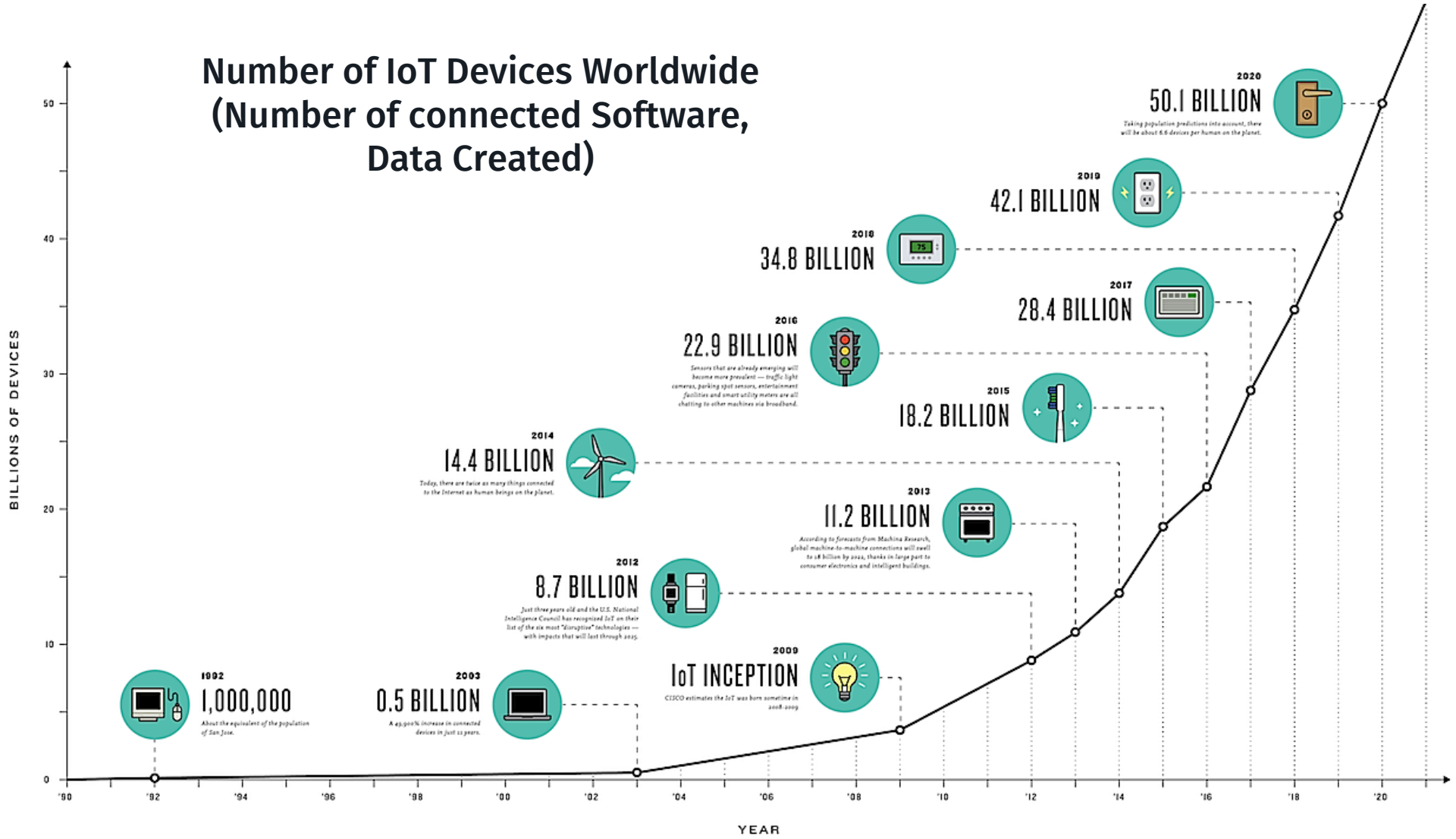
TECHNICAL SEMINAR

DIGITAL TOOLS AND AI IN LIFE SCIENCES – INTRO AI

Megatrends are like evalances in slow motion!

Network Effects in Digitalization



Network Effects in Digitalization

Ca. 50 billion connected IoT-devices

Ca. 11 billion connected IoT-devices

Konklave 2013
Franziskus becomes Pope

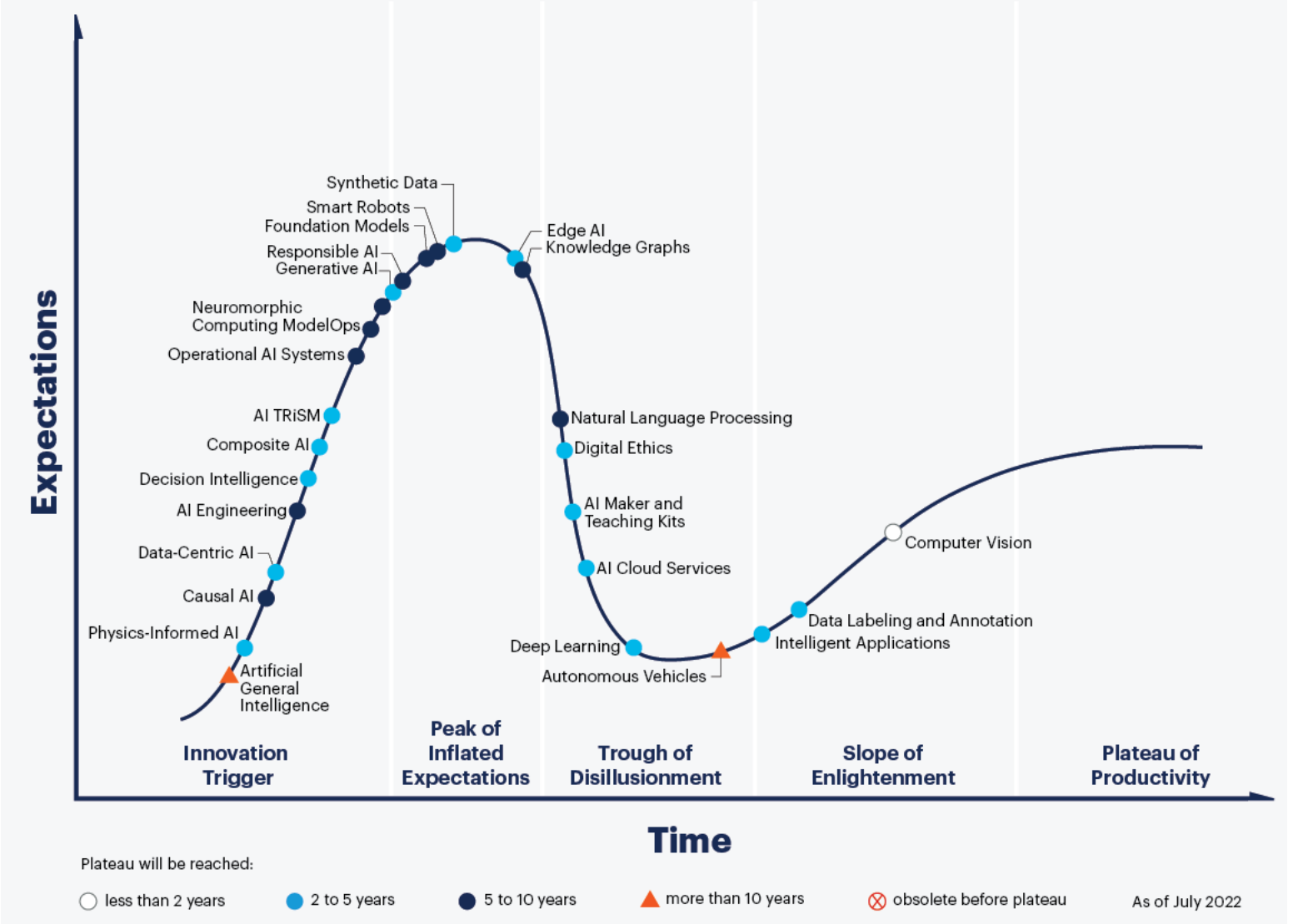
Ca. 0,6 billion connected IoT-devices

AI Hype Cycle

"Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings."

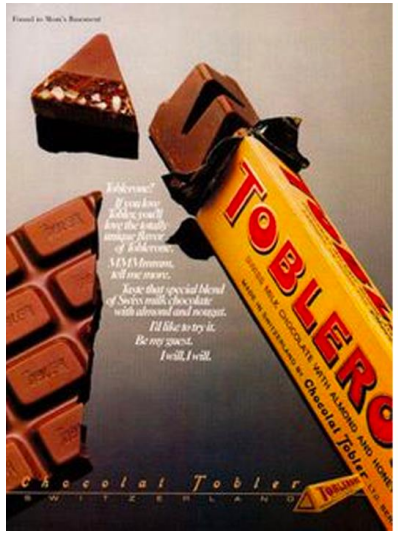
"AI compared to automation allows for adaption to new circumstances"

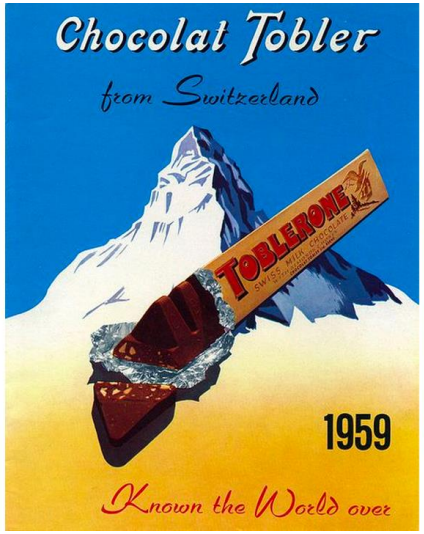
- Britannica -

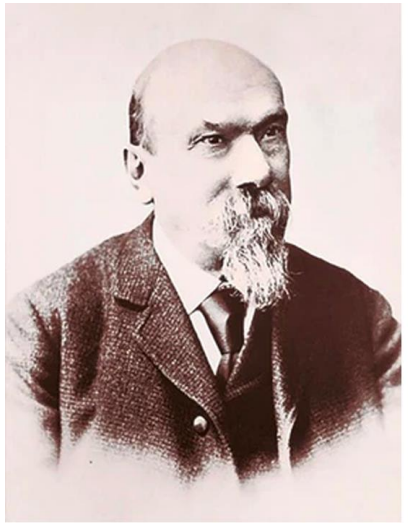


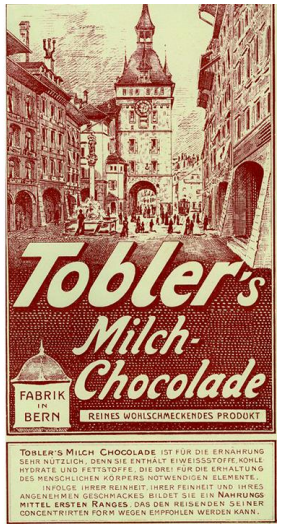
Source: https://www.gartner.com/en/articles/what-s-new-in-artificial-intelligence-from-the-2022-gartner-hype-cycle; https://www.britannica.com/technology/artificial-intelligence/Reasoning

The History of Toblerone









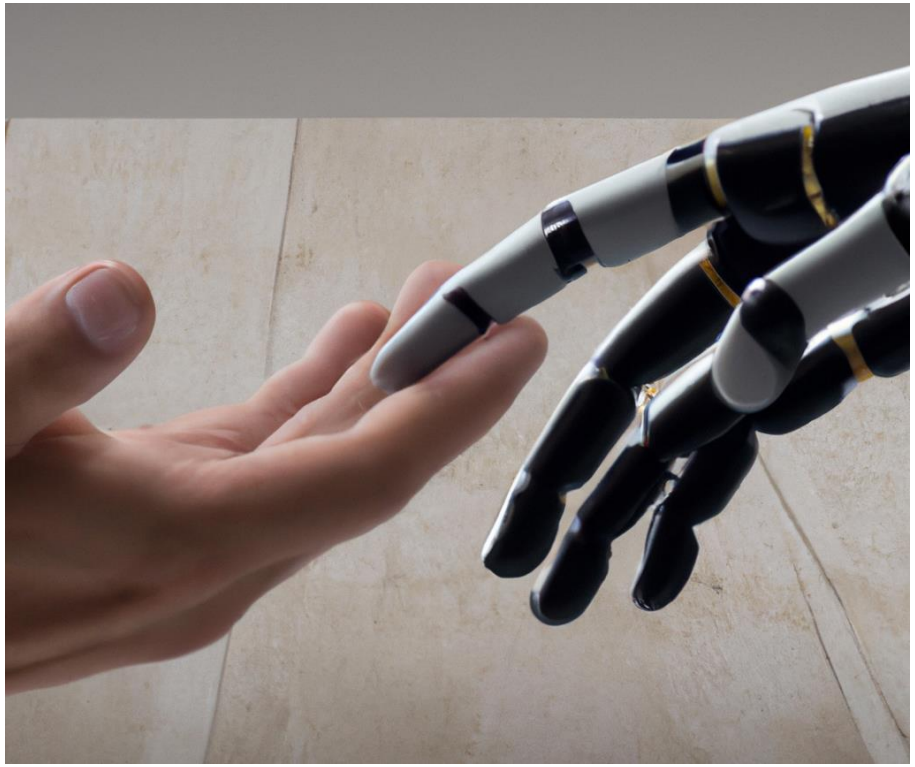
SWISS MILK CHOCOLATE WITH HONEY & ALMOND NOUGAT
TOBLERONE
OF SWITZERLAND
Bear

TOBLERONE
OF SWITZERLAND

Moravec's Paradoxon

Even for the most complex conscious tasks machines perform much better than humans...

... however, machines fail to Carry out simplest unconscious tasks such as sensing the mood between to people.

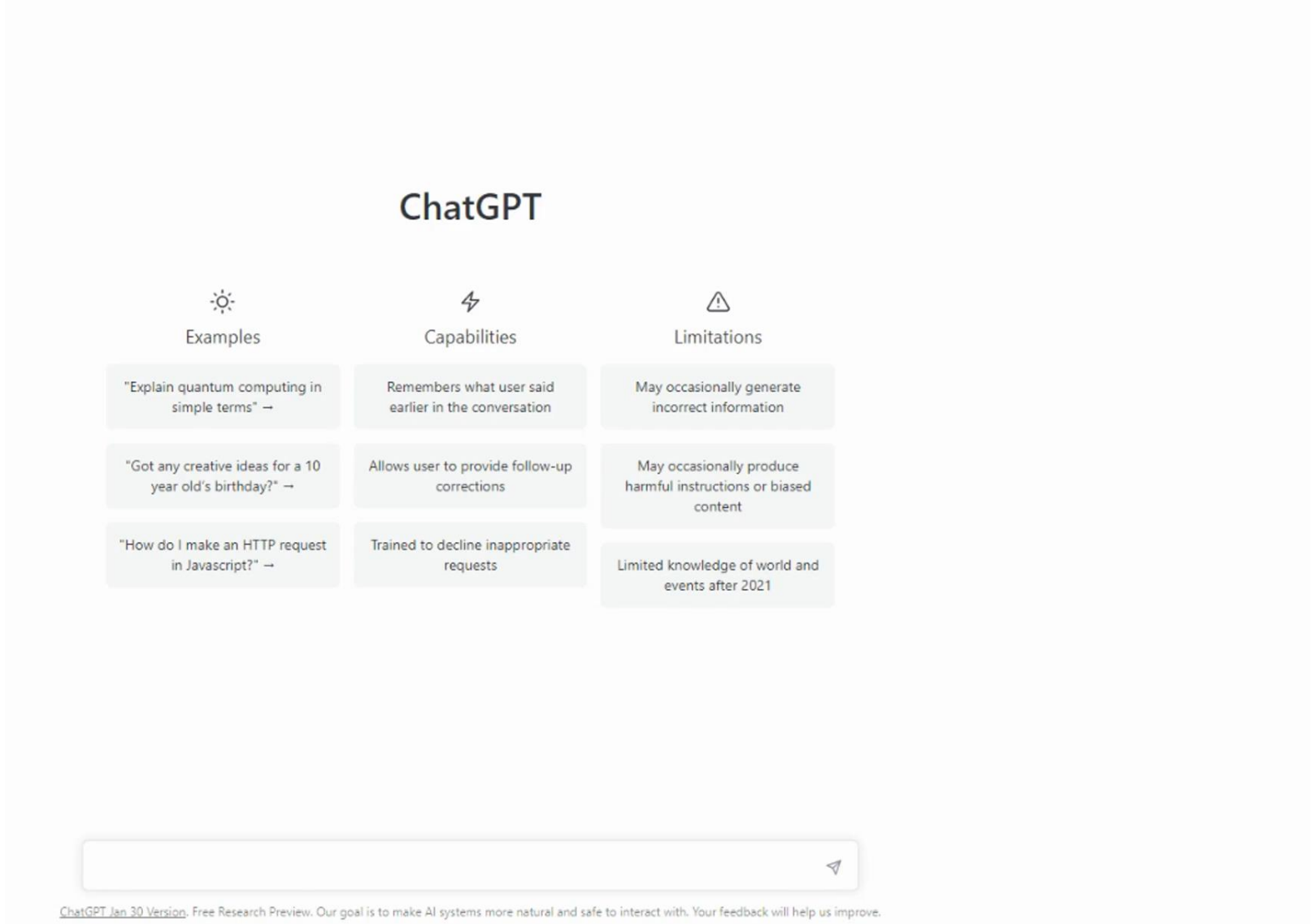


The Moravec's Paradoxon explains why we related so much to a simple Toblerone, but we cannot see the obvious bear.

Humans carry out unconscious tasks without any effort

...however, humans fail to carry out quit easy conscious tasks such as the multiplication of 17 x 29.

AI Revolution – ChatGPT*



Microsoft

OpenAI

AI Revolution – ChatGPT*

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Artificial intelligence + Add to myFT

AI chatbot's MBA exam pass poses test for business schools

ChatGPT earned a solid grade and outperformed some humans on a Wharton course

Save

A professor at the University of Pennsylvania's Wharton School said ChatGPT earned a 'B to B-' on his operations management test
© Bloomberg

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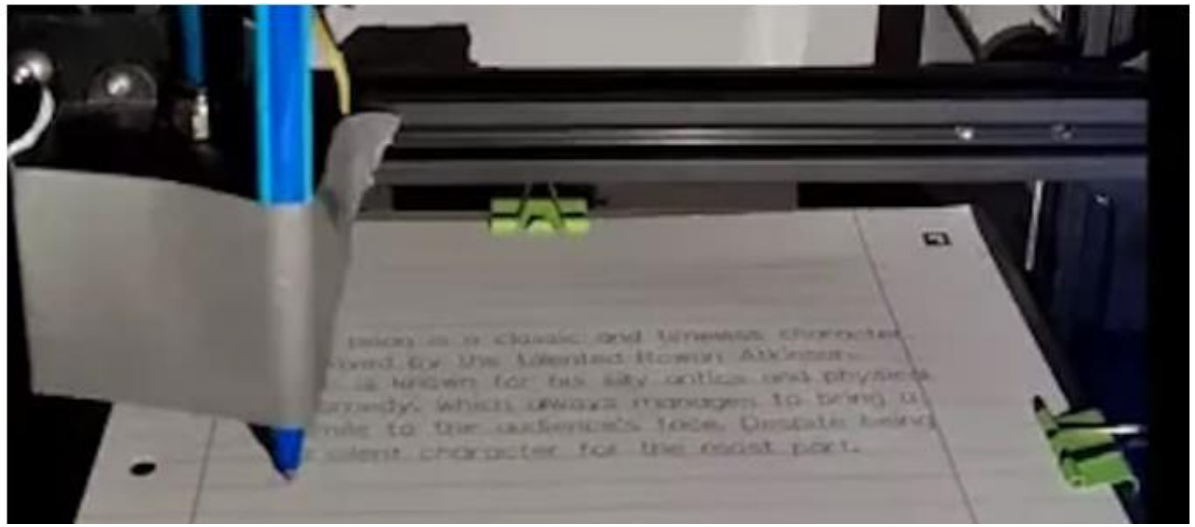
HOME / TECHNOLOGY

Student Uses AI and a 3D Printer To Do Their Homework Assignment for Them

By Sara Barnes on February 7, 2023



AI Revolution – ChatGPT*

OpenAI Microsoft

*Generative Pre-trained Transformer

AI Revolution – DALL E

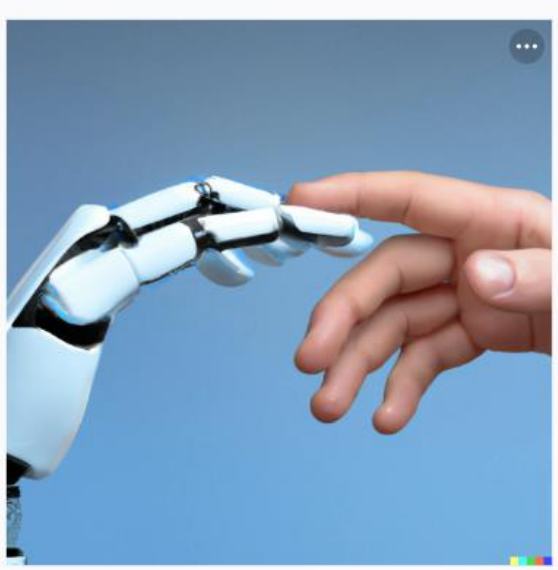
DALL·E History Collections

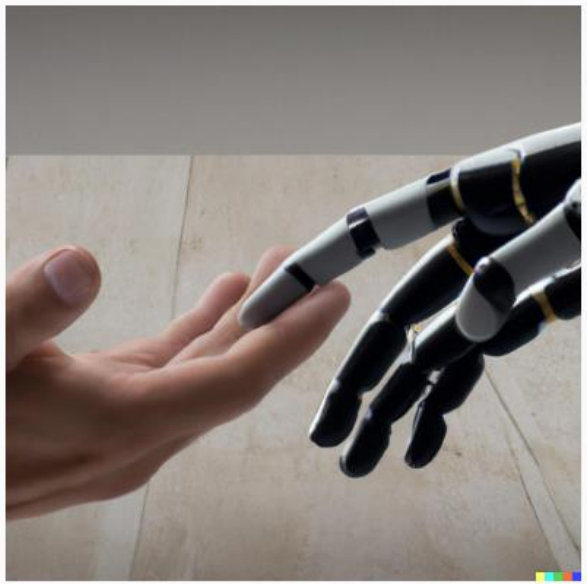
Edit the detailed description

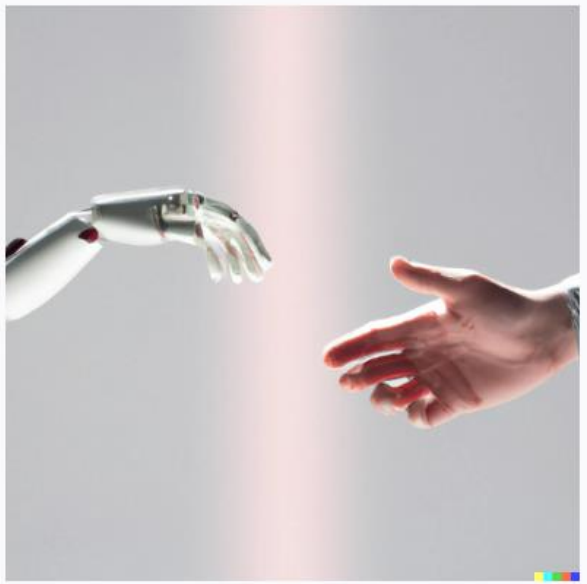
Surprise me Upload

Photo Creation of Adam with a robot hand touching a human hand

Generate







AI Revolution – DALL E

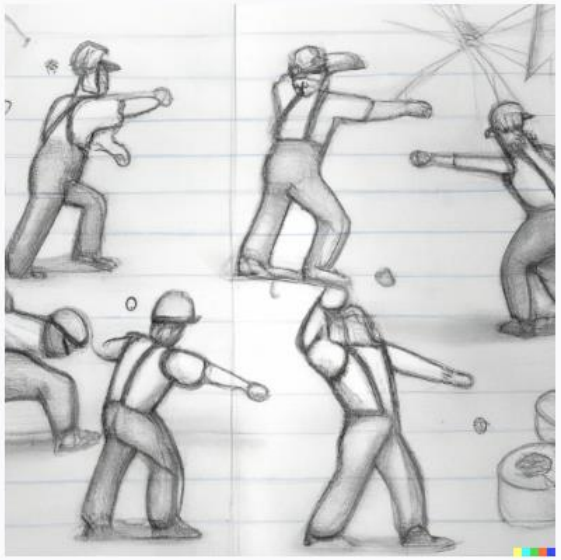
DALL·E History Collections

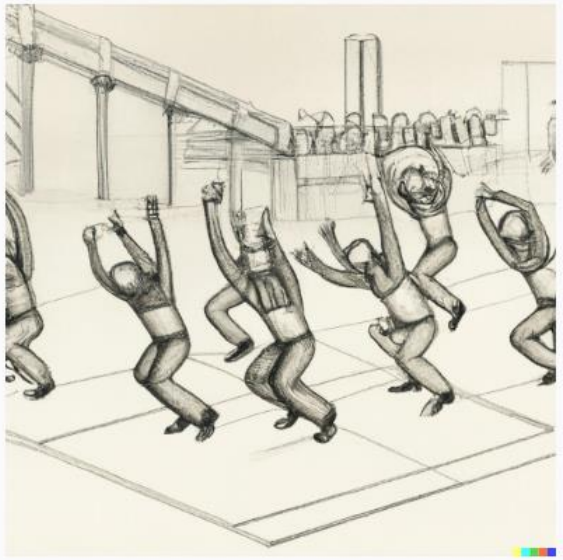
Edit the detailed description

Surprise me Upload

A detailed pencil drawing of dancing workers in an industrial plan

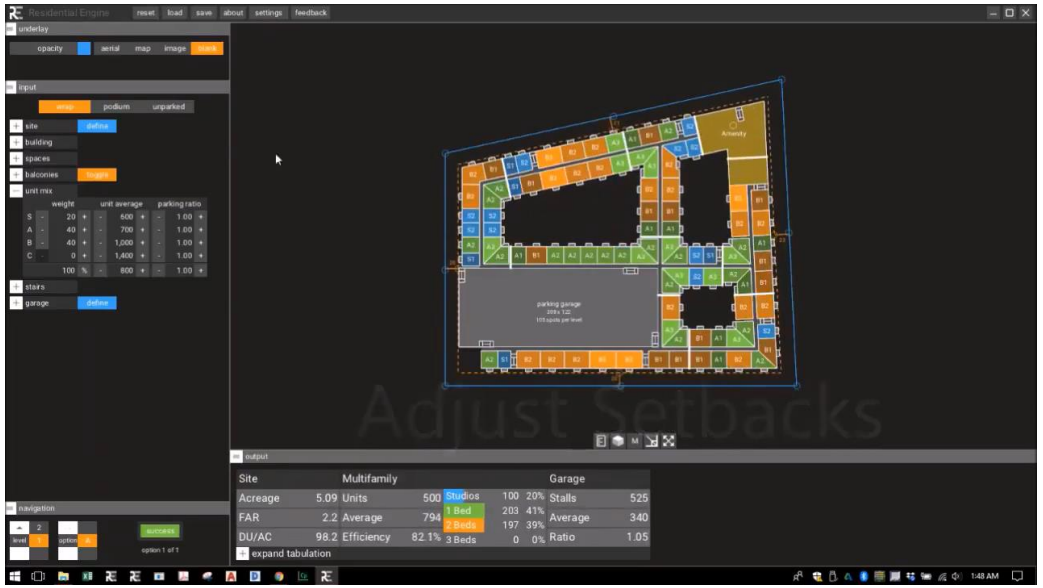
Generate





Example: Generative Design for Plant Engineering

Overview:



Description:

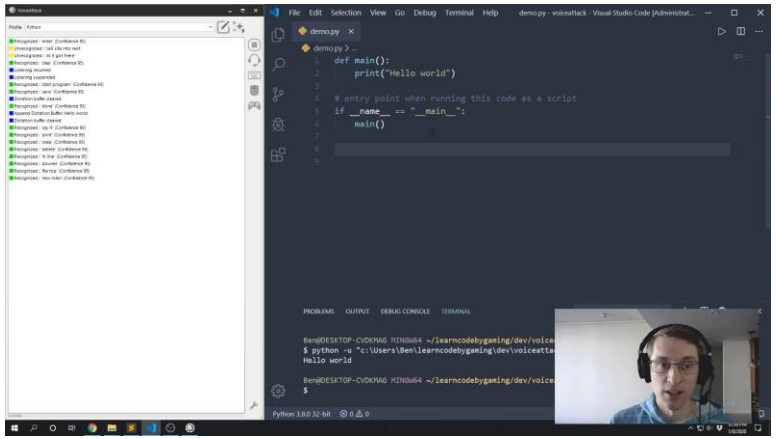
- Companies such as Autodesk (video) with Airbus started to develop airplane parts without human engineering but using AI and defined requirements parts should fulfill
- Also, in the area of architecture, generative design booms, as prior not possible shapes can be realized (human mind cannot think these shapes because of their complexity)
- Companies can apply this technology to fully automate the engineering e.g., of factory shells around defined layouts and processes
- In combination with 3D-printing any structure designed can be printed and assembled during plant construction

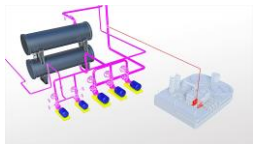
Benefits:

- Reduced engineering effort for standard plant parts (e.g., factory shell)
- Possibility to apply 3D-printing during operations to print replacement-parts based on 3D-models or scan
- Creation of a USP if “Signature-shapes” for factories are established

Example: AI Drawing – "Speech-to-Visualization" Engineering

Overview:





Description:

- "Speech to code"-solutions transfer spoken text into programming code – companies such as serenada start to create use cases to capture the whole programming life cycle
- Currently, AI Arts – the visualization of spoken commands is becoming mainstream with platforms such as DALLE2
- As drawing like CAD relies on background-programming "Speech to Planning" becomes a logical next step
- Companies can host planning meetings where plans can be changed in real-time based on spoken commands e.g., "Shift wall 1m"
- Traditional keyboard/mouse-drawing will be fully substituted

Benefits:

- Immense time savings for drawings if chain-of-clicks can be substituted by one command
- Real-time planning in meetings becomes possible of commands are directly transferred into changing plans
- CAD-Drawing becomes possible without software knowledge and training – which widens talent-pool

Will Digital Tools and AI kill jobs?

THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?

Oxford, Frey & Osborn 2013

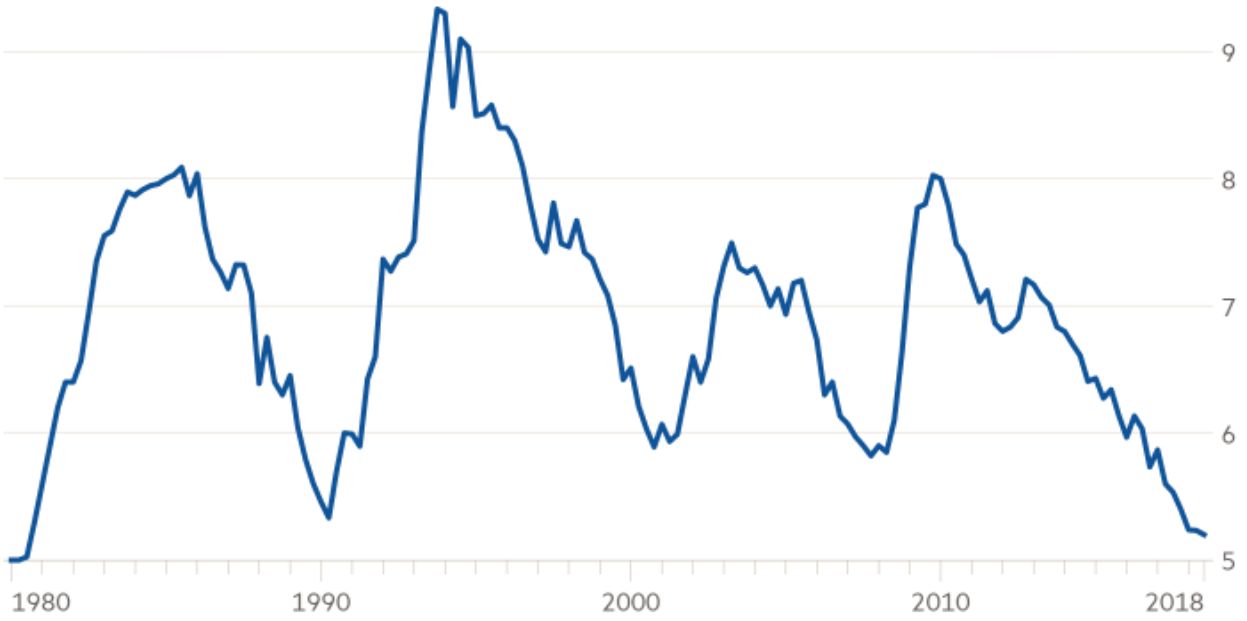
47% of US-jobs might be lost.

1978

2016

Global unemployment

Median rate in 48 countries (%)



Sources: UBS, Haver Analytics

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