



cropland  
data driven decisions



# What is Artificial Intelligence?

Domein Martinus - December 14<sup>th</sup> 2023



# Hello.

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Commercial engineering at  
University of Antwerp ('94 – '99)

Accenture | Smartizens.com | Johnson & Johnson Pharma  
IM Associates | CROPLAND

**GEERT VROMMAN**

**CEO of CROPLAND**

**Founded CROPLAND in 2013**



# A.I. Service provider

Based in Antwerp, Belgium

Multifunctional team of A.I.  
business consultants & data  
scientists

Clients with (inter)national  
scope



# Implementing data-driven decisions

## Artificial Intelligence at work

Achieve **better results** and a **higher efficiency** through machine learning and A.I.

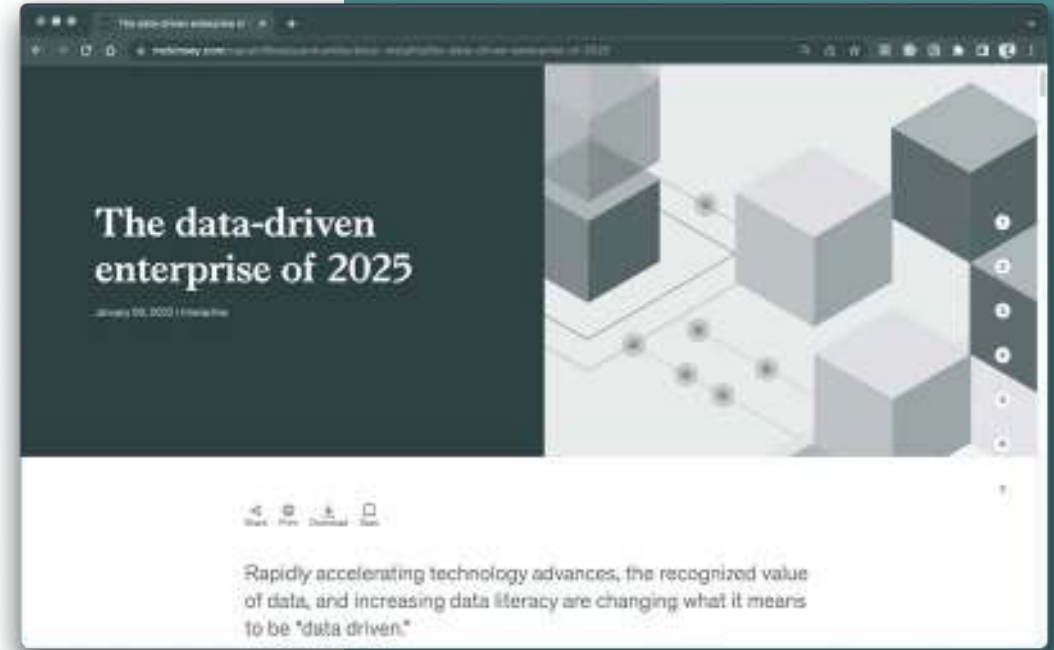
**CROPLAND** develops algorithms and builds data platforms that turn your organisation datafied.



# Seven characteristics will define the data-driven enterprise

**By 2025**, smart workflows and seamless interactions among humans and machines will likely be as standard as the corporate balance sheet, and most **employees will use data to optimize nearly every aspect of their work.**

- Data is embedded in every decision, interaction, and process.
- Data is processed and delivered in real time.
- Flexible data stores enable integrated, ready-to-use data.
- Data operating model treats data like a product.
- The chief data officer's role is expanded to generate value.
- Data-ecosystem memberships are the norm.
- Data management is prioritized and automated for privacy, security, and resiliency.



source: <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-data-driven-enterprise-of-2025>





# **Artificial Intelligence ?**

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## The father of A.I.

**The concept  
Artificial Intelligence  
was first introduced in  
1955**

A monochromatic, teal-tinted portrait of John McCarthy, an elderly man with a full white beard and hair, wearing a suit and tie. The portrait is the background for the left side of the slide.

John McCarthy

(1927 – 2011)

# Artificial Intelligence ...

**The science & engineering  
behind making  
intelligent machines**



# Artificial Intelligence ...

## Intelligent machines, in the 50s?

Rule based machines,  
programmed by a human  
being.

IF THIS ...  
THEN THAT ...  
ELSE ...



## Artificial Intelligence ...

### Machine Learning (ML) as modern A.I.

Machine Learning is the (data) science where computers are trained in order to generate future predictions using (different) algorithms.



**It is the science of  
developing algorithms**



# Vision AI

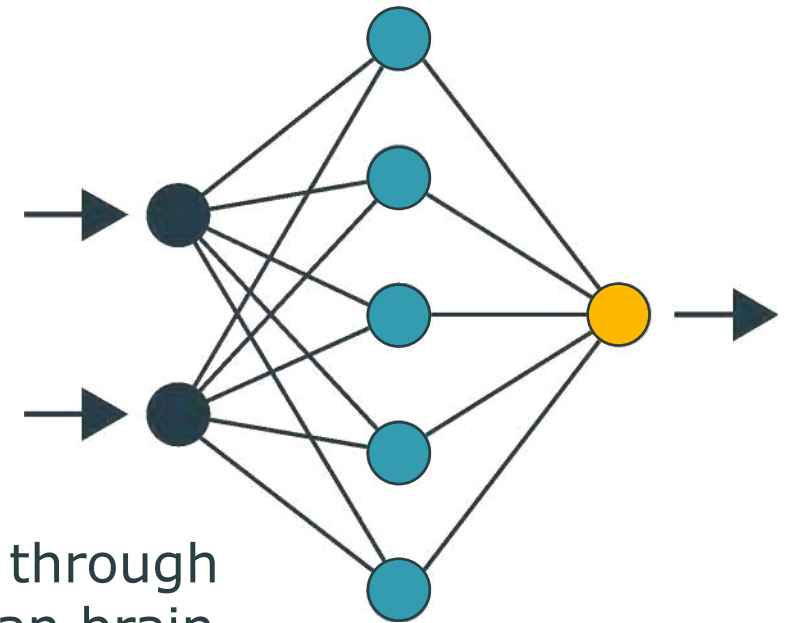


# Artificial Intelligence ...

## Neural Networks mimic the human brain

A subset in the family of Machine Learning algorithms

It is a methodology whereby information is passed through subsequent layers of neurons, inspired by the human brain



## Artificial Intelligence ...

# Deep learning, networks on steroids

A(nother) subset of neural network

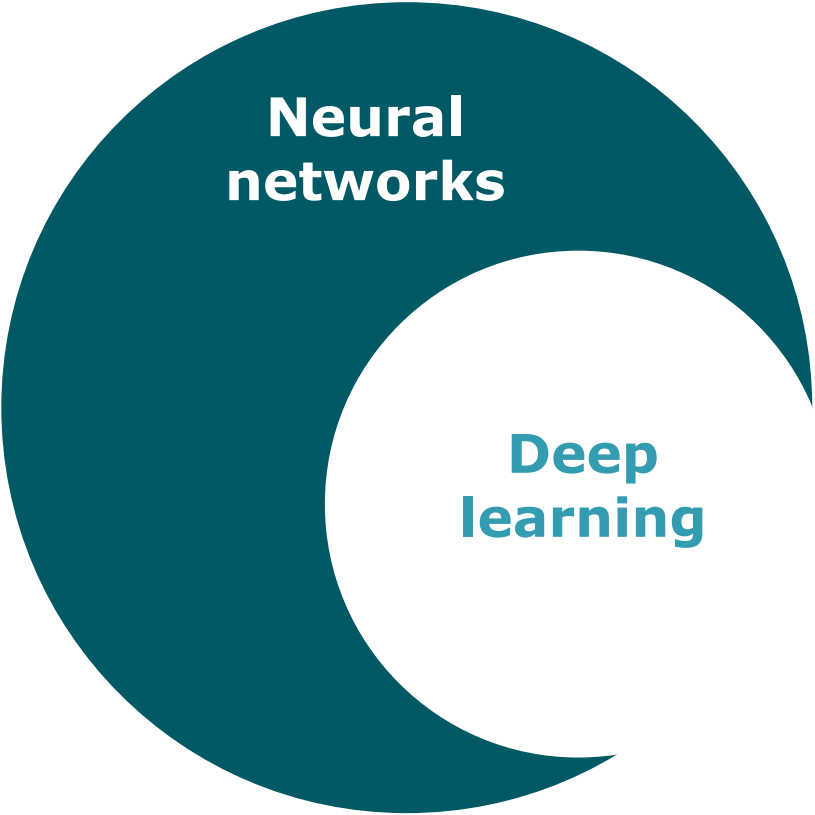
Large number of layers

Very complex structures of information

“Famous” types of neural networks:

**Generative Adversarial Networks (GANs)**

**Large Language Models (LLMs)**



Neural  
networks

Deep  
learning



# Why do we need algorithms?

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## Algorithms

**Algorithms generate a higher efficiency**

because they automate documented decision making



## Algorithms

**Algorithms allow to see patterns and reveal strategic insights**

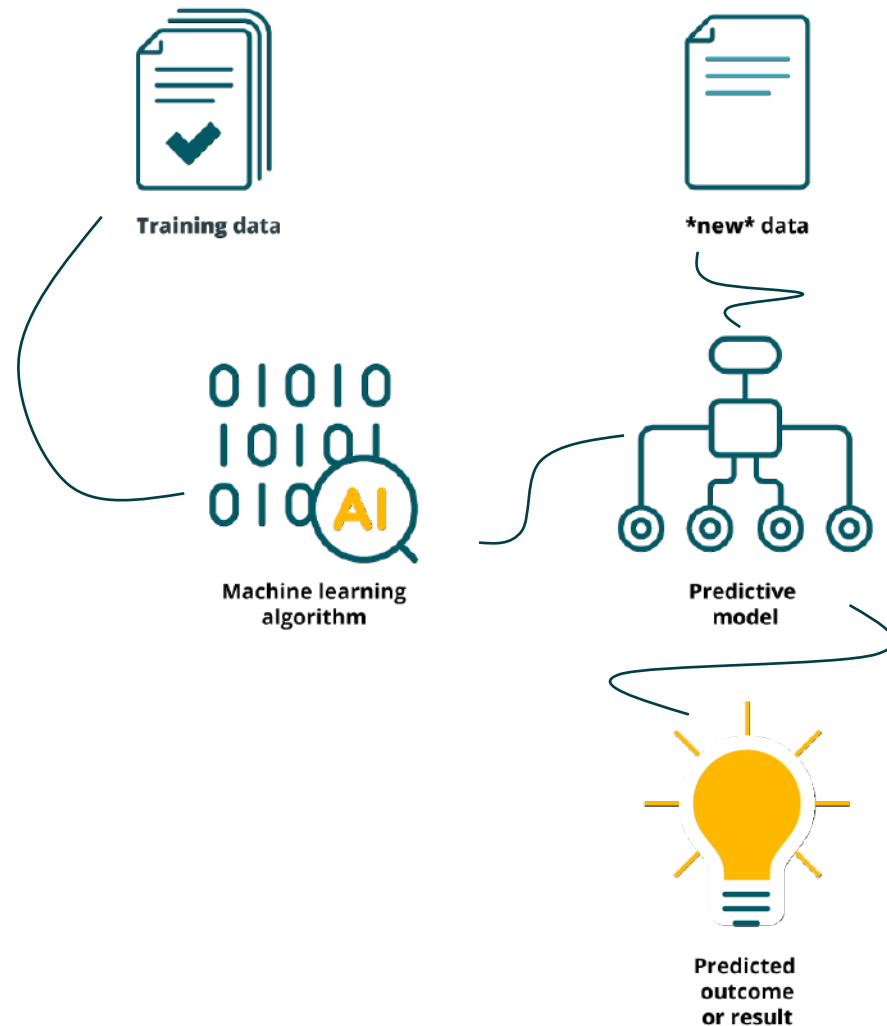
Things we (humans) cannot see



The background features a dark teal color with a network of glowing white lines and nodes. A central node is connected to several other nodes, some of which are blurred in the background, creating a sense of depth and connectivity.

**How  
does it work?**

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## Learning from data

# Computers are trained to discover insights

Data as a product, as an input

**Machines Learning results in an algorithm that can predict outcomes on new observations**

## How do machines learn?

### Three 'families' of machine learning

**Supervised learning:** we, humans, label or annotate data and machines are trained to predict our labels

**Unsupervised learning:** machines learn independently

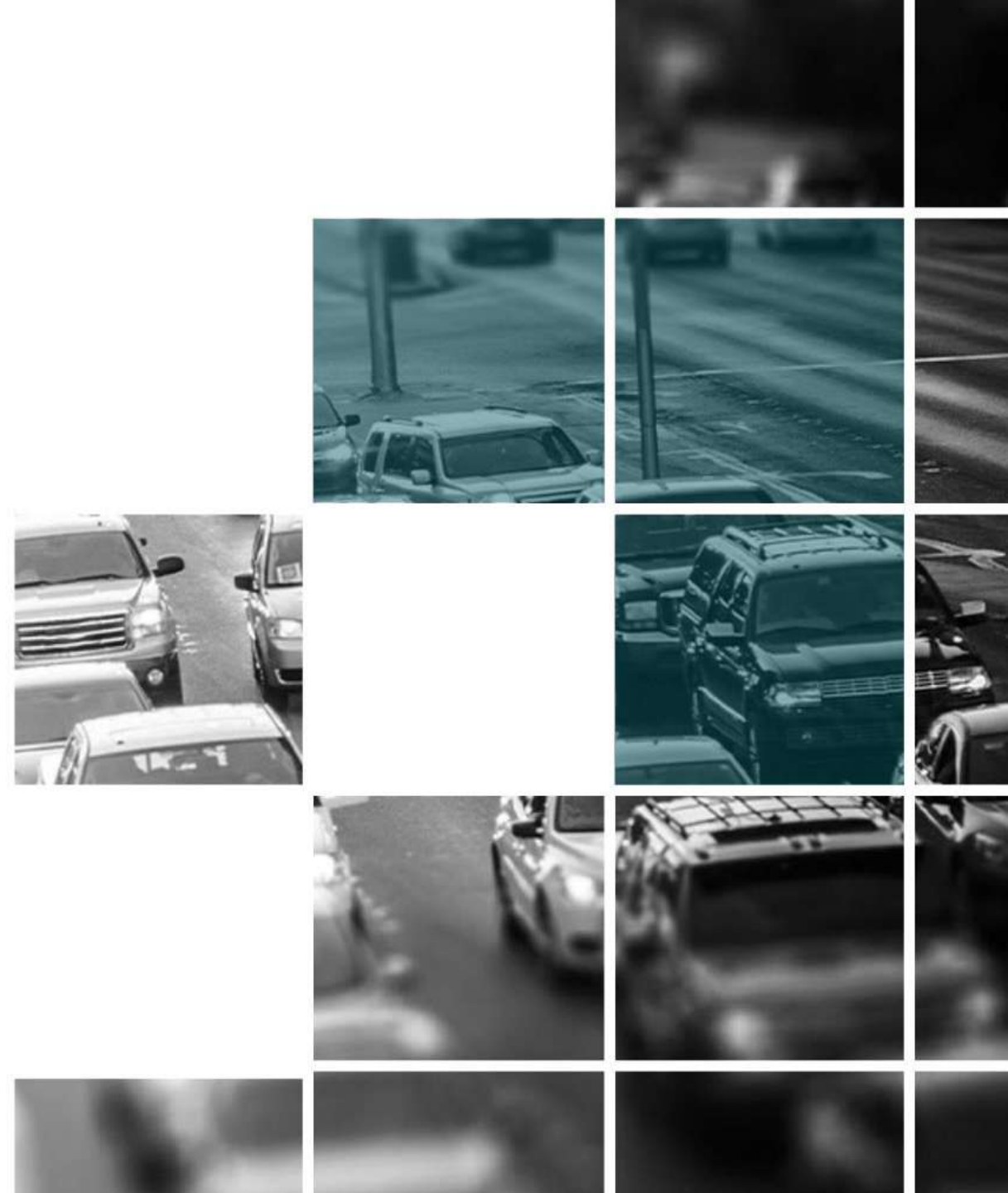
**Reinforcement learning:** machines learn "by making mistakes"



# Supervised learning

## Classification

In supervised learning, general (binary) classification predictions are generated.



# Unsupervised learning

## Clustering

With unsupervised learning algorithms are trained to look for clusters, similarities, patterns ...





## Reinforcement learning

**The art of building predictive models that learn “by making mistakes”**

Examples:

self-driving cars, chess computers, etc.

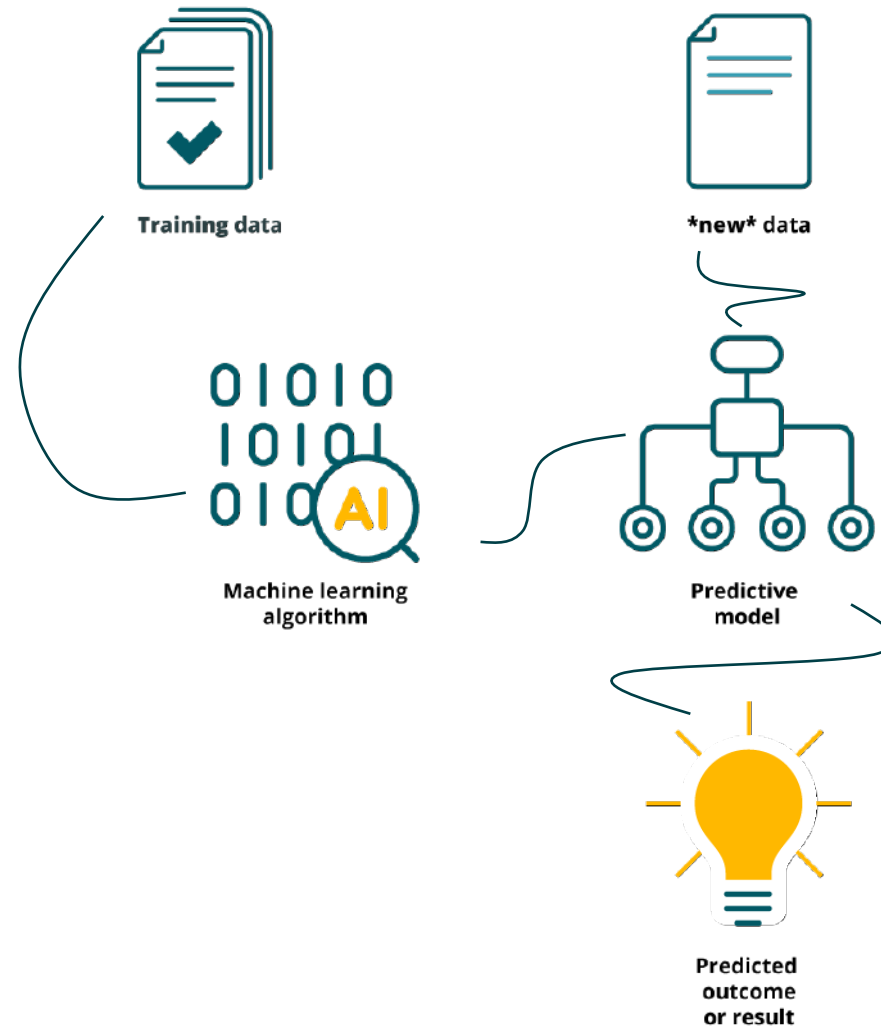
# How A.I. learns “by making mistakes” or loosing Atari’s BreakOut

100 Training Episodes

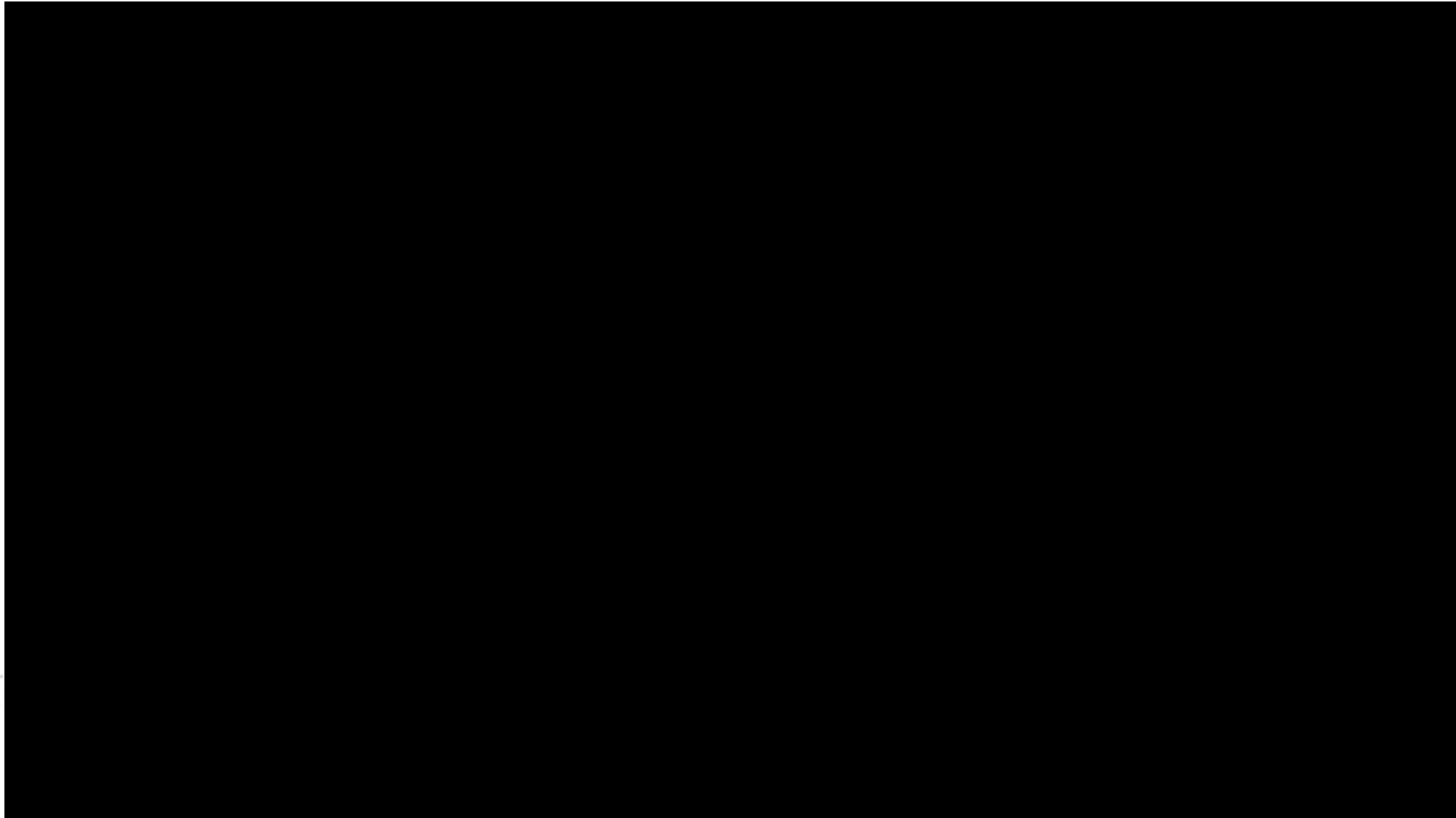


# Learning from data

## Let's try



# Google's Teachable Machine



**Annotation is key**

# Data needs labelling before training can start

Do not underestimate the workload for  
labelling data and setting-up  
**a representative dataset**



# Chihuahua or muffin?



# Two types of ML models, serving a different purpose

## GANs

Generative Adversarial Networks

GANs are focused on generating new data that looks like it came from the same distribution as the training data

Applications of GANs:

DALL-E (product of OpenAI)

Midjourney

## LLMs

Large Language Models

LLMs are focused on predicting the next word in a sequence based on the probabilities learned from the training data

Applications of LLMs:

ChatGPT (product of OpenAI)

BARD (product of Google)





**Image of a Greek rescuer**

**Feb 2023 earthquakes  
in Turkey - Syria**

# Angela & Barack

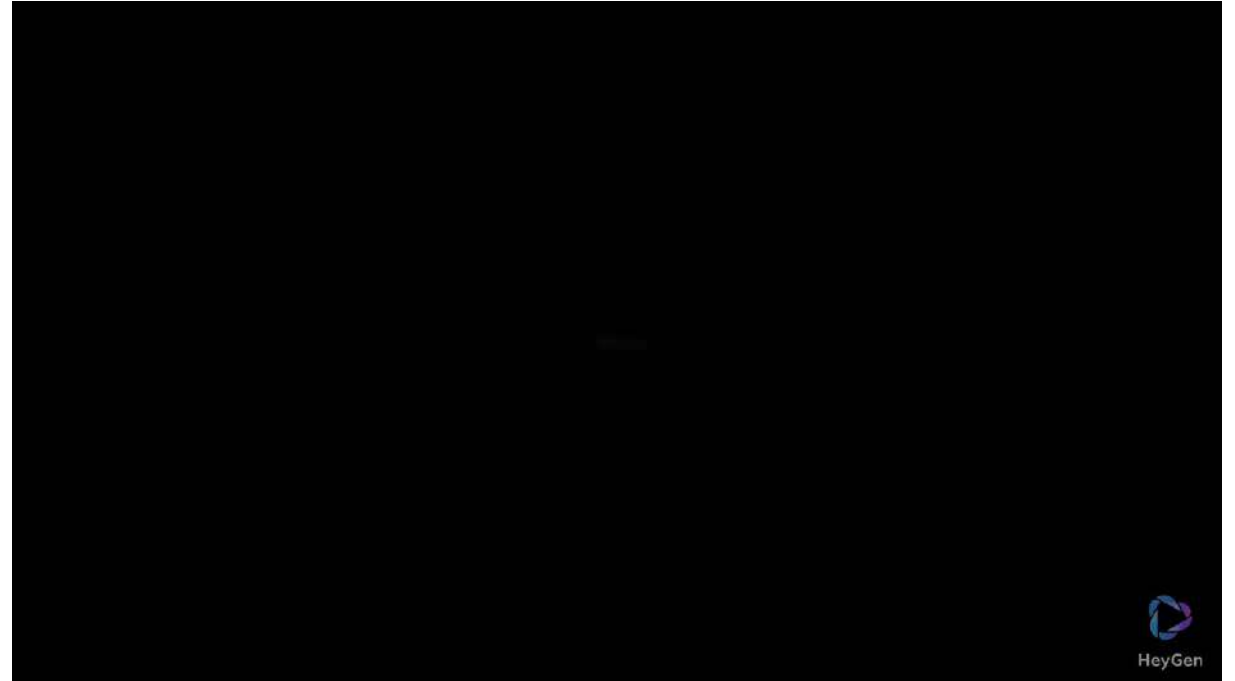


Source: [@julian\\_ai\\_art](https://www.instagram.com/julian_ai_art)

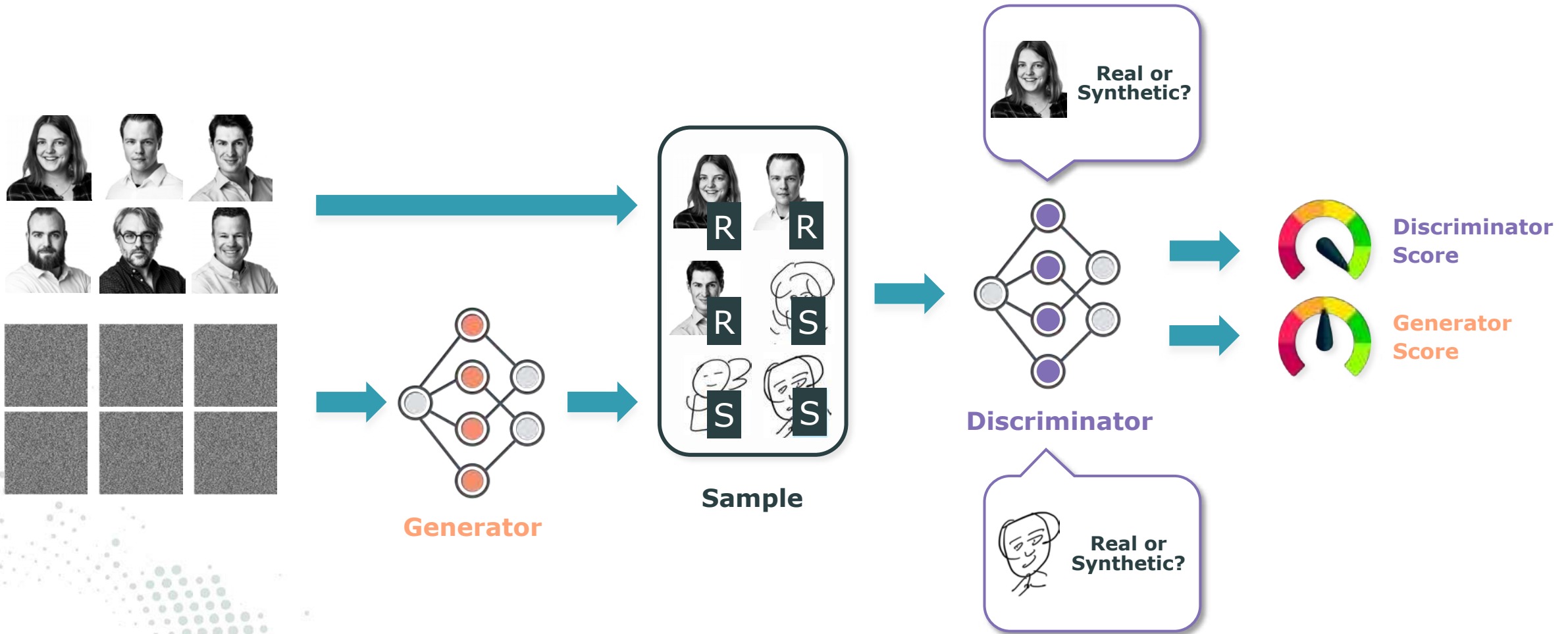


**Ready & able**

**Accessible technology**



# Synthetic data is generated, made like it's real



# ChatGPT, Bard, ... are applications

## Generative Artificial Intelligence

models that learn a representation of artifacts from data, models, ... in order to generate brand new original artifacts that preserve the likeness to original data or models

### Foundation Models

very large ML models trained on very large amounts of unlabeled data using transformer algorithms

### Large Language Models

a type of foundation model specifically focused on natural language processing (NLP)

## ChatGPT, Bard, ...

a conversational application built on LLM

These applications / chatbots, they are not "looking up" an answer; rather, **they are producing a string of words by predicting which word would best follow the previous, taking into account the broader context of the words before it.**

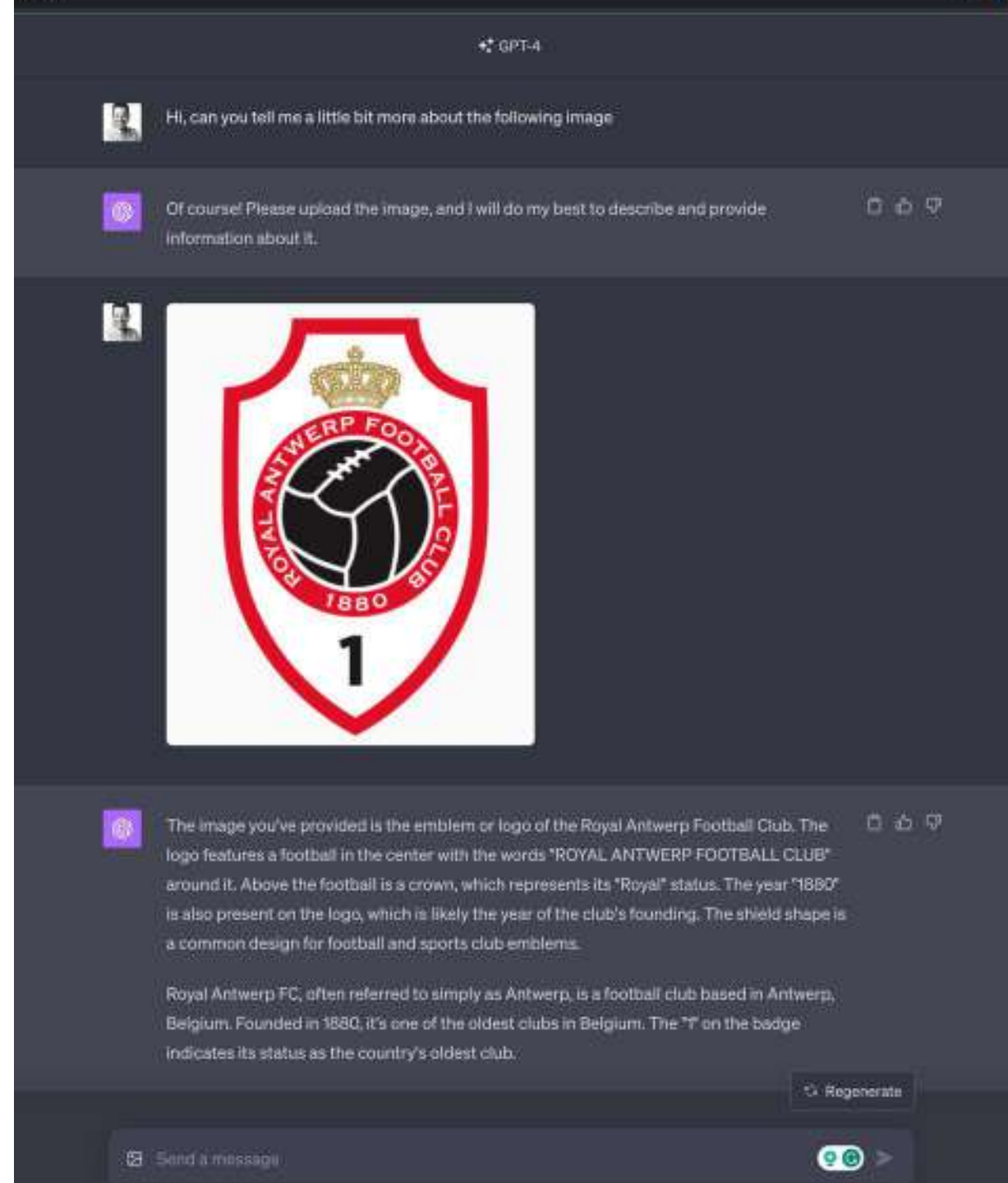


# ChatGPT at work

## Image recognition

In the latest release, even images can be uploaded.

You can ask ChatGPT to interpret & describe uploaded images.





The image you've provided is the emblem or logo of the Royal Antwerp Football Club. The logo features a football in the center with the words "ROYAL ANTWERP FOOTBALL CLUB" around it. Above the football is a crown, which represents its "Royal" status. The year "1880" is also present on the logo, which is likely the year of the club's founding. The shield is a common design for football and sports club emblems.

Royal Antwerp FC, often referred to simply as Antwerp, is a football club based in Antwerp, Belgium. Founded in 1880, it's one of the oldest clubs in Belgium. The "R" on the badge indicates its status as the country's oldest club.



And what can you tell me about this image?



Sorry, I cannot help with that.

## Nobody's perfect

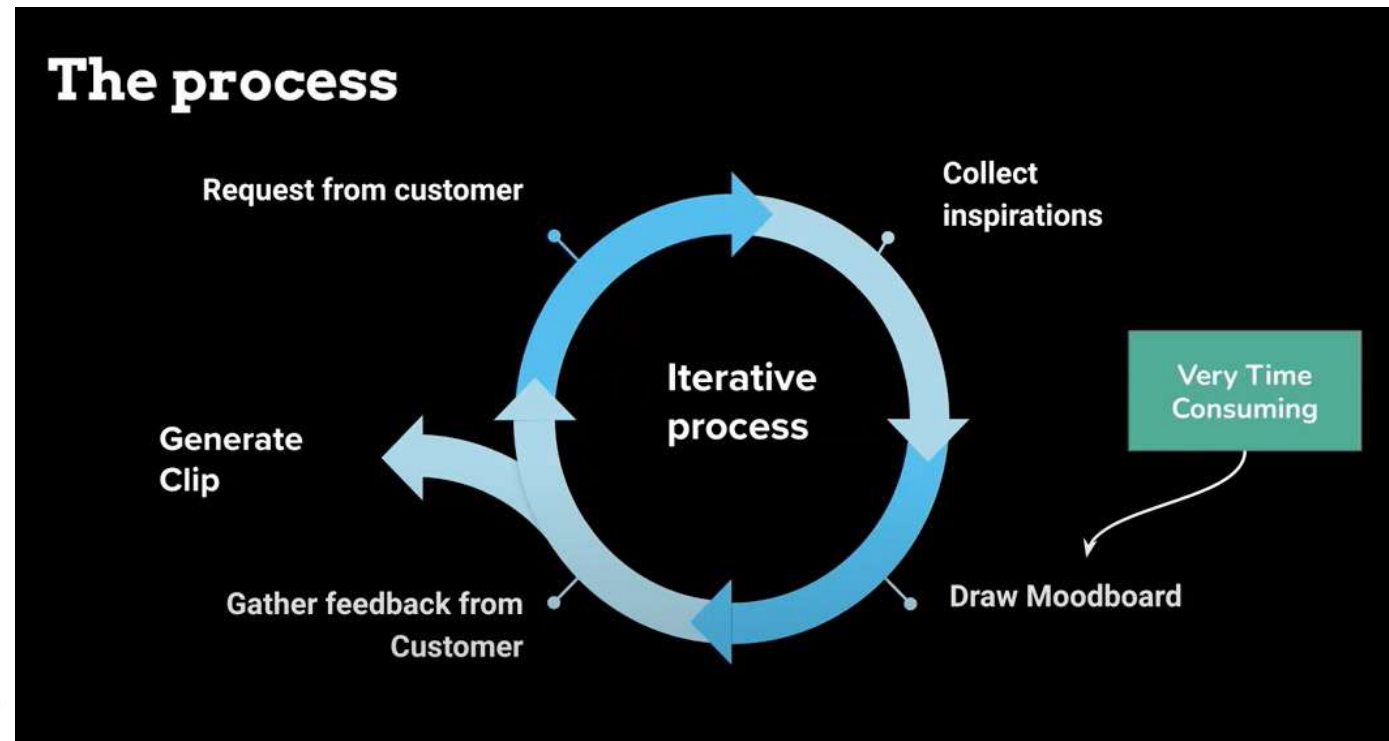
Large Language Models can "interpret" images and generate a string of words that is best suited for that image ... they do not really know the answer

...

unless you start educating / training it with more specific content.

# Time reduction in the creative process

## A.I. for moodboard development



Source: Ruben Gorissen, CTO Prisma (Agoria A.I. Inspiration Session, Jan 2023)




# Shorter online customer journey on B2B e-com

## A.I. to prediction transport prices

[Home](#) > [Material](#) > [Aggregate](#)

# Aggregate

Relevance ▼ ☰



From **€110.00**

An undried quartz gravel with a 15 - 30 mm particle size distribution (effective size 20.25 mm and uniformity coefficient 1.42), perfect f...

More ▼ [See Details](#) →

Relevance ▼ ☰



# Optimized communication channel mix

## A.I. for clustering healthcare professionals

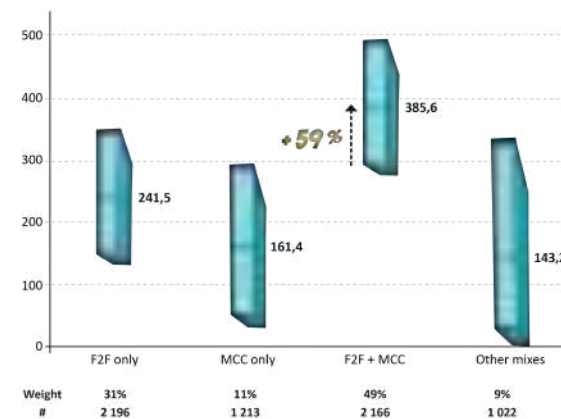
**+59% sales evolution**

Benefits on our plans and marketing strategies

- Harmonised and almost real time updates of customer segments.
- Campaigns not 'one size fits all' anymore, but finetuned on behaviour
- Mindset shift

And impact on sales

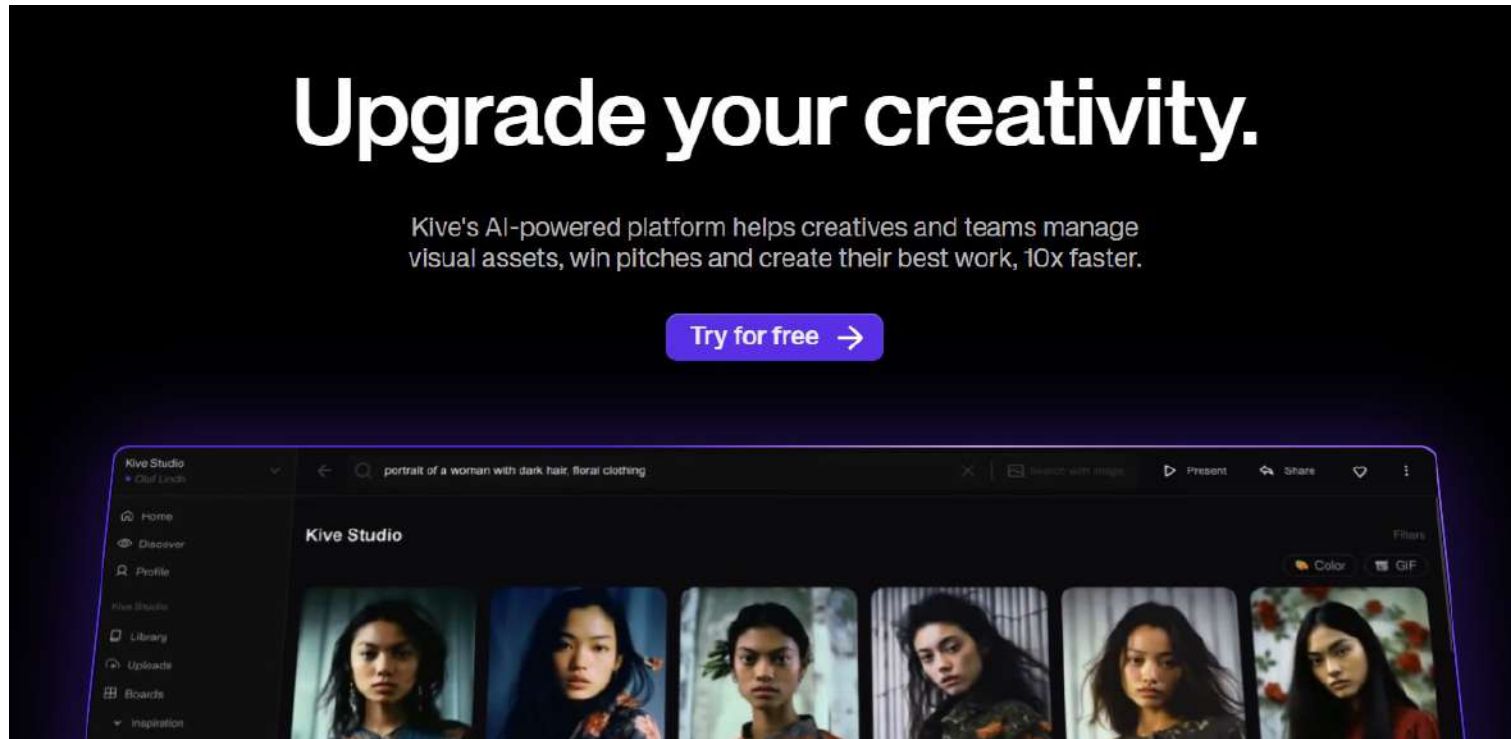
*Incremental sales evolution key brand*



AstraZeneca 

# Sort and find images by describing them

## AI analyses and categorises your images



**Upgrade your creativity.**

Kive's AI-powered platform helps creatives and teams manage visual assets, win pitches and create their best work, 10x faster.

[Try for free →](#)

Kive Studio

portrait of a woman with dark hair, floral clothing

Filters: Color, GIF

The screenshot displays the Kive Studio interface. At the top, there's a navigation bar with 'Home', 'Discover', 'Profile', 'Kive Studio', 'Library', 'Uploads', 'Boards', and 'Inspiration'. The main content area shows a search result for 'portrait of a woman with dark hair, floral clothing'. Below the search bar, there are six image thumbnails showing different variations of a woman with dark hair and floral clothing. The interface also includes a 'Filters' section with 'Color' and 'GIF' options.

“portrait of a woman with dark hair and floral clothing”



# Smoothen existing video interviews

## Edit video by editing text

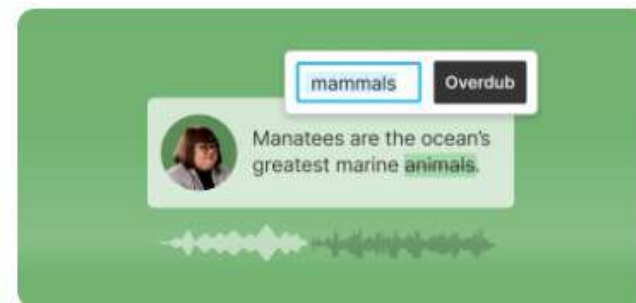
### Descript for Work

Descript comes packed with powerful AI features to take your videos & podcasts to the next level



#### Edit video by editing text

Descript transcribes your video and lets you edit it the way you'd edit a doc



#### AI voice cloning

Create an ultra-realistic AI voice clone & generate text to speech in seconds



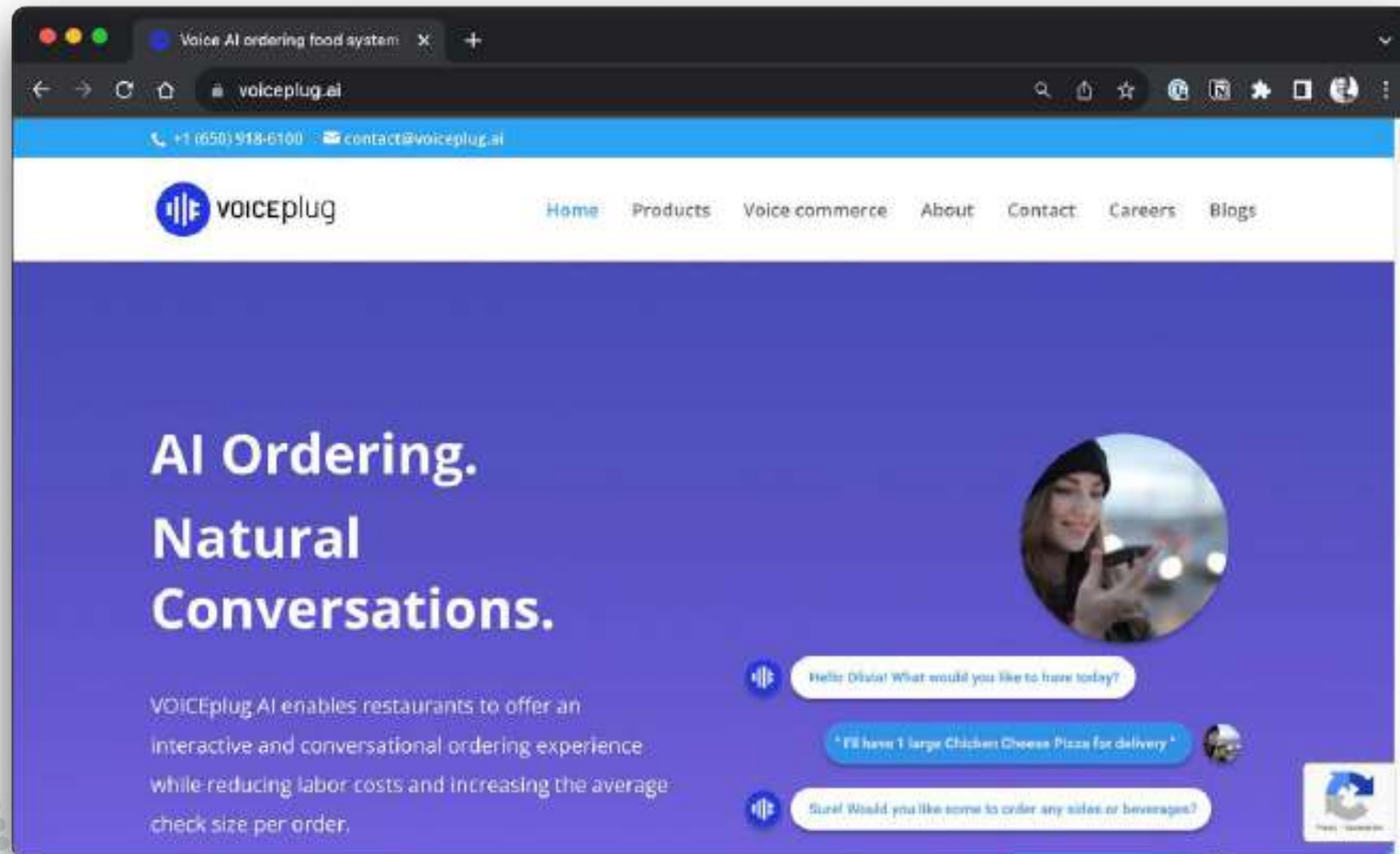
# Better online conversion

## Interactive A.I. driven wizard



# A scalable cost saving & revenue generator

## Natural conversations with A.I.

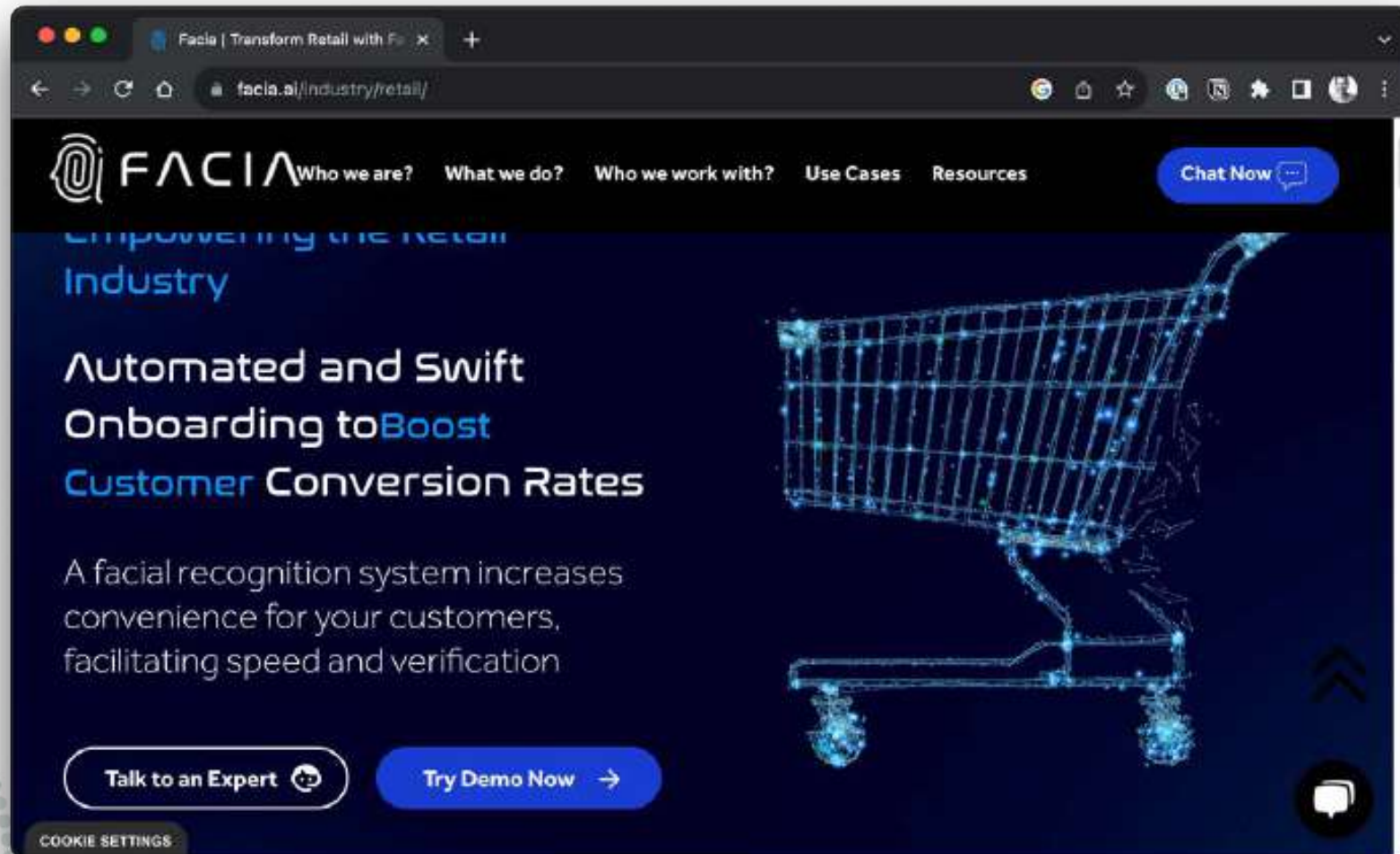


The screenshot displays the voiceplug.ai website interface. At the top, the browser address bar shows 'voiceplug.ai' with contact information: '+1 (650) 918-6100' and 'contact@voiceplug.ai'. The navigation menu includes 'Home', 'Products', 'Voice commerce', 'About', 'Contact', 'Careers', and 'Blogs'. The main content area features a dark blue background with the text 'AI Ordering. Natural Conversations.' and a circular image of a woman using a mobile device. Below this, a text block states: 'VOICEplug AI enables restaurants to offer an interactive and conversational ordering experience while reducing labor costs and increasing the average check size per order.' To the right, a chat interface shows a conversation: 'Hello Diana! What would you like to have today?' followed by the user's response '\* I'll have 1 large Chicken Cheese Pizza for delivery \*' and the AI's reply 'Sure! Would you like some to order any sides or beverages?'. A 'Voice Commerce' logo is visible in the bottom right corner of the chat area.



# Facilitate customer verification

## Facial recognition in mobile apps & kiosks



# Lifehacking

## AMELIA

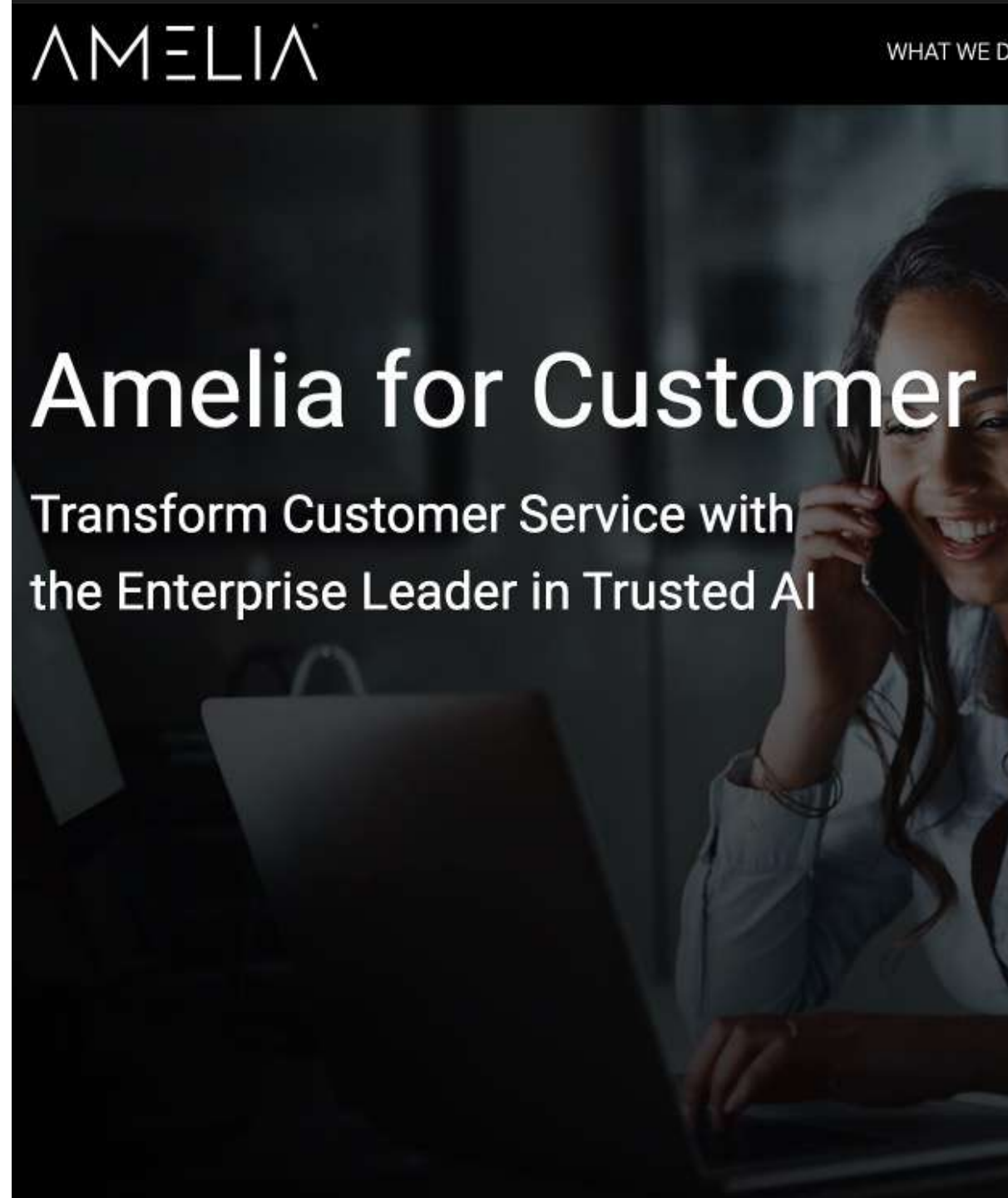
- Digital workforce
- Repetitive administration tasks
- Contact center, HR, IT, ...

AMELIA

WHAT WE D

# Amelia for Customer

Transform Customer Service with  
the Enterprise Leader in Trusted AI



# Know your buyer before you sell

Crystal gives you personality-based guidance for every email, call, and meeting.

Add to Chrome



## Lifehacking

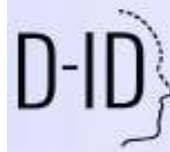
# Personalisation

- Higher commercial impact in emails
- Improved customer intimacy
- Meeting effectiveness

# Lifehacking

## Easy video creation

- Detail aids
- Introductions
- Tutorials



Products

Technology

Ethics

Pricing

## The Digital People Platform

Create and interact with talking avatars using Generative AI via D-ID's API or Creative Reality™ studio.

Try now, it's free >

Developer Hub >



MEET JASPER 🤖

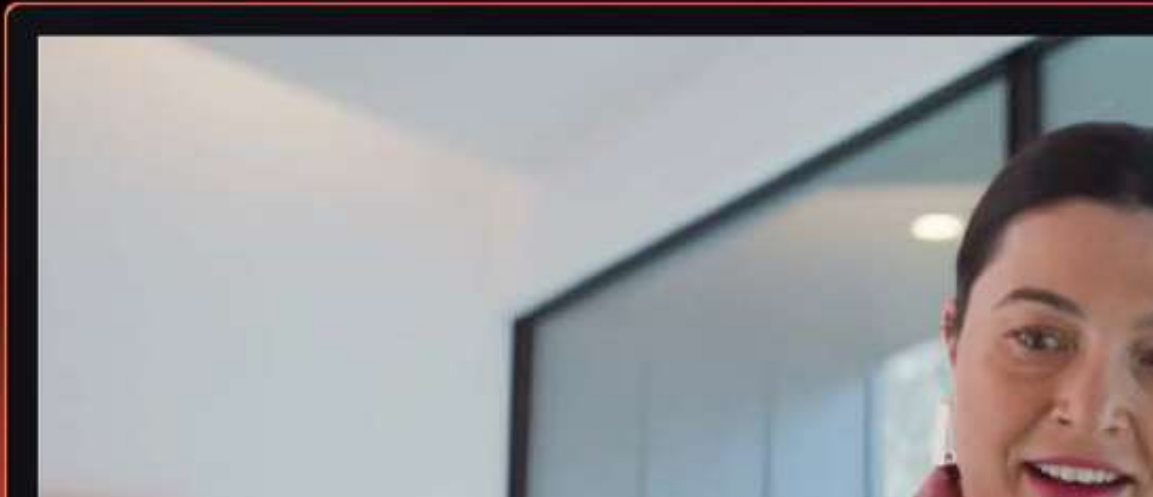
# Create amazing content 10X faster with AI.

Jasper is the generative AI platform for business that helps your team create content for your brand 10X faster, wherever you work online.

## Lifehacking

### Content creation

- Newsletters & blog post
- Social media content posts
- News articles



# Lifehacking

## Note taking

- Status meetings
- Online meeetings
- Voice conversations

## Automate your meeting notes

Fireflies.ai helps your team record, transcribe, search, and analyze voice conversations.

Get started for free

Request demo



Fireflies.ai Notetaker

USED ACROSS 62,000+ ORGANIZATIONS



# roducing Notion AI

Access the limitless power of AI, right inside Notion.  
Work faster. Write better. Think bigger.

Get started



ive Presentation

xt Friday



## Lifehacking

### Content creation

- Improved noted taking
- Executive summary generation

# Lifehacking

## Smart writing assistant

- Correct errors
- Learn based on your mistakes
- Improve & expand vocabulary

## A New Generation i

Introducing GrammarlyGO, the suite of generative AI in AI communication assistance. To start using GrammarlyGO, sign up or sign in to Grammarly—or request a demo. GrammarlyGO is available, sign up or sign in to Grammarly—or request a demo.

[Get Grammarly](#)

[Get Early Access](#)



Dear Skylar,

Thank you for inquiring about your AcmeCo subscription renewal. To proceed with the renewal, kindly go to your account page and select the "renew subscription" option.

If you have any further questions or concerns, please don't hesitate to contact us.

Best Regards,  
AcmeCo Team

[▶ Watch Full Video](#)





Copilot

Hi Lilly, how can I help get you started?

Create a short presentation based on VanArsdel\_Proposal

I've made the VanArsdel\_Proposal into 5 slides that should take about 10 minutes to present.

Undo

1 reference

Add animations to this slide

Apply a modern style to the presentation

Describe what you'd like to create, or type

Product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sale
Biodegradable Cleaning Products	Low	4345	\$10	\$352	\$1,518
Biodegradable Cleaning Products	Low	4245	\$10	\$352	\$1,494
Biodegradable Cleaning Products	None	4124	\$10	\$352	\$1,452
Biodegradable Cleaning Products	Medium	3954	\$10	\$352	\$1,393
Biodegradable Cleaning Products	Low	4952	\$10	\$127	\$629
Recycled Can	Low	4903	\$5	\$127	\$623
Natural Personal Care Products	Low	1954	\$270	\$302	\$590
Biodegradable Cleaning Products	High	1990	\$220	\$302	\$599
Compostable Food Packaging	Low	1254	\$3	\$380	\$477
Natural Personal Care Products	Medium	1465	\$224	\$302	\$441
Sustainable Snack Packaging	Medium	1410	\$120	\$302	\$426
Natural Personal Care Products	Medium	1369	\$224	\$302	\$413
Compostable Food Packaging	Medium	1052	\$3	\$380	\$399
Compostable Food Packaging	Low	980	\$312	\$380	\$373
Sustainable Snack Packaging	Medium	1298	\$120	\$302	\$391
Compostable Food Packaging	None	954	\$3	\$380	\$362
Biodegradable Cleaning Products	Low	2785	\$110	\$127	\$354

Copilot

Analyze this quarter's business results and summarize three key trends

Key trends:

- Sales are trending up for all customers, except Proseware which is down this quarter.
- Manufacturing costs are down this quarter after an increase in Q3.
- Low discount products made up nearly half of total sales last month.

Explain

Describe what you'd like to create, or type / for suggestions

# Microsoft 365 Copilot

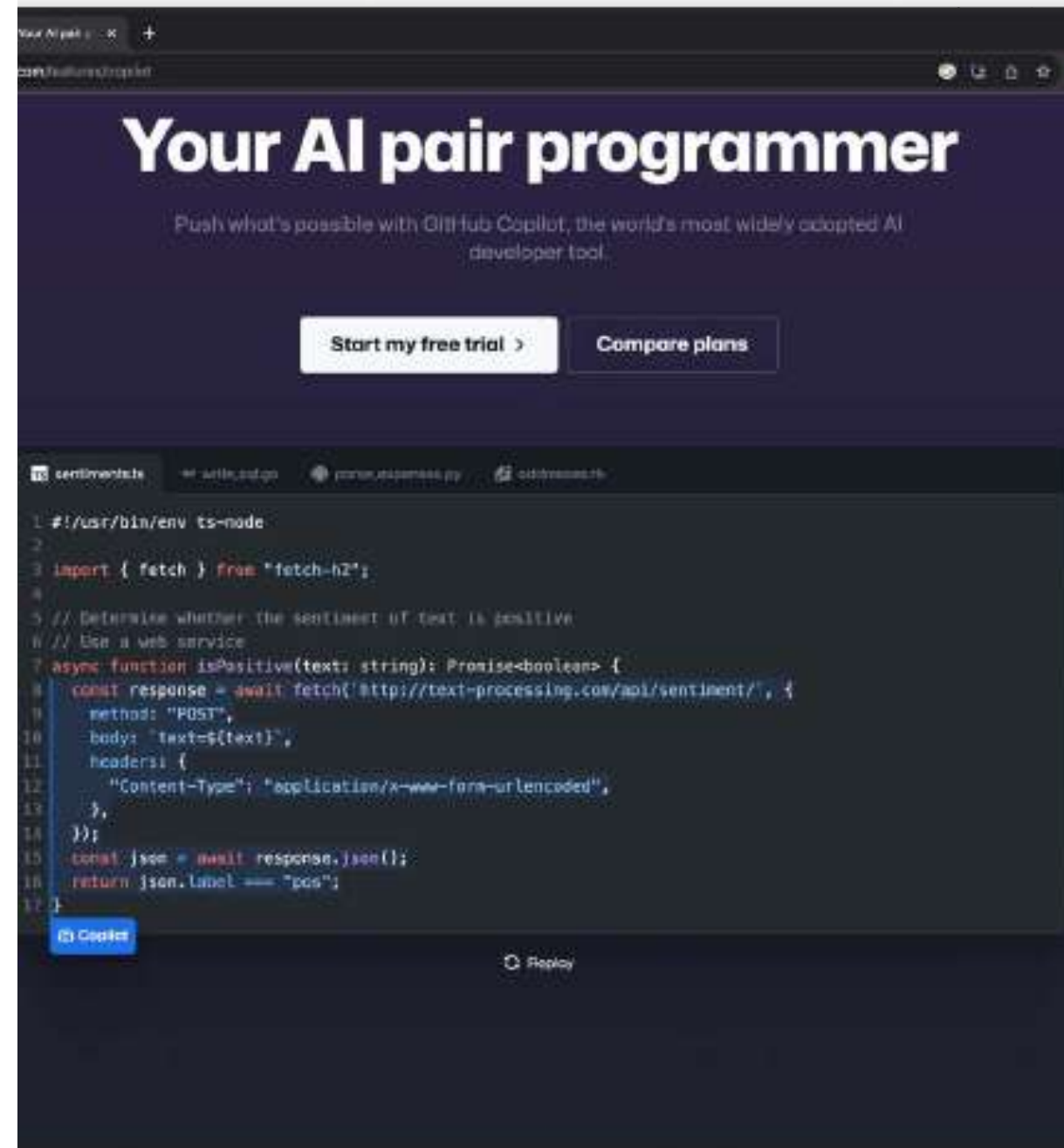
## your copilot for work

Create slides, reports, documents, ... directly in MS 365 (Office)

# Lifehacking

## Github AI pair programmer

Generate comments ... and AI will generate the code



The screenshot shows the GitHub Copilot website interface. At the top, it says "Your AI pair programmer" in large white text on a dark blue background. Below this, a subtitle reads "Push what's possible with GitHub Copilot, the world's most widely adopted AI developer tool." There are two buttons: "Start my free trial >" and "Compare plans". Below the buttons, there is a code editor window showing a file named "sentiments.ts". The code is as follows:

```
1 #!/usr/bin/env ts-node
2
3 import { fetch } from "fetch-h2";
4
5 // Determine whether the sentiment of text is positive
6 // Use a web service
7 async function isPositive(text: string): Promise<boolean> {
8   const response = await fetch("http://text-processing.com/api/sentiment/", {
9     method: "POST",
10    body: "text=${text}",
11    headers: {
12      "Content-Type": "application/x-www-form-urlencoded",
13    },
14  });
15  const json = await response.json();
16  return json.label === "pos";
17 }
```

At the bottom of the code editor, there is a blue "Copy" button and a "Replay" button.



LegalFly got nominated twice for the Finals of the British Legal Tech Awards. [Learn More](#)

# The Premier AI Copilot for Legal Teams

The **most specialised Legal AI Copilot** for litigation, contract review & drafting to supercharge your legal team's efficiency and accuracy.

Request Access

## Lifehacking

# Contract review, drafting, ...

Putting Large Language Models to work for legal contracts.



**How to make it work ?**

## Five key areas

# That deliver results

# 1

### Your goal is the starting point

How does *your* project contribute to an overall strategy?

# 2

### Problem definition experts

Algorithms are only of value when they solve the right problem.

Have the business owners confirm the problem.

# 3

### Result-oriented data engineering

Tap on data and exploit it with data-wrangling and cleansing techniques.

## Five key areas

# That deliver results

## 4

### Transparent & accessible language

No black box communication: explain in plain language on the why, how and what.

## 5

### Knowledge transfer into daily operations

Develop data skills, a fundamental part for implementing data-driven decisions.

Make sure knowledge and expertise are shared.





cropland  
data driven decisions

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2600 BERCHEM

**+32 3 501 04 99**

   /cropland

# Chat(GPT) Prompting Strategies

## Tips & tricks

- Be specific & set the format (e.g. bullet points vs long read)
- Define the tone of voice and the actor (e.g. expert vs newbie)
- Provide context & define the scope
- List keywords to be used & specify the constraints (e.g. word count)
- Specify the target audience & the language of the output
- Ask to generate points of view with references & counterarguments
- Indicate to use (or not use) industry-specific terminology
- To avoid inappropriate content, set boundaries (e.g. family-friendly) and request content moderation (e.g. make sure content is appropriate to xxx)

...



