

Pour recevoir la lettre des « Lundi de la cybersécurité »
Mail à : gerard.peliks@noos.fr

Bon
anniversaire à
Louis POUZIN

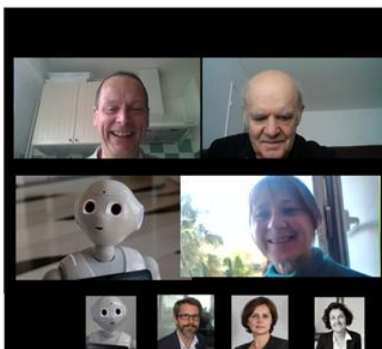


20 avril 2020
à partir de 18h00



Webinar

Cette fascinante IA dans l'industrie
Risques et Accompagnement



Organisés par :

Béatrice Laurent et
Gérard Péliks

Intervenants :

Céline Barbosa, Juriste, membre du CEFYS et de l'ARCSI

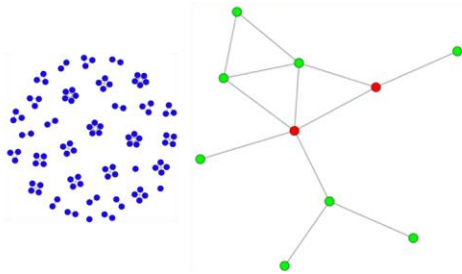
Sabine Marcellin, Avocate au barreau de Paris, cofondatrice du cabinet Aurore Legal

Ghislain de Pierrefeu, Centralien, Directeur Associé chez Wavestone en charge de l'IA

Jean Magne, Ancien commandant de sous-marin et consultant manager chez Wavestone



Lundi 11 mai 2020
à partir de 18h00

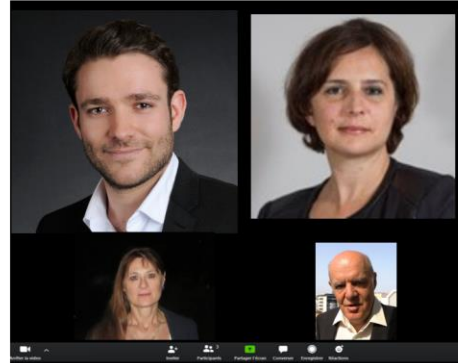


En visioconférence

Protection des intérêts vitaux, modélisation de la propagation et libertés fondamentales : quelle place pour la cybersécurité dans la lutte contre le COVID-19 ?

Maxime Cartan : Président de Citalid, membre de l'ARCSI

Céline Barbosa : Juriste, membre du CEFCYS et de l'ARCSI



Définitions

- Intelligence artificielle :
 - Référence à « intelligence »
 - Machine learning, data mining...
 - Par extension, « Faire faire aux machines des activités que l'on attribue généralement aux animaux et aux humains » (Yann LeCun)
- Intelligence humaine : 9 types selon Gartner
 1. Logique,
 2. linguistique,
 3. kinesthésique,
 4. spatiale,
 5. musicale,
 6. interpersonnelle,
 7. intrapersonnelle,
 8. naturaliste,
 9. existentielle



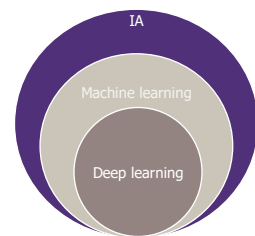
RBC – INNOVATION WEEK – DATA MONETIZATION

AI vs Data-valorization ? An Introduction

Artificial Intelligence is a scientific field based on mathematics, algorithmics and computer science. The goal is to make a program able to **perform a task normally requiring human intelligence** : decision-making, speech recognition, visual perception...

*AI is the planet we're headed to.
Machine learning is the rocket that's going to get us there. And Big Data is the fuel.*

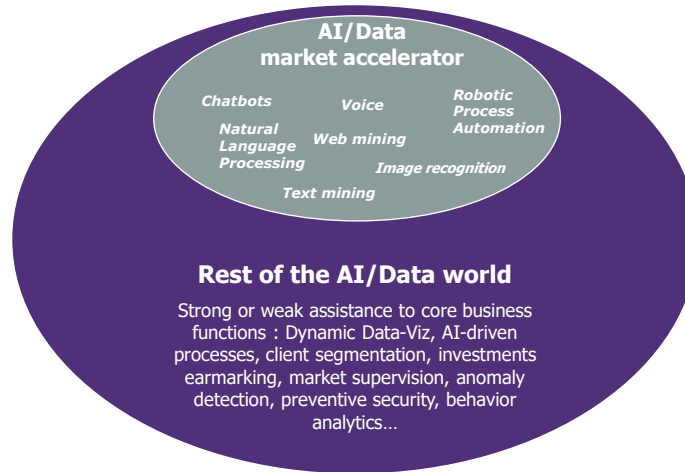
Pedro Domingos – Washington university



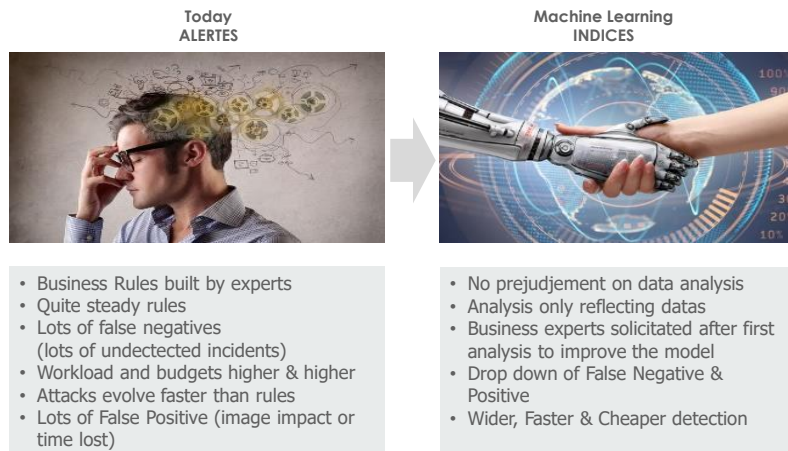
First learning algorithms appeared as soon as the mid-20th century, initiated by the work of Turing and Shannon. Neural networks originate in the 80's. But we had to wait for the 2010's to take advantage of them, **thanks to the massive growth of data and the power of computers.**

From an industrial perspective, we don't really care of what is AI...and the only real question is
« how can I leverage business value from data ! »
 (The best algorithm is the one answering a need...not the « rocket science one »)

The hottest and loudest topics are only a small fraction of the potential Use Cases of Data-valorazation



Paradigm change: from « Alerts » to « Indices »

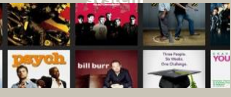


IA main technological fields

Machine Learning Machine Learning is a subset of AI which enables the computer to act and make data-driven decisions to carry out a certain task.	Natural language processing Natural language processing (NLP) is a subfield of artificial intelligence concerned with the interactions between computers and human natural languages.	Time series forecasting Time series forecasting is an artificial intelligence technology for the prediction of events through a sequence of time.	Recommender system A recommender system is a tool that seeks to predict the "rating" or "preference" a user would give to an item.
Computer vision Computer vision is a field of artificial intelligence that works on enabling computers to see, identify and process images the same way that human vision does.	Speech processing Speech processing is the study of speech signals and the processing methods of these signals. The main studied problematics are speech to text and text to speech.	Anomaly detection Anomaly detection is the identification of data points that do not conform to the expected pattern of a given group.	Deep Learning Deep learning is a subset of machine learning that regroup methods based on learning complex data representations.

This segmentation represents main AI categories but does not claim to be neither exhaustive nor perfect (e.g. some segmentations could also add « RPA » or « Chatbots »)

IA main technological fields – Examples in day-to-day life

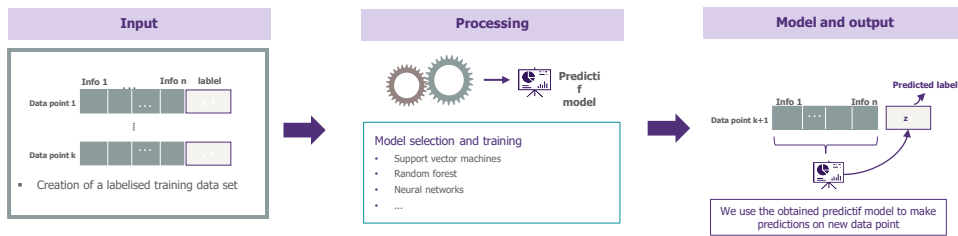
Machine Learning  BRITISH AIRWAYS <i>Dynamic ticket pricing</i>	Natural language processing  amazon <i>Customer service chatbot</i>	Time series forecasting  MÉTÉO FRANCE <i>Weather forecasting</i>	Recommender system  NETFLIX <i>Film and series recommendation</i>
Computer vision  f <i>Facial recognition</i>	Speech processing  Apple <i>Apple assistant « siri »</i>	Anomaly detection  PayPal <i>Fraud detection in transactions</i>	Deep Learning  Google <i>Autonomous driving</i>

Supervised Machine Learning

Definition and principle

Supervised machine learning is a subset of artificial intelligence where the computer is presented with examples of inputs and their desired outputs. The goal of the algorithm is to learn a general formula which maps inputs to outputs. The given output is called a "label".

Supervised learning can be used either in regression tasks (where the label is a continuous value, e.g the price of something) or classification tasks.



Unsupervised Machine Learning

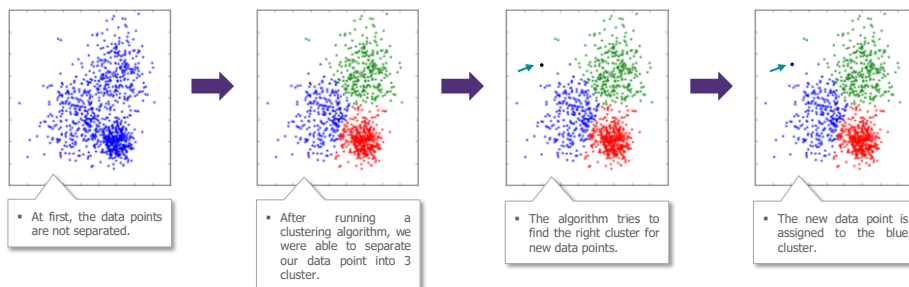
Definition and principle

Unsupervised machine learning is another type of machine learning where no labels are given to the program.

Instead of generalizing, the goal of an unsupervised machine learning algorithm is to find structure and relationship between the data points.

Unsupervised machine learning is mainly used in clustering tasks (repartition of data points into k cluster).

Unsupervised machine learning key steps



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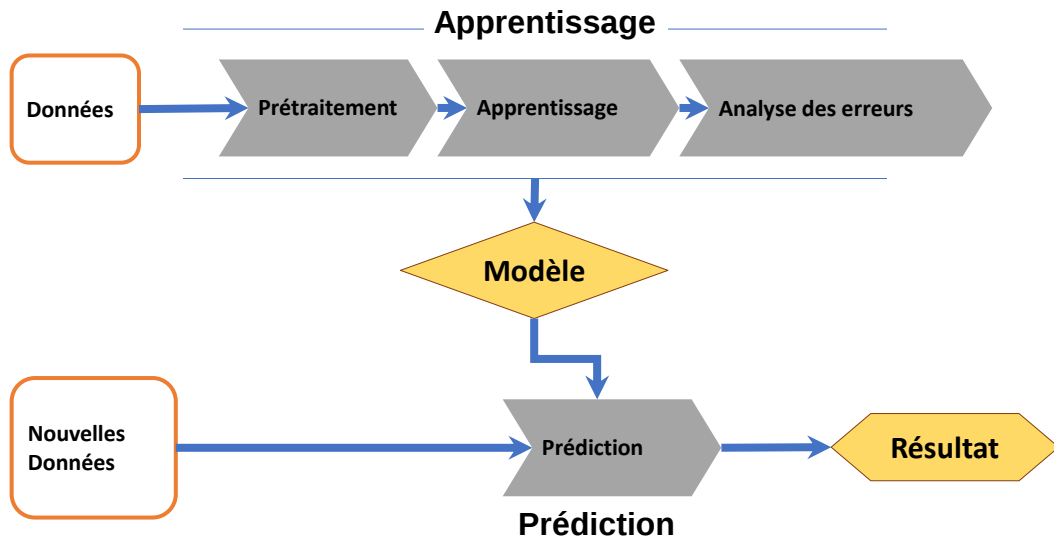
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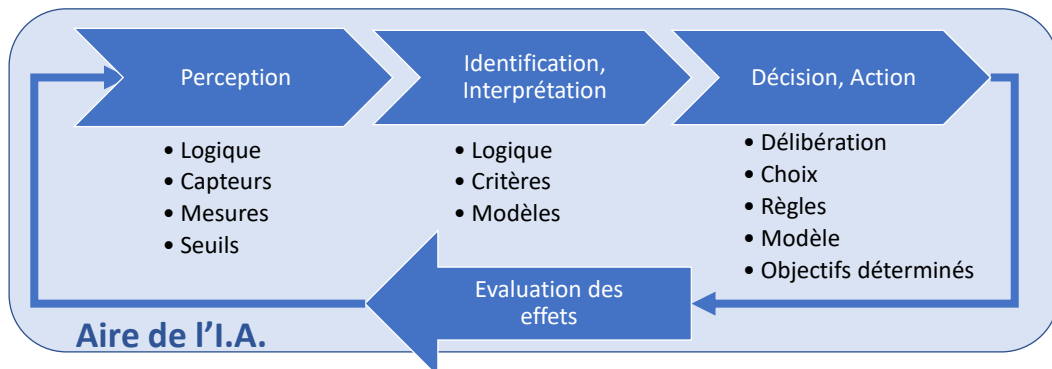
* Partners

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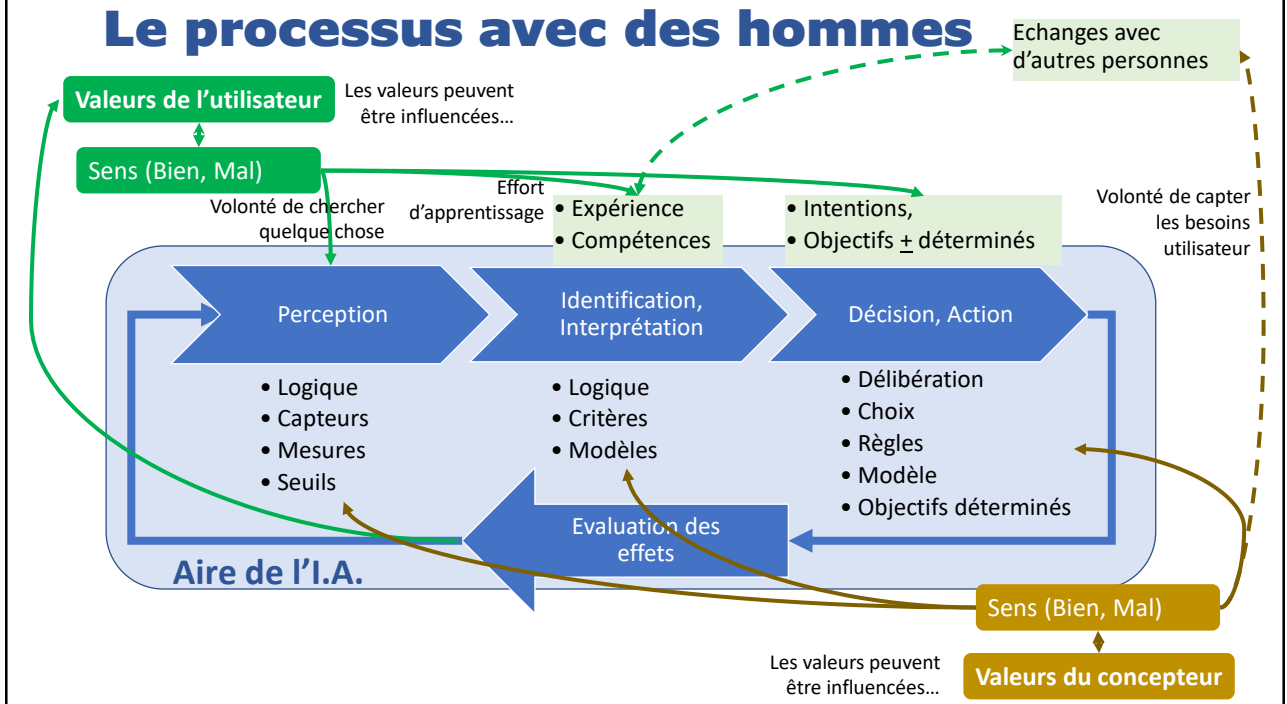
Principes de l'apprentissage par des machines



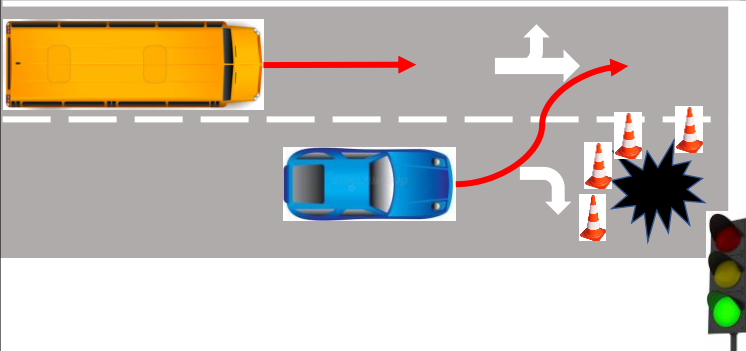
Le processus « sans état d'âme »



Le processus avec des hommes



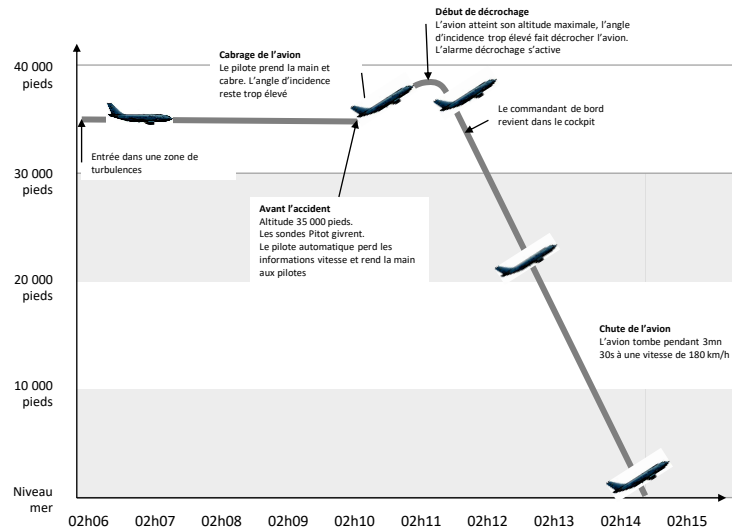
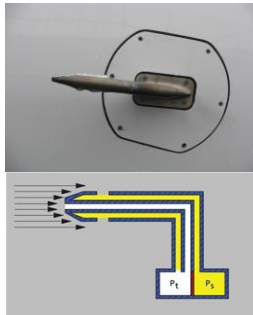
Accident Google car



<https://www.theverge.com/2016/2/29/11134344/google-self-driving-car-crash-report>

Les lundis de la cybersécurité

L'accident du vol AF 447 (Rio – Paris)

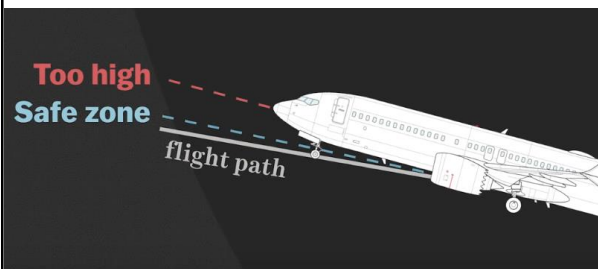


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Les évolutions du Boeing 737 Max 8

Conséquence de la mise en place des réacteurs CFM LEAP 1 : l'assiette positive peut entraîner un décrochage.

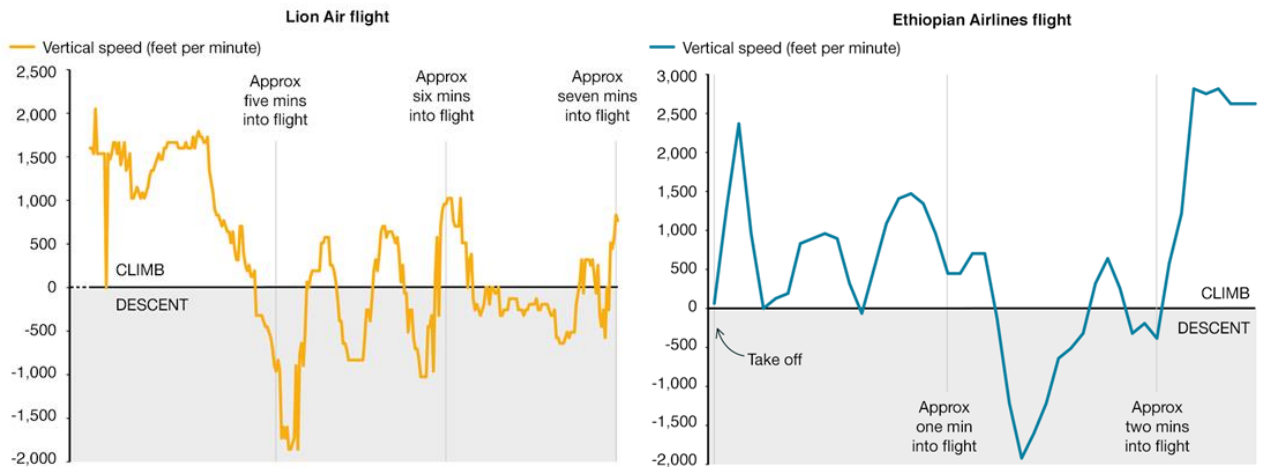
Solution, pour que l'avion se pilote comme les autres Boeing 737 : mise en place du MCAS qui compense l'effet des réacteurs par une action sur la stabilisation. On ramène le nez vers le bas.



Les lundis de la cybersécurité

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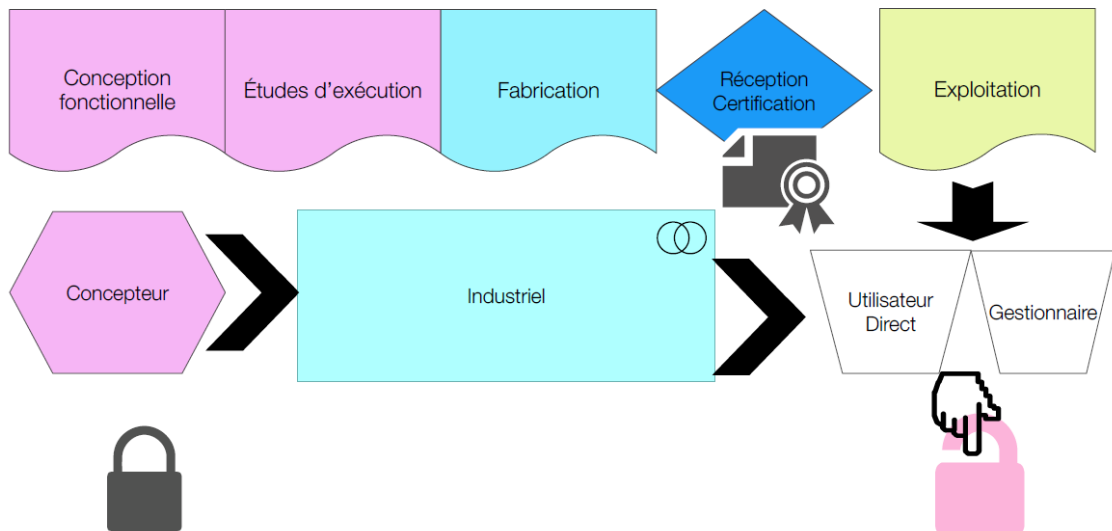
Les turbulences en vitesse verticale dûes aux MCAS



Les lundis de la cybersécurité

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Limites du Security by design et IA



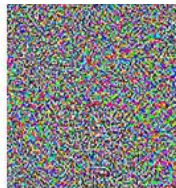
Applications de l'IA à la médecine

- Diagnostiquer des tumeurs ou des lésions (machine learning → reconnaissance d'images, radiographie ciblée et 3D...)
- Opérer (microchirurgie fine, précise, ...)
- « Réparer des humains » avec des prothèses (qui s'adaptent, redonner la sensation du toucher, ...)
- Suivre des patients à distance, avoir un relevé temps réel
- Prédire la propagation d'épidémies
- Entraîner des chirurgiens sur des corps « virtuels », opérations à distance...



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Leurrer la machine ?

+ ϵ 

=



"panda"

57.7% confidence

"gibbon"

99.3% confidence



Merci de votre
attention

Je renvoie à « parlez
vous cerveau ? » du
docteur Lionel
Naccache

Jacques Pignault - Jean Magne - Bertrand Foy

Fascinante IA



Boleine