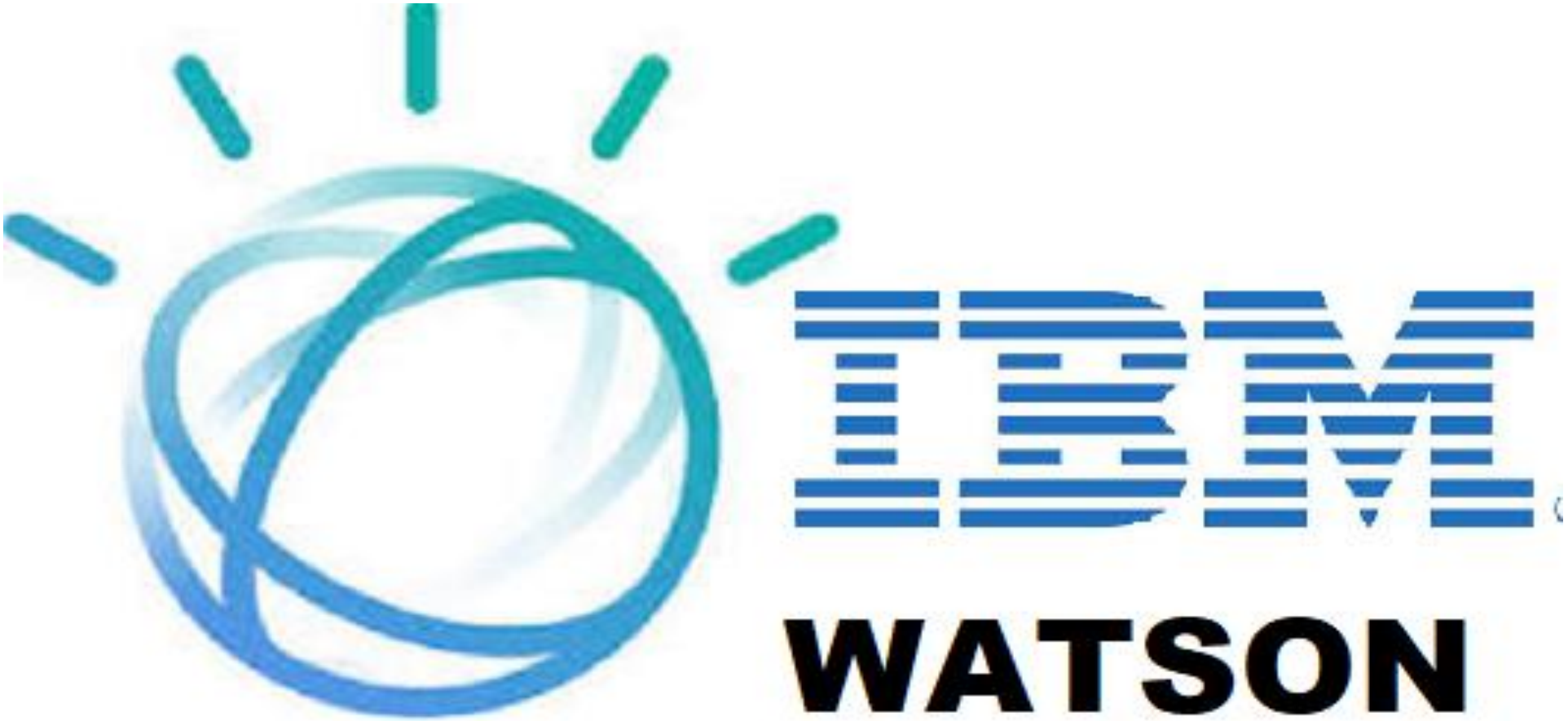
Artificial Intelligence: science fiction or reality?

Not all AI is created equal!

Artificial Intelligence

"An Artificial Intelligence (AI) is intelligence exhibited by machines. In computer science, an ideal "intelligent" machine is a flexible rational agent that perceives its environment and takes actions that maximize its chance of success at some goal. Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving" (Wikipedia.org)

- Main features:
  - Collection of large amounts of information
  - Ability to take autonomous decision/actions aimed at maximizing the chances of success



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AI in eHealth: two recent developments

- Rise of **Big Data**
  - Sources: Electronic Health Records, Medical literature, clinical trials, insurance claims data, pharmacy records, data entered by patients or recorded on fitness trackers, etc.

- The growth of **sophisticated machine-learning/artificial-intelligence** techniques
  - used to find complex patterns in data
  - “Black-box medicine”

Black-box: lack of trasparency

1. Organizational BB
2. Technical BB
3. Legal BB

Artificial Intelligence in eHealth

- **Predictive models**
  - obvious advantages in terms of prevention
- **Early diagnosis**
  - possibility to promptly act using the most appropriate care
- **Chatbot-based environments**
  - providing the right information to patients, accompanying them in their care process

AGID – White Paper

- *White paper on artificial intelligence at the service of the citizen*, v. 1.0 (2018)
- 9 challanges:
  - Ethics
  - Technology
  - Skills
  - Role of data
  - Legal context
  - Accompany the trasformation
  - Prevent inequality
  - Measure the impact
  - The Human Being

White Paper: the Legal Context

- Transparency of administrative acts
- Legal responsibility
- Data Protection
- Computer security
- Intellectual property

Manifesto for Intelligent Healthcare

- 8 Points in order to "*accompany the country in the challenge of digital health, and ensure that Italy can seize all the many benefits that come from the use of AI solutions".*

  - 5 - **The role of the physician must remain central to the implementation of AI, no machine will replace it**. The physician-patient relationship is fundamental

  - 6 – **Privacy, security and personal data** protection represent fixed points in any fields, especially in a sensitive area as healthcare

  - 7 - It is of primary importance to create the **skills of the future** which, thanks be to the development of AI, will be able to offer great opportunities of employment"


25 MAY 2018
General
Data
Protection
Regulation

Accountability

Transparency

Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679 (wp251rev.01)

GDPR: profiling and automated individual decision making

- Specific transparency and fairness requirements
- Greater accountability obligations
- Specificed legal bases for the processing
- Rights for individuals to oppose profiling
- If certain conditions are met, a need to carry out a Data Protection Impact Assessment (DPIA)

Specific provisions on automated decision-making (art. 22)

1. As a rule, there is a <u>prohibition</u> on a decision based **solely** on **automated processing**, including **profiling**, which produces **legal effects** or **similarly significantly affects** (par. 1)

2. There are exceptions to the rule (par. 2)

3. There should be measures in place to safeguard the data subject's rights and freedoms and legitimate interests (par. 3):
    1. The right to be informed
    2. The right to obtain human intervention
    3. The right to challenge the decision

The right to be informed (artt. 13–14)

- **Existence** of automated decision-making, including profiling
- **Meaningful** information about the logic involved
- **Significance** and the **envisaged** consequences of the processing

This right is related to the *Right of access* (art. 15, par. 1, lett. h)

The right to obtain human intervention and challenge the decision (art. 23, par. 3)

- *"the data controller shall implement suitable measures to safeguard the data subject's rights and freedoms and legitimate interests,* ***at least the right to obtain human intervention on the part of the controller, to express his or her point of view and to contest the decision****"*

- Human intervention is a key element.

A “right to explanation”?

- Explanation may occur:
  - *Ex ante*, prior to an automated decision-making taking place (*system functionality*)
  - *Ex post,* after the automated decision has taken place (*system funcionality* and the rationale of a *specific decision*)

- Recital 71: *“… should be subject to suitable safeguards, which should include specific information to the data subject and the right to obtain human intervention, to express his or her point of view, to obtain an explanation of the decision reached after such assessment and to challenge the decision”*

Special categories of data (art. 22 (4))

- Automated decision-making that involves special categories of personal data is only allowed under certain conditions:
  - the **explicit consent** of the data subject (art. 9, par. 2, lett. a)); or
  - processing necessary for reasons **of substantial public interest**, on the basis of Union or Member State law which shall be proportionate to the aim pursued, respect the essence of the right to data protection and provide for suitable and specific measures to safeguard the fundamental rights and interests of the data subject (art. 9, par. 2, lett. g))

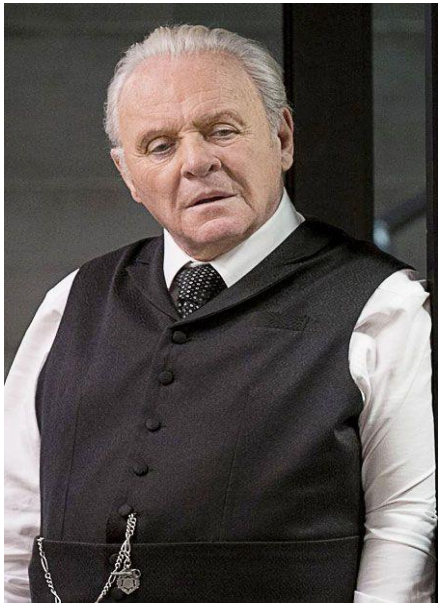
The Algorithm Dictatorship

Rodotà, *Il diritto di avere diritti*, Laterza, 2012

Cognitive ability and emotional capacity are not necessarily sistem biases

Westworld – Dr. Robert Ford

*"Evolution forged the entirety of sentient of life on this planet using one tool – **the mistake**"*



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