



# MEDINOV' 2019

**Artificial intelligence at the  
service of the medical profession  
and the patient in the digital era**

**François Commagnac**

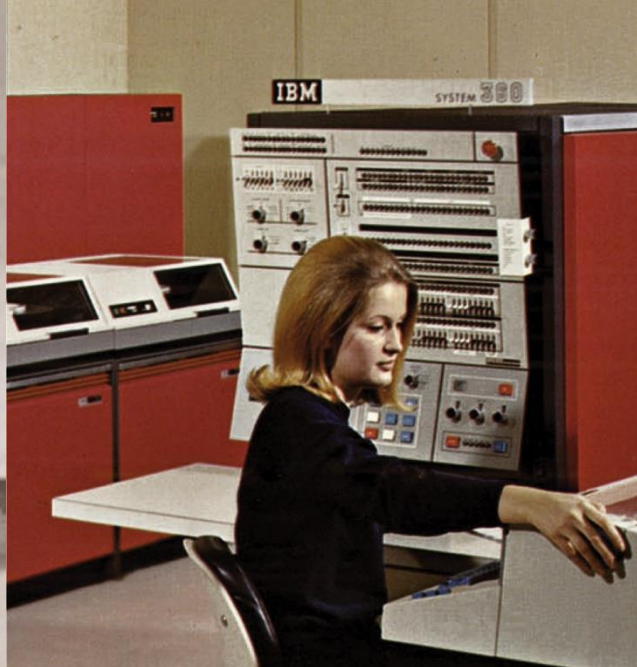
Healthcare & Life Sciences Business Architect  
& Consultant, IBM Certified





## Tabulators Era

1900 – 1940s



## Programmed systems Era

1950s – aujourd'hui



## Cognitive Systems Era

2011 –

In February 2011, IBM Watson played & won at Jeopardy!



# 3 capabilities differentiate cognitive systems from traditional systems...

- Supervised
- Not Supervised



Understand



Reason



Learn

- Strong
- Weak

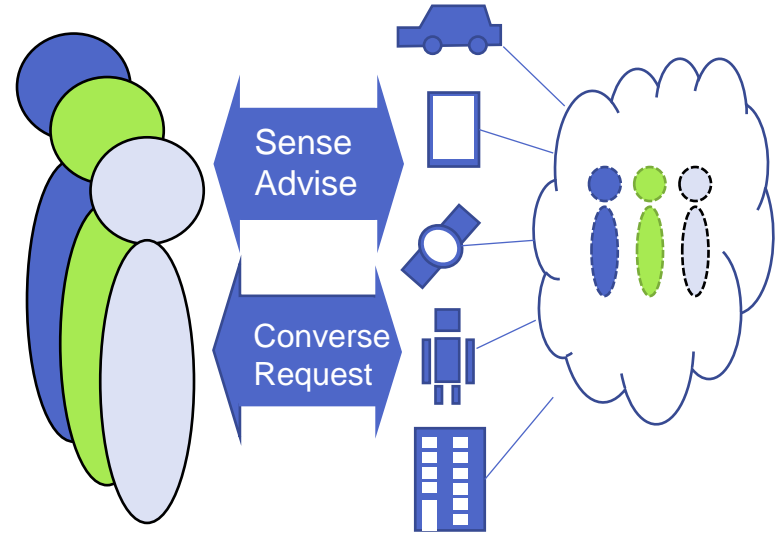
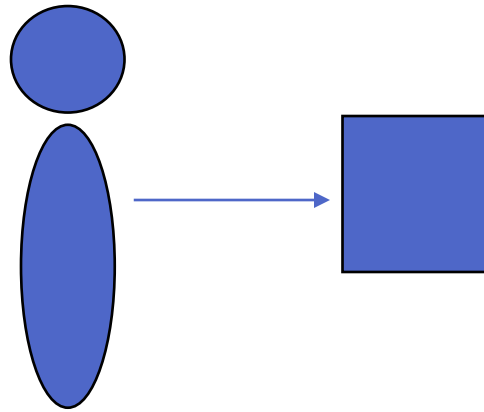
... enabling them to interact with humans

# Traditional Systems

**Human controls machines**

# Cognitive Systems

**Machine assists humans**



Cloud

Agile

Artificial Intelligence

Internet of things

Design Thinking

## Humans excel at:



Common Sense



Dilemmas



Morals



Compassion



Imagination



Dreaming



Abstraction

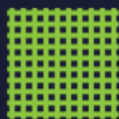


Generalization

## Cognitive systems excel at:



Natural  
Language



Pattern  
Identification



Locating  
Knowledge



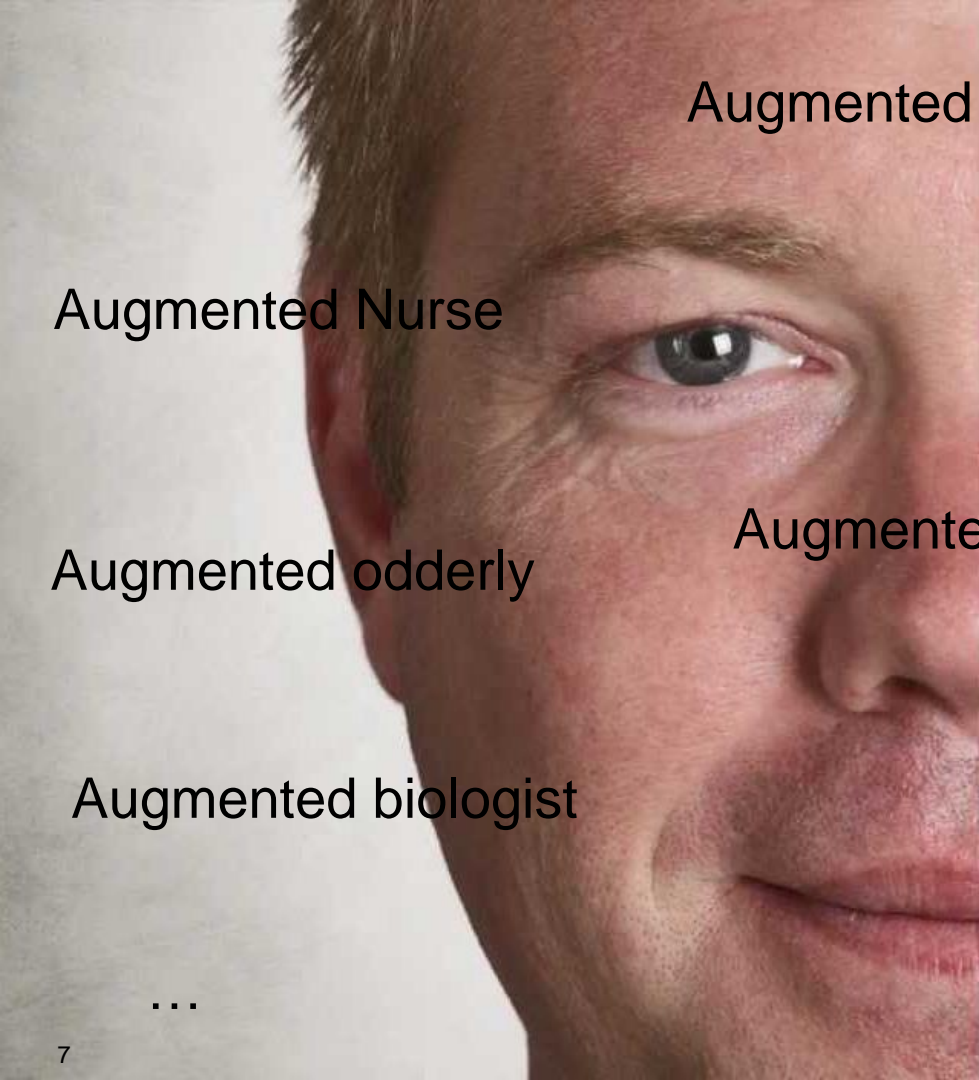
Machine  
Learning



Eliminate  
Bias



Endless  
Capacity



Augmented Physician

Augmented Nurse

Augmented Pharmacist

Augmented odderly

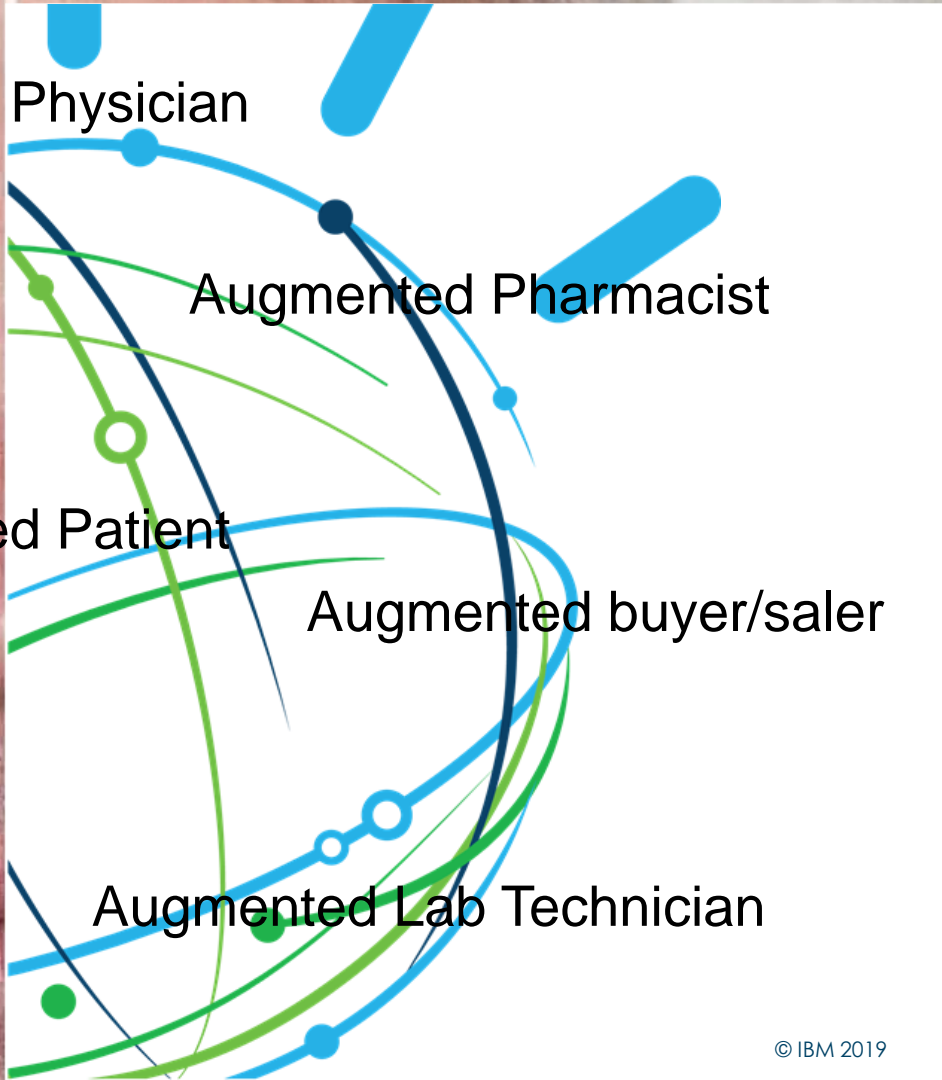
Augmented Patient

Augmented buyer/saler

Augmented biologist

Augmented Lab Technician

...



# Partnership with Guerbet Laboratory

Through this collaboration, Guerbet and IBM plan to co-develop innovative, clinical decision support solutions.

The first, called **Watson Imaging Care Advisor for Liver**, is planned to be a diagnostic support tool that will use artificial intelligence to **automate the detection, staging, tracking, monitoring, therapy prediction and therapy response** of primary and secondary liver cancer for clinicians.

Liver cancer is the second leading cause of cancer death worldwide.

<https://www-03.ibm.com/press/fr/fr/pressrelease/54144.wss>



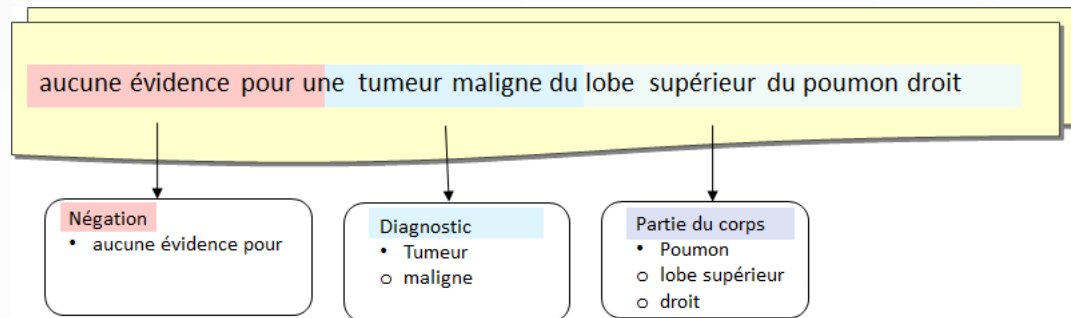


CHC & IBM built throughout 2017/2018 **Watson ICD-10 Coding Assistant** to assist coding of ICD-10 classification of diseases & report those codes to the Ministry of Health to get financing.

Assistant helps CHC resources to perform coding activity which was previously fully manual.

Using almost 2,000 anonymized medical documents provided by CHC, Watson has been trained to understand the French medical language used in ICD-10 coding

- **Accelerate innovation**
- **Improve productivity and efficiency:** 40% increase of productivity in relation to the coding work
- **Reduce costs**
- **Make better decisions**
- **Increase revenue**

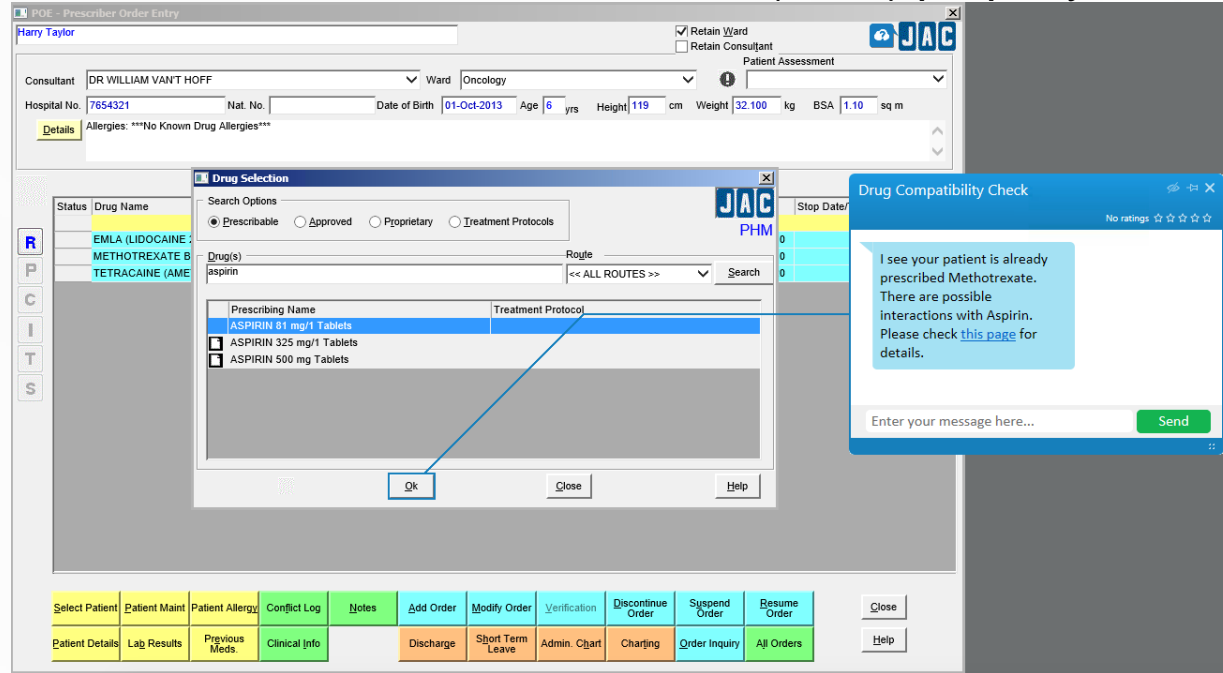


<https://www.ibm.com/blogs/client-voices/hospital-gains-productivity-with-ai/>

# Digital Coach in French Hospital

The Digital Coach has been implemented & deployed in a French Hospital to be an intelligent “in-application” digital agent that supports clinicians, doctors, nurses and pharmacists to ensure they use their Electronic Medical Record (EMR) properly and drive adoption.

The Coach looks completely integrated in the EMR but is actually seating on top. It’s personalized. New features can be added extremely quickly.



**Let me introduce to your  
next best programmer**



# Conclusion: IBM Principles

## ***Purpose***

Watson is an augmented intelligence tool. The objective is that it can support and guide the human in his decisions and in no case replace him.

## ***Transparency***

Your data is your data! IBM is transparent about the training system of our cognitive tools and data confidentiality.

## ***Skills***

AI systems are human-trained and support human professionals, leading to "new skills".

**Thank you !**

