

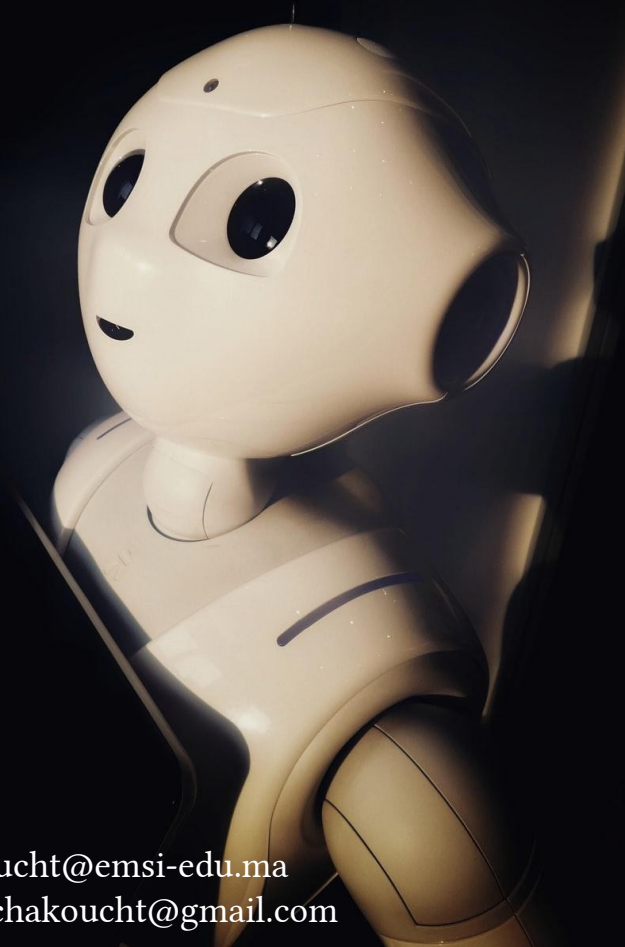


ML / DL

Apprentissage Automatique / profond

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- Introduction
- Présentations
- Structure, Objectifs, et Déroulement du Cours
- Vos Attentes?
- Discussion Ouverte (AI)



“

Whoever leads in AI will rule the world

Vladimir Putin

”



We're at the beginning of a golden age of AI. Recent advancements have already led to invention that previously lived in the realm of science fiction—and we've only scratched the surface of what's possible.

Jeff Bezos, Amazon

“

AI is a fundamental risk to the existence of human civilisation.

Elon Musk, CEO of Tesla and SpaceX

”



AI is the new
Electricity

Andrew Ng, Coursera

Un peu d'histoire

-70 années
Racines de l'IA



-2.5M ans

Premier Humain

-500 ans

Newton

Révolution scientifique : Copernic - Galilée -

+industrialisation

R. Industrielle

Muscle →

Machine

IA

Cerveau →

Machine



Un peu d'histoire

-500 ans
Révolution scientifique

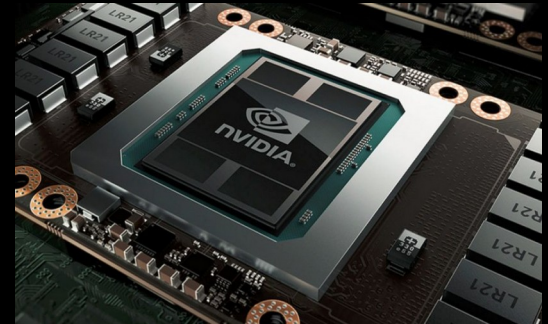
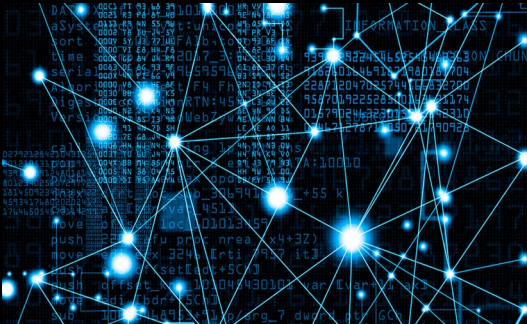
-70 années
Racines de l'IA



++ ALGORITHMES

++ DATA

++ PUISSANCE DE CALCUL



Un peu d'histoire

-70 années
Racines de l'IA



Alex Net 2012 Alpha Go 2017 ChatGPT 2022

Prix de Turing 2019 Nobel 2024

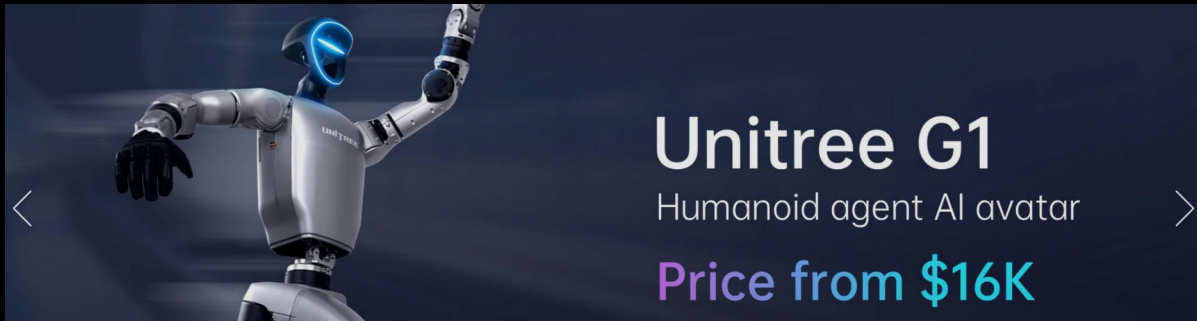
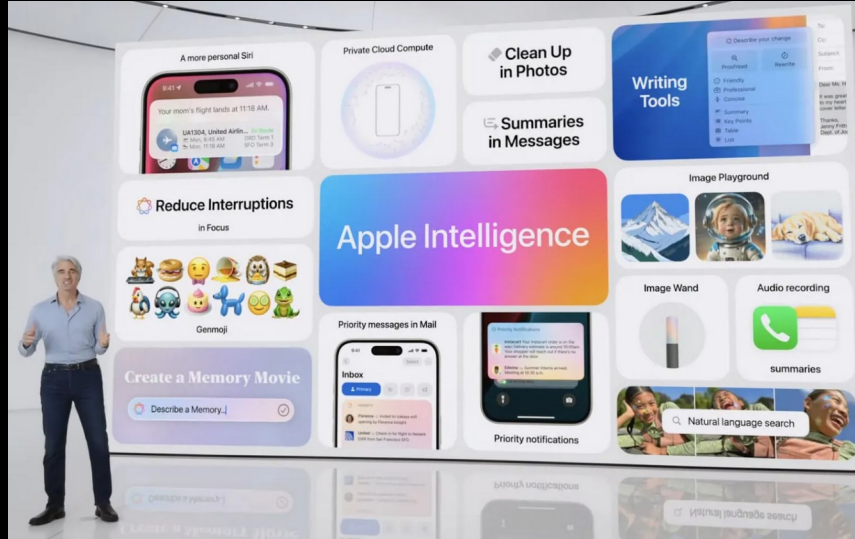
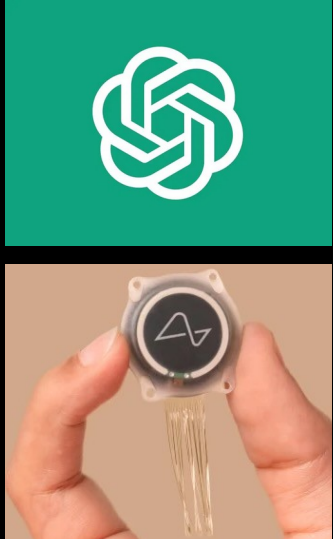


Takeaway n° 1

L'IA est un domaine scientifique en plein essor et relativement récent.

l'Ia, c'est quoi ?

l'ia, c'est quoi ?

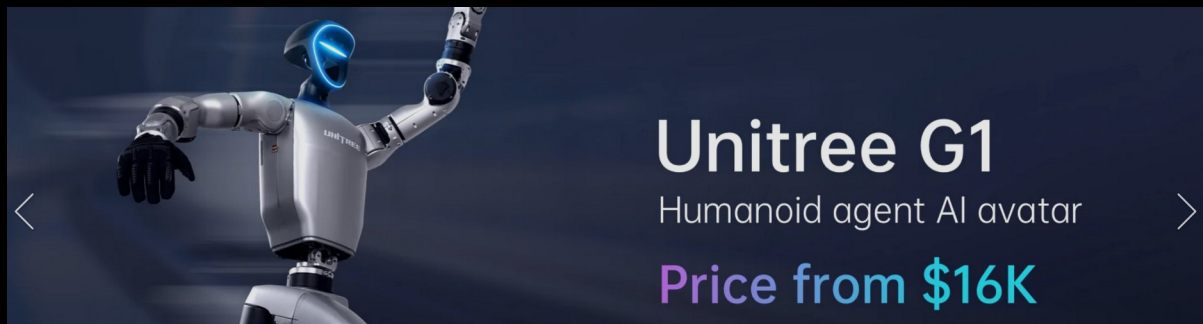
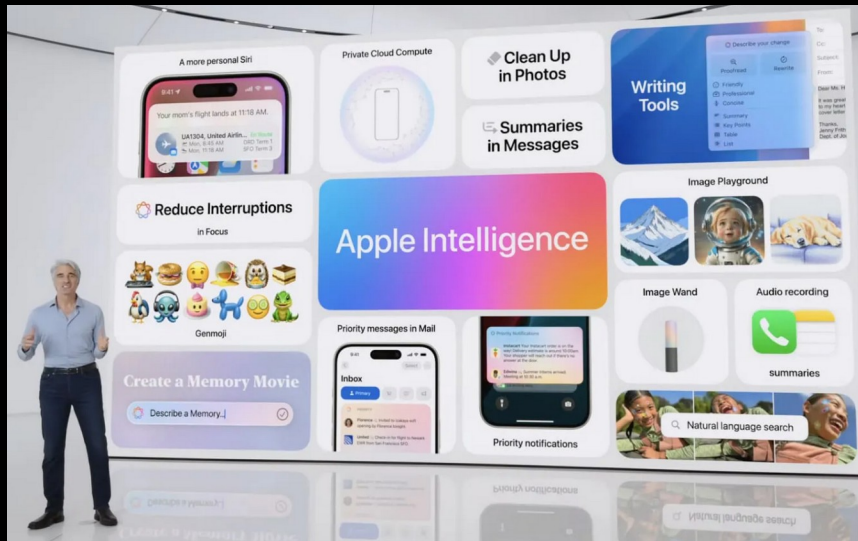


Unitree G1

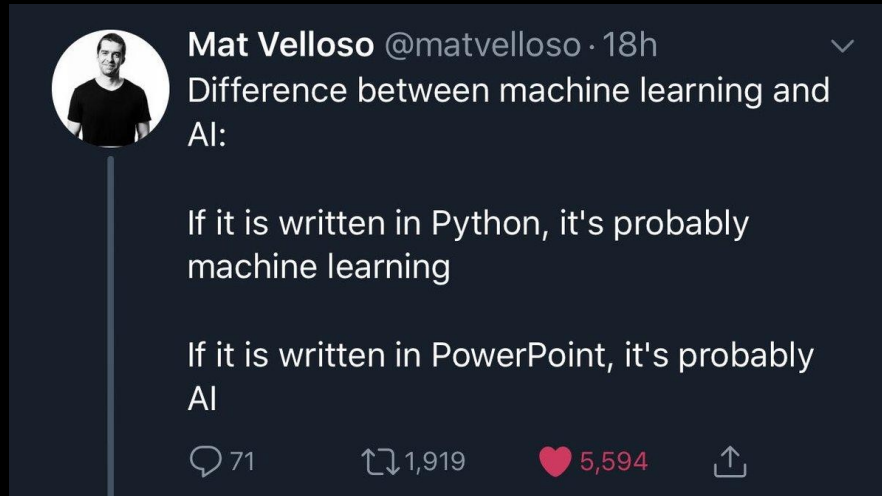
Humanoid agent AI avatar

Price from \$16K

l'ia, c'est quoi ?



l'ia, c'est quoi ?



l'ia, c'est quoi ?



Mat Velloso @matvelloso · 18h

Difference between machine learning and AI:

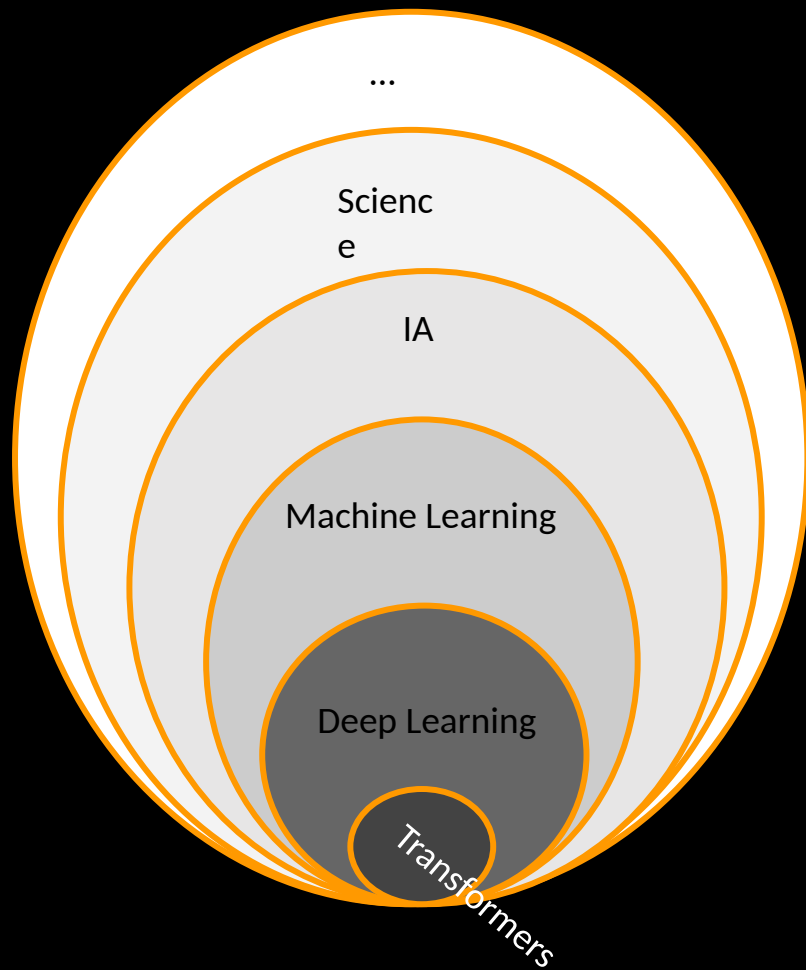
If it is written in Python, it's probably machine learning

If it is written in PowerPoint, it's probably AI

71

1,919

5,594



l'ia, c'est quoi ?

```
1 from tensorflow import keras
2
3 # Step 1: Load the MNIST dataset (handwritten digit images)
4 (train_images, train_labels), (test_images, test_labels) = keras.datasets.mnist.load_data()
5
6 # Normalize the images to a [0, 1] range for better training performance
7 train_images, test_images = train_images / 255.0, test_images / 255.0
8
9 # Step 2: Define the neural network model architecture
10 model = keras.Sequential([
11     keras.layers.Flatten(input_shape=(28, 28)),      # 28x28 images > 784-dimensional vector
12     keras.layers.Dense(128, activation='relu'),      # Hidden layer with 128 units and ReLU activation
13     keras.layers.Dense(10, activation='softmax')    # Output layer with 10 units + softmax activation
14 ])
15
16 # Step 3: Compile the model with an optimizer, loss function, and evaluation metric
17 model.compile(optimizer='adam',
18               loss='sparse_categorical_crossentropy',
19               metrics=['accuracy'])
20
21 # Step 4: Train the model
22 model.fit(train_images, train_labels, epochs=5)
23
24 # Step 5: Evaluate the model
25 test_loss, test_acc = model.evaluate(test_images, test_labels)
26 print('Test accuracy:', test_acc)
27
28 # Step 6: Use the trained model to make predictions on the test images
29 predictions = model.predict(test_images)
```

l'ia, c'est quoi ?

“L'apprentissage automatique est un domaine d'étude qui donne aux ordinateurs la capacité d'apprendre sans être explicitement programmés”.

Arthur Samuel (1959)

l'ia, c'est quoi ?

Intelligence artificielle (IA) : sous-domaine de l'informatique, qui permet de résoudre des tâches pour lesquelles les humains sont doués (langage naturel, parole, reconnaissance d'images, ...).

Intelligence générale artificielle (AGI) : l'IA polyvalente imitant l'intelligence humaine dans toutes les tâches.

Takeaway n° 2

L'IA n'a rien de ~~MAGIQUE~~

mais elle est extrêmement PRATIQUE

Homework

