

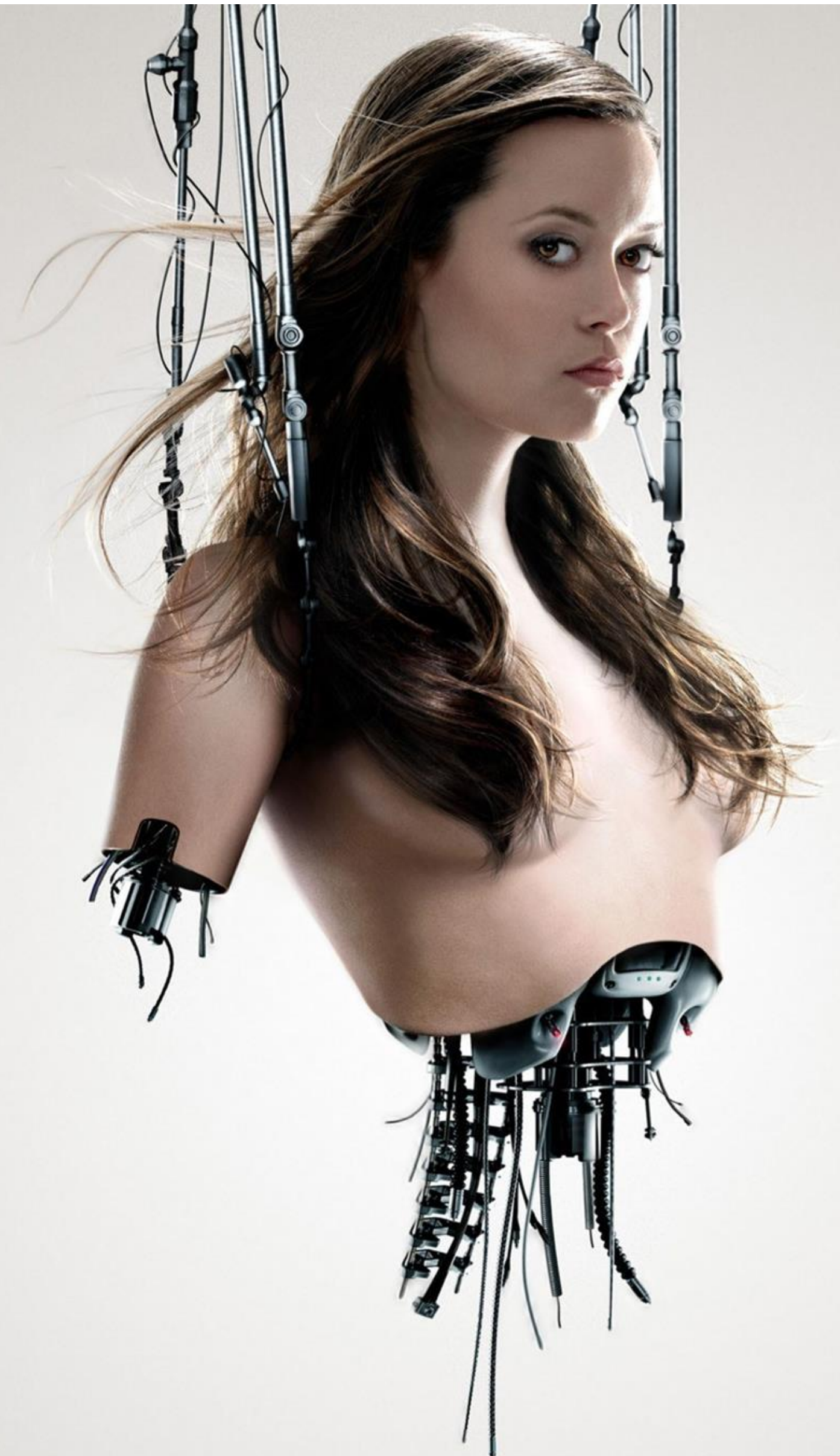
ARTIFICIAL INTELLIGENCE & FASHION



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WHAT IS AI?

Whenever we hear the term “Artificial Intelligence (AI)”, the following questions may start buzzing in our head?

- Robots?
- Artificial Human-being?
- Artificial Animal?
- ...
- A threat to human being?
- ...
- ...
- etc.?

But the actual question is:

What is Artificial Intelligence (AI)?

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WHAT IS AI?

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APPLICATIONS
OF AI

3
TASKS OF AI

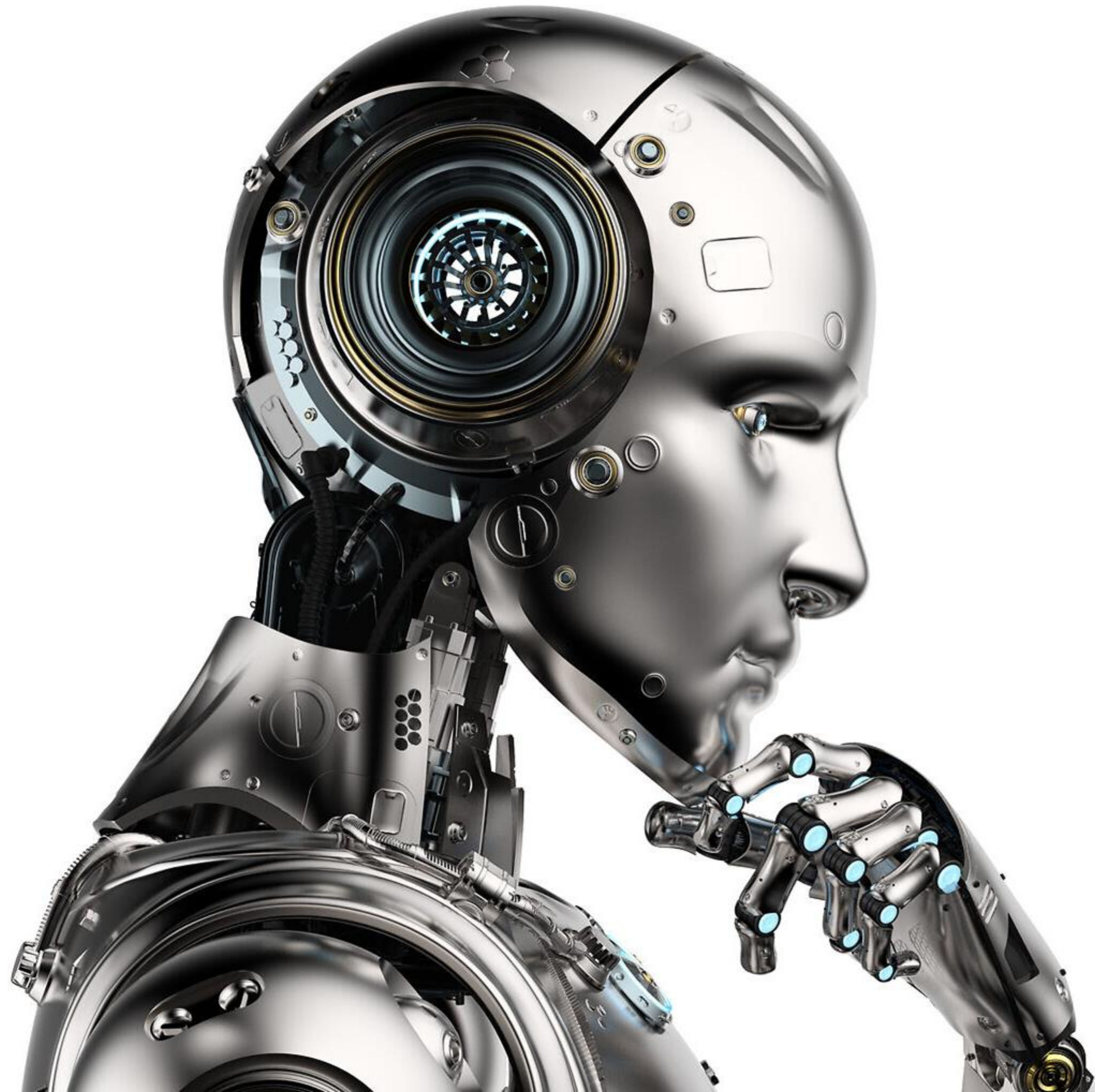
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WHAT IS AI?



WHAT IS AI?

The term '**artificial intelligence**' was first used at a **1956** workshop held at Dartmouth College, a US Ivy League university, to describe the "**science and engineering of making intelligent machines, especially intelligent computer programs**".

— McCarthy et al., 2006, p. 2

A branch of modern science and technology aiming at the **exploration of the secrets of human intelligence** on one hand and **the transplantation of human intelligence to machines** as much as possible on the other hand, so that **machines would be able to perform functions as intelligently as they can**.

— Zhong, 2006, p. 90

Machines capable of **imitating certain functionalities of human intelligence**, including such features as **perception, learning, reasoning, problem solving, language interaction, and even producing creative work**.

— COMEST, 2019

Human being has two capabilities that makes him uniquely intelligent:

- Learning
- Problem Solving

Any system with these two abilities can mimic the cognitive functions associated to human mind.



Sony Aibo Robot

WHY DO WE EVER NEED AI?

WHY DO WE EVER NEED AI?

“People read around 10 MB worth of material a day, hear 400 MB a day, and see 1 MB of information every second.”

— The Economist, Nov. 2006

In 2015, consumption will raise to 74 GB a day.

— UCSD Study 2014



APPLICATIONS OF AI IN OUR EVERYDAY LIFE?



- Personalization
 - Recommendation
 - Online Advertising
 - Gmail auto-complete
- Map Routing
- Autonomous Driving
- Medical Image Processing
- Banking Mortgage Approval
- Voice Assistance
 - Amazon Alexa
 - Apple Siri
 - Samsung Bixby
- Text-2-Speech & Speech-2-Text
- Weather Forecast
- Auto Smile Photo Shooting
- Online Security Systems
- and many more...

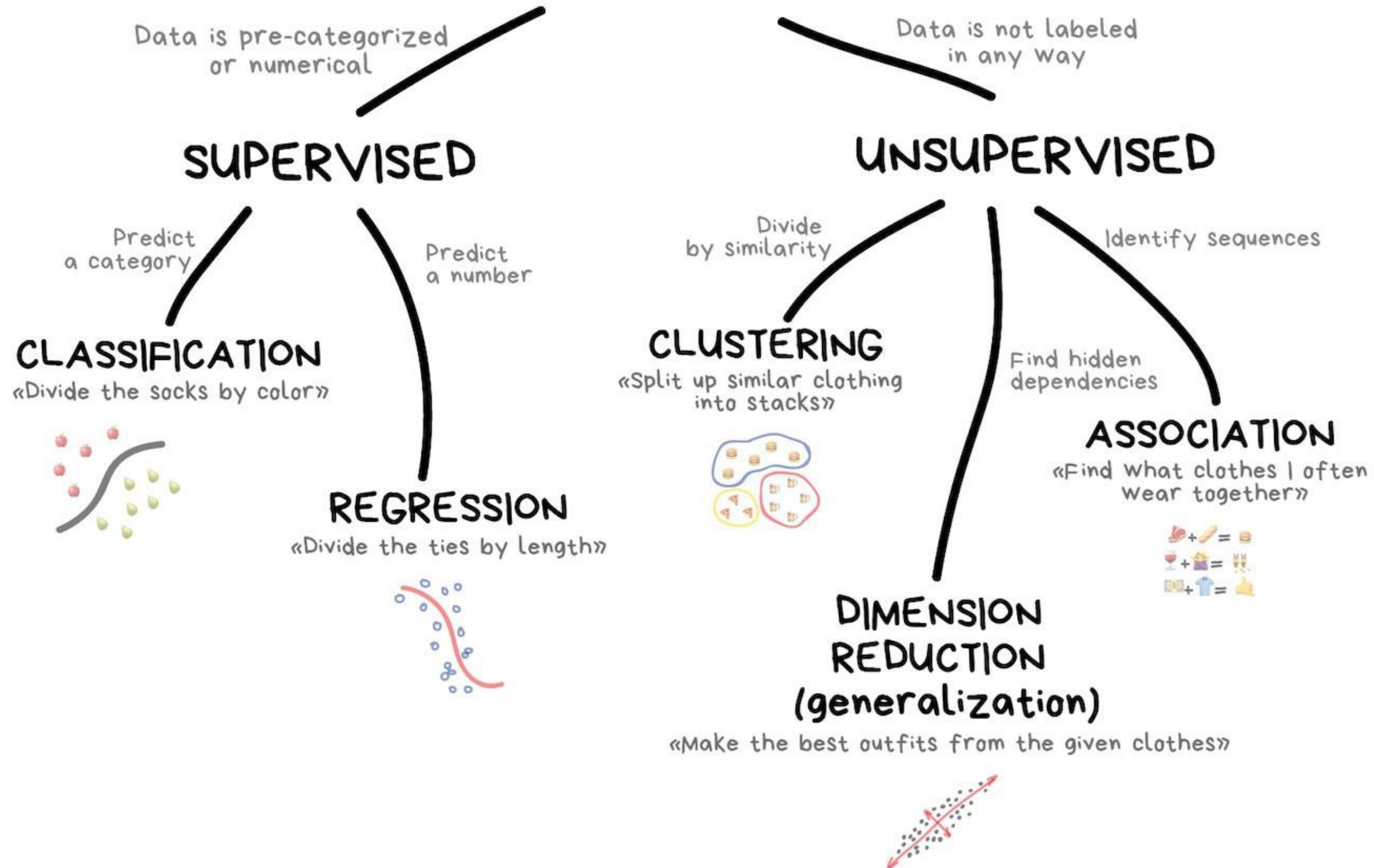
Recommender systems using AI has increased the revenue of companies dramatically.

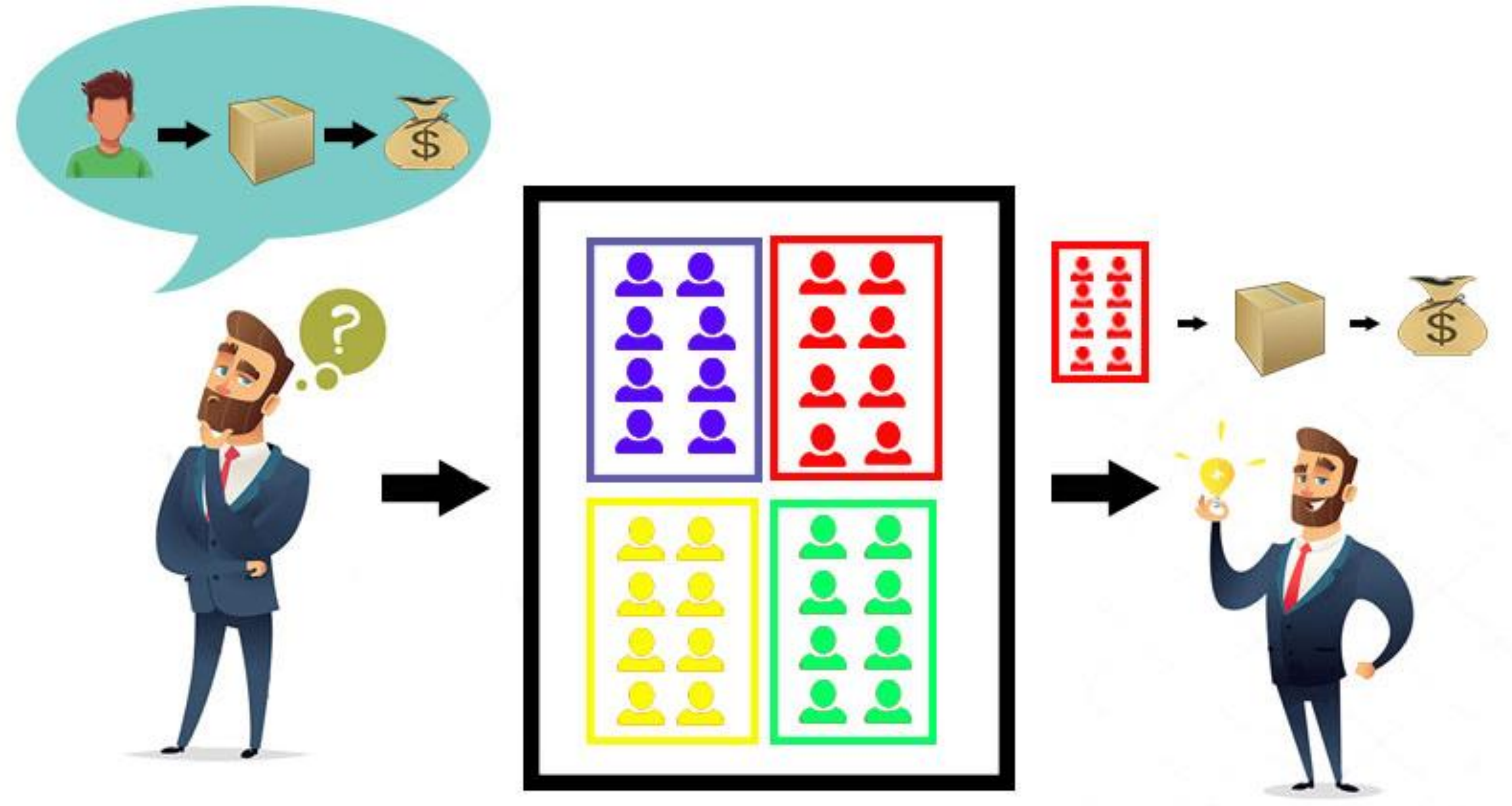
- SSENSE: 8% more revenue with only the initial version
- Netflix: 2/3 of the movies watched are recommended
- Google News: recommendations generate 38% more click-through
- Amazon: 35% sales from recommendations
- Choicestream: 28% of the people would buy more music if they found out what they like.



TASKS OF AI

CLASSICAL MACHINE LEARNING

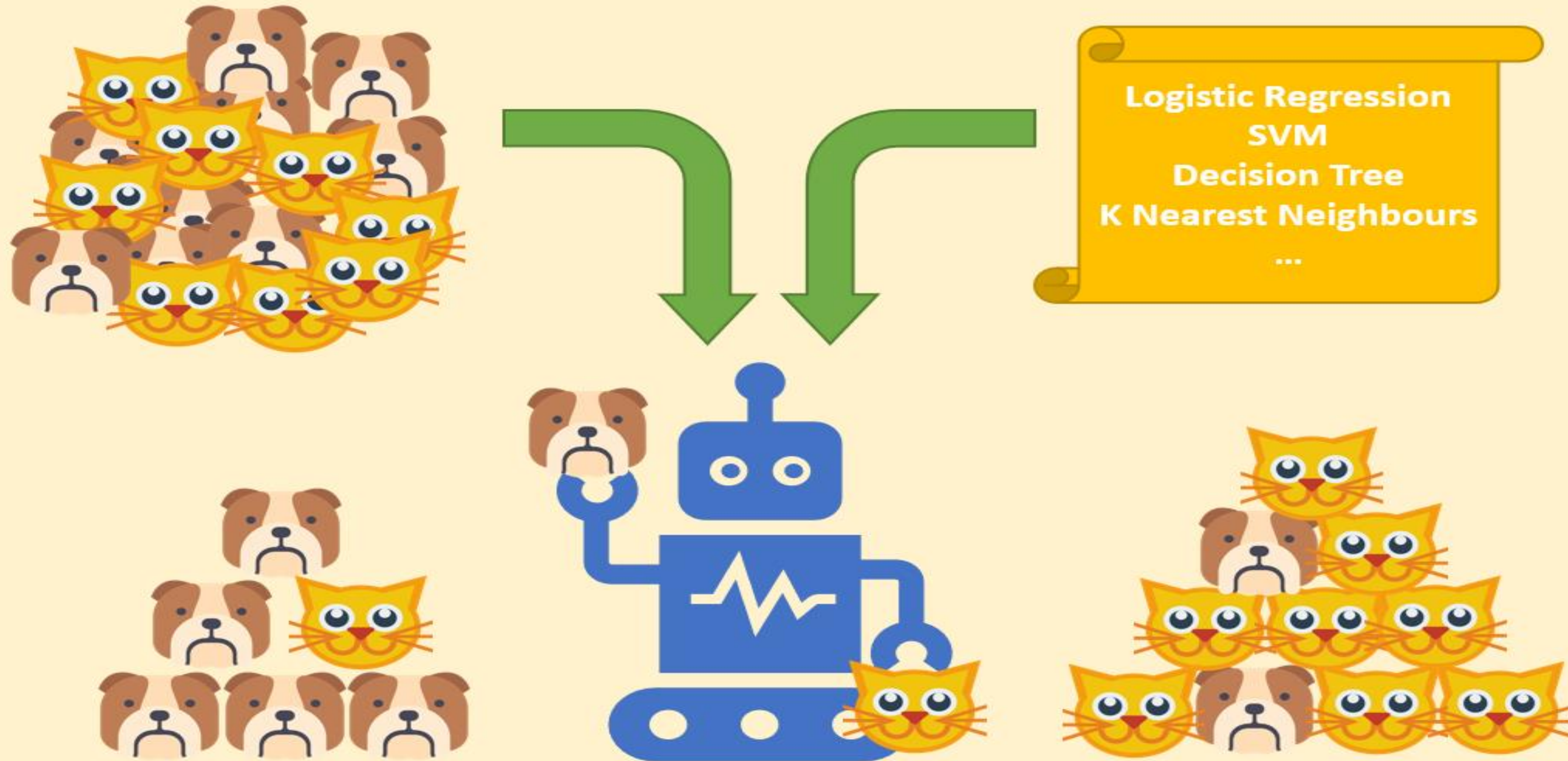


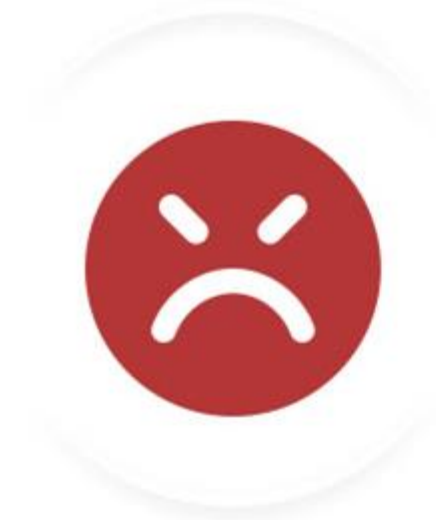


Trying to determine the appropriate audience for different types of Personal Shopping services (e.g. personal styling & exclusive discounts, runway tickets, first access to hype launches, etc.)

Using clustering algorithm on the eligible customer base

Providing the service to the targeted audience





Negative

I'm dissatisfied with your customer service.
No one was able to help me with the
problems I had with using your product.



Neutral

The product has multiple features
that are suitable for users with different
levels of experience.

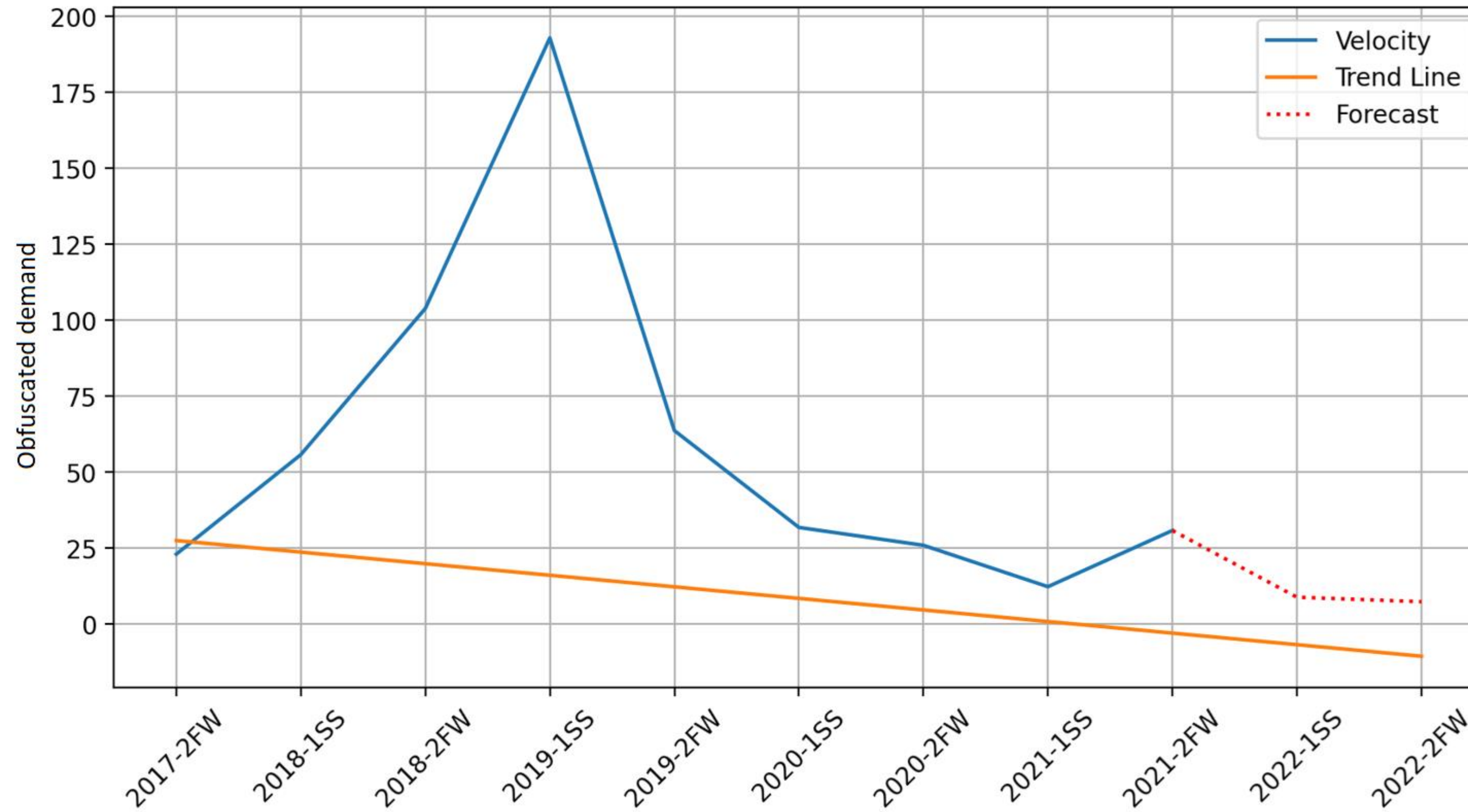


Positive

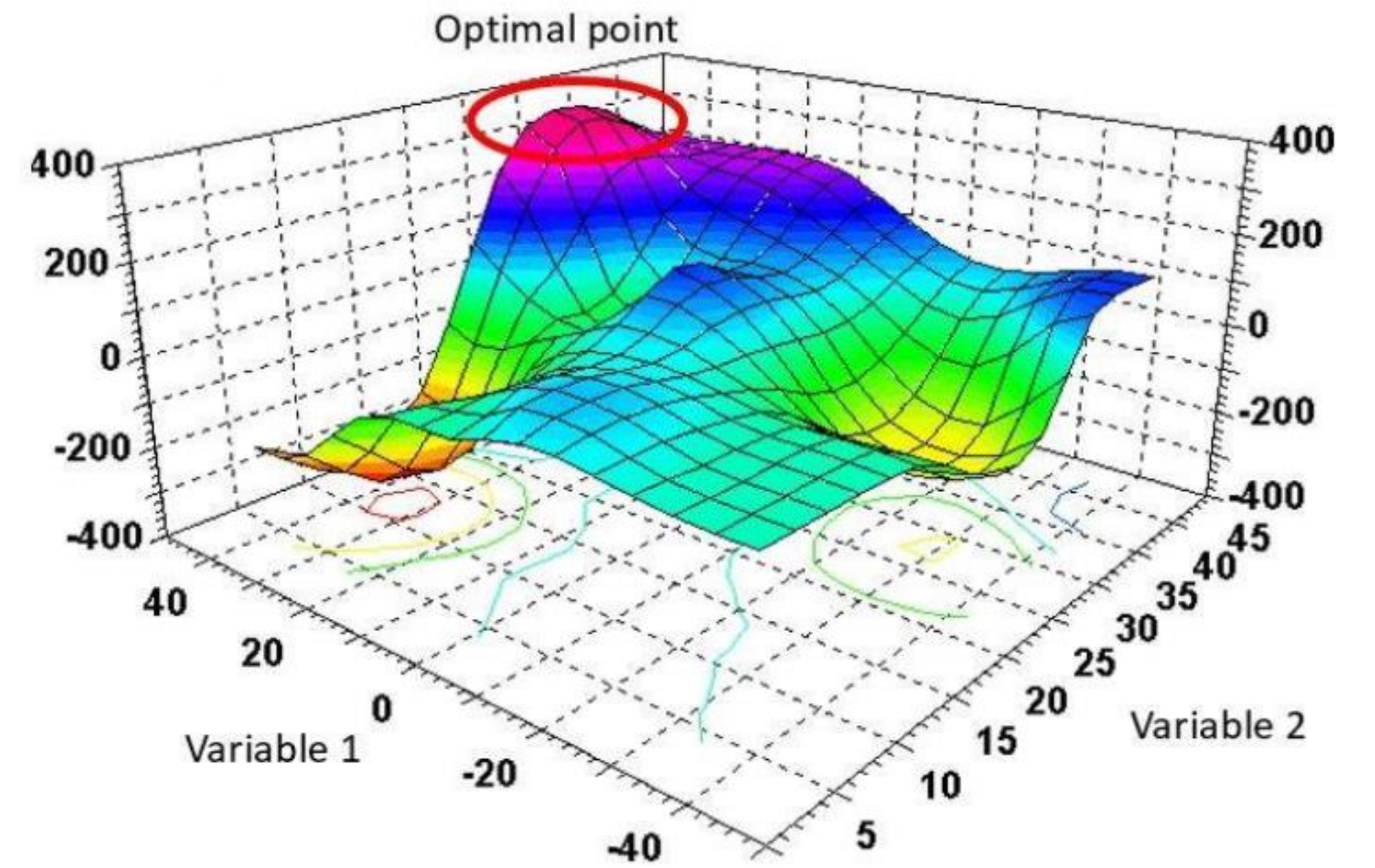
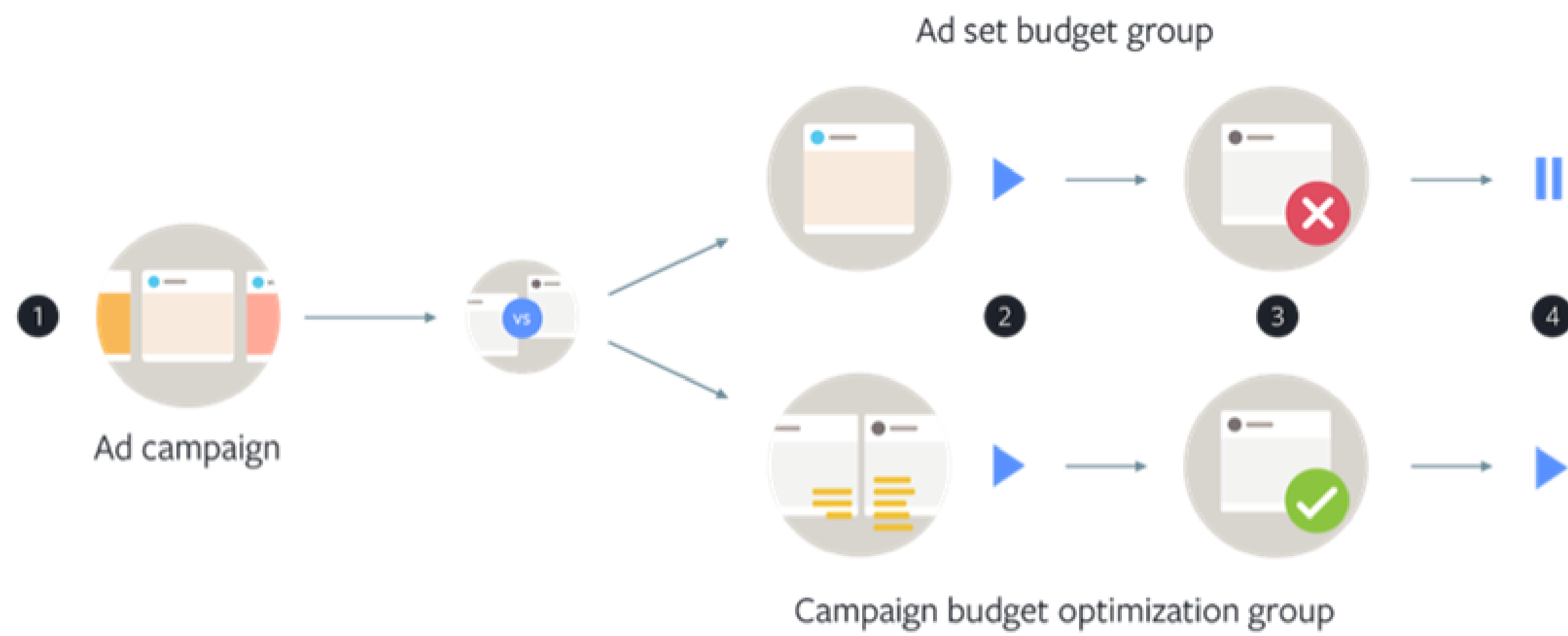
I really enjoy how easy this product
is to use and how it successfully helps
my team complete their day-to-day tasks.

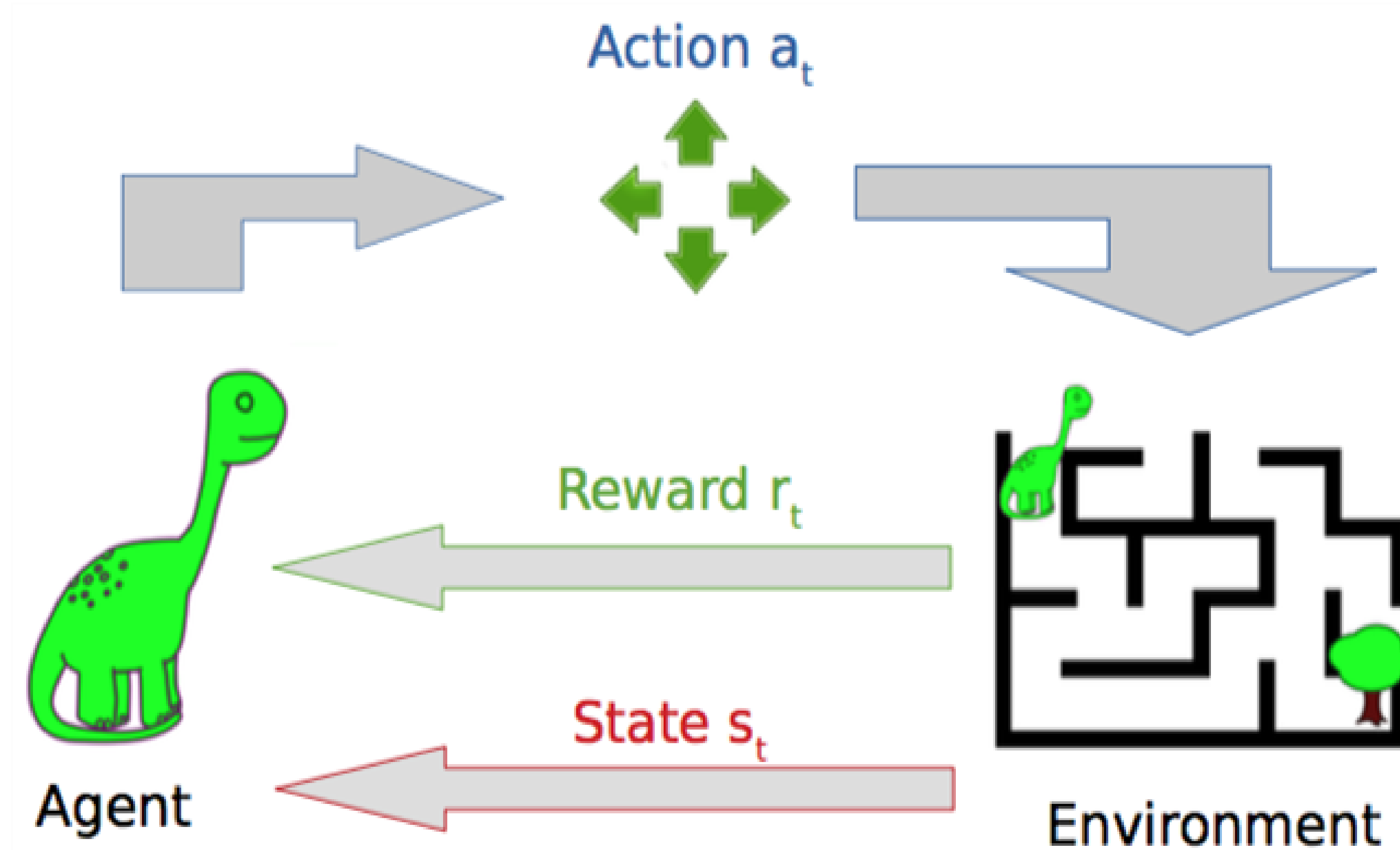


Black Converse Edition Half Heart Chuck 70 High Sneakers
Comme des Garçons Play
Men → SNEAKERS → HIGH TOP SNEAKERS



Historical demand and its future forecast of a product over time





The agent is currently in a position (State) within an environment. It takes an action a_t within the environment, and it results with a reward r_t and moves the agent to a new position (State) s_t . The agent's goal is to maximize the reward over time, by exploring different actions in different states.

SPOT THE AI



ART OF FASHION



- **Jason Allen** entered a fine art competition with an **AI-generated artwork** and **won the first prize**.
- Allen won in the digital art category with his artwork called '**Théâtre D'opéra Spatial**' using an **AI software called Midjourney**.



AI can generate fashion, something which has not been existed before.

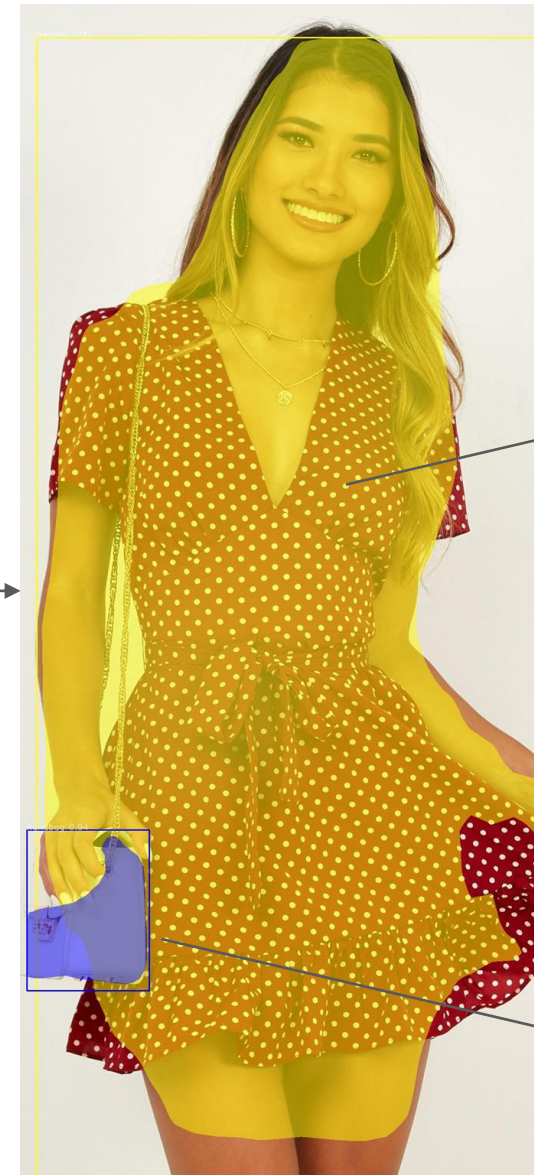
AI CAN:

- Style
- Design
- Manufacture
- Be creative to some degree
- Optimize the process

| | | | | | |
|--|--|--|--|--|---|
| | | <ul style="list-style-type: none"> ■ null ■ bag ■ blouse ■ cape ■ hair ■ loafers ■ skin ■ skirt ■ stockings | | | <ul style="list-style-type: none"> ■ null ■ belt ■ hair ■ jacket ■ jeans ■ shirt ■ shoes ■ skin ■ sunglasses ■ tie |
| | | <ul style="list-style-type: none"> ■ null ■ bag ■ boots ■ coat ■ hair ■ skin ■ skirt ■ stockings ■ sweater | | | <ul style="list-style-type: none"> ■ null ■ bag ■ coat ■ hair ■ jeans ■ shoes ■ skin ■ sunglasses ■ t-shirt |
| | | <ul style="list-style-type: none"> ■ null ■ bag ■ blouse ■ dress ■ hair ■ shoes ■ skin | | | <ul style="list-style-type: none"> ■ null ■ accessories ■ belt ■ blouse ■ hair ■ hat ■ purse ■ shoes ■ skin ■ skirt |
| | | <ul style="list-style-type: none"> ■ null ■ coat ■ hair ■ pants ■ sandals ■ skin ■ t-shirt ■ wallet | | | <ul style="list-style-type: none"> ■ null ■ dress ■ hair ■ skin ■ wedges |



Visual Search



Segmented Image



MOLLY GODDARD
Red Cotton Mini Dress
\$1190



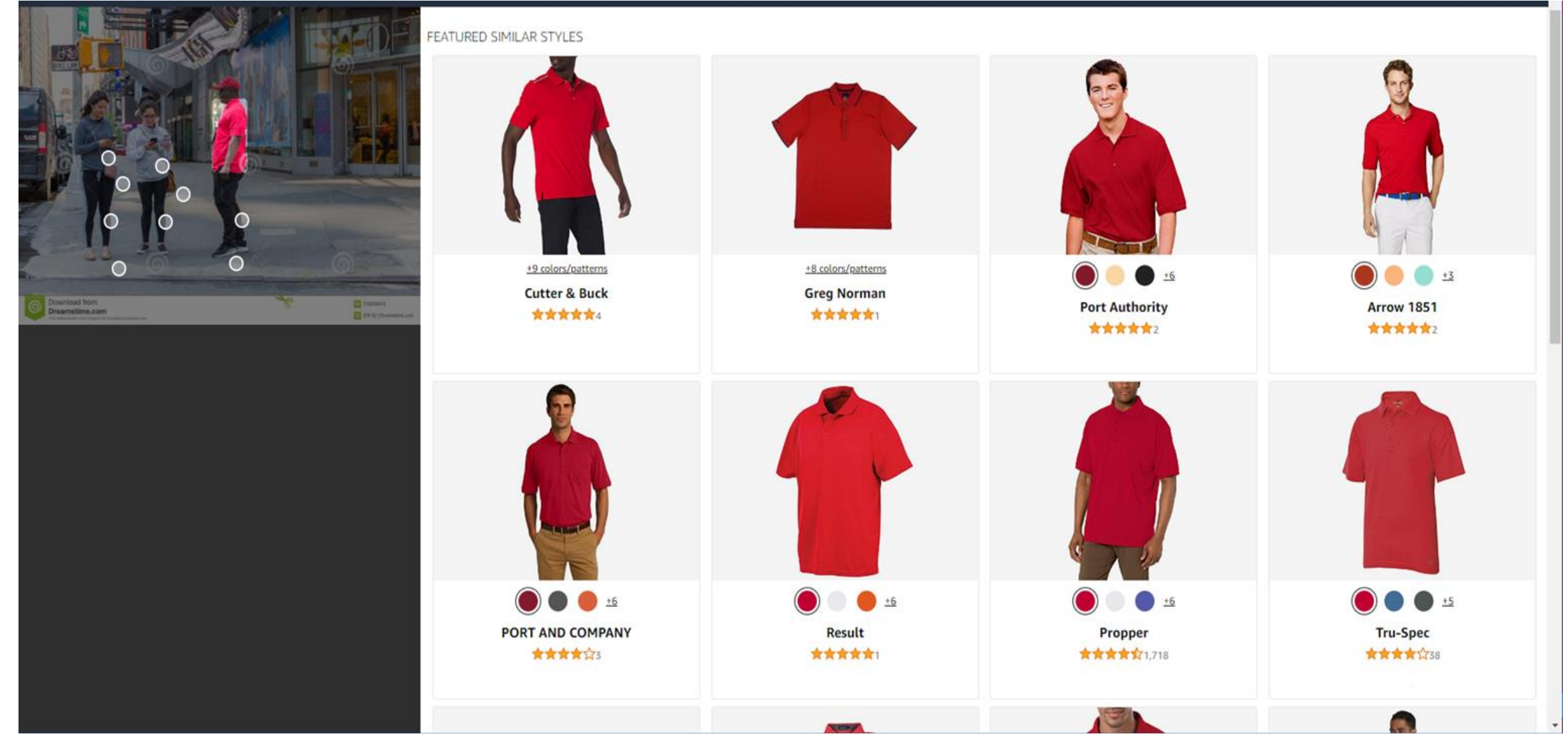
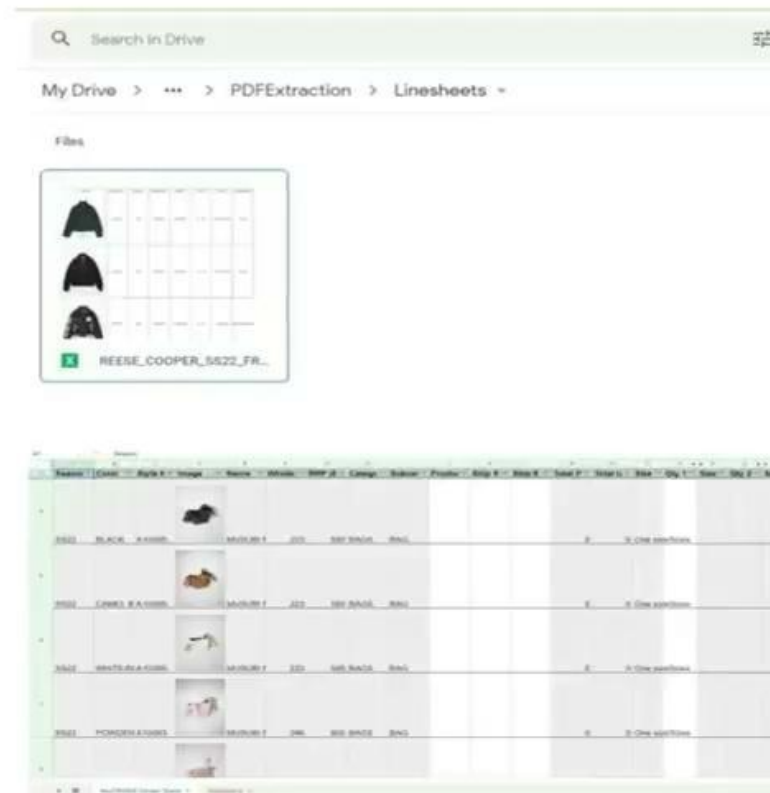
DOLCE & GABBANA
White Micro Shoulder Bag
\$1075

AI Based Recommendation in Product Page

Reference Files : Input and Output

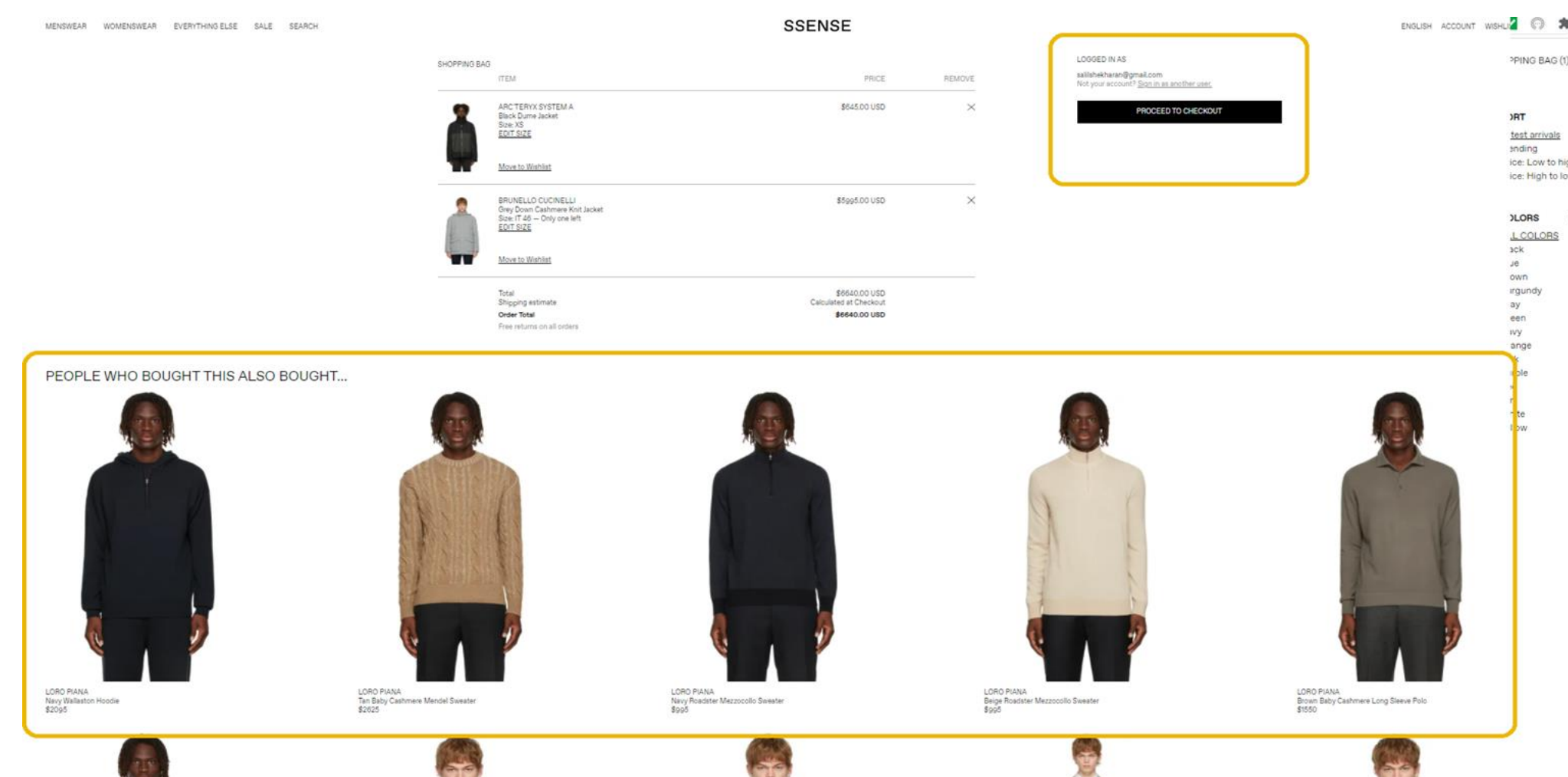


Output - Linesheet Consumable (xlsx)



stylesnap by amazon

Hyper Personalization by Industry Leaders







AI can generate fashion, something which has not been existed before.

AI CAN:

- Style
- Design
- Manufacture
- Be creative to some degree
- Optimize the process

AI CANNOT:

- Understand
Why do we need clothing?
- Feel
How does it feel to wear a dress?
- Experience
How is it like to wear a dress?



AI @SSENSE

Ferrari McLaren

Data Science (DS) team at SSENSE is leveraging AI in multiple domains to enhance the overall performance of company and the customers experience.

We are using AI in multiple domains, such as:

- **Buying**
Predicting the future demand of the products
- **Pricing**
Optimizing revenue / margin from our inventory
- **Network Planning**
Optimizing stock allocation between fulfillment centers (FCs) & transportation mode to improve customer service
- **Recommendations**
Providing intelligent recommendations to the customers
- **Online Advertising**
Optimizing online advertising campaigns
- **Data Science as a Service**
DS team provide AI/ML solutions wherever it is needed. Such as assessing the lifetime value of customers, & intelligent fraud detection on customers' transactions

and initiatives continue...



AI REQUIREMENTS & INGREDIENTS

In order to deliver AI-driven tools and features, we need to have proper ingredients:

- **Data (Data Curation)**
- Software & Hardware Infrastructure
- Professional Team

ETHICS IN AI



Deepnude

AI can become unethical and dangerous if it is trained and used irresponsibly.

- Deepnude
- Deepfake
- Unconscious bias
- In 2018, Amazon realized that their recruitment tool is discriminating against candidate based on gender.
- In 2021, an investigation by The Markup found lenders were more likely to deny home loans to people of color than to white people with similar financial characteristics.

Specifically, **80% of Black** applicants are more likely to be rejected, along with **40% of Latino** applicants, and **70% of Native American** applicants are likely to be denied.

The Associated Press found that **Chicago** lenders were **150% more likely to reject Black applicants** than similar white applicants. In **Waco, TX**, the situation is even worse because lenders were more than **200% more likely to reject Latino applicants** than white applicants.

PERSONAL FINANCE

A.I. Bias Caused 80% Of Black Mortgage Applicants To Be Denied

Kori Hale Contributor

I'm the CEO of CultureBanx, redefining business news for minorities.

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Fighting discrimination in mortgage lending

A new technique for removing bias in datasets can enable machine-learning models to make loan approval predictions that are both fair and accurate.

Adam Zewe | MIT News Office
March 30, 2022

<https://www.forbes.com/sites/korihale/2021/09/02/ai-bias-caused-80-of-black-mortgage-applicants-to-be-denied/?sh=7fabf88436fe>

FUTURE OF AI



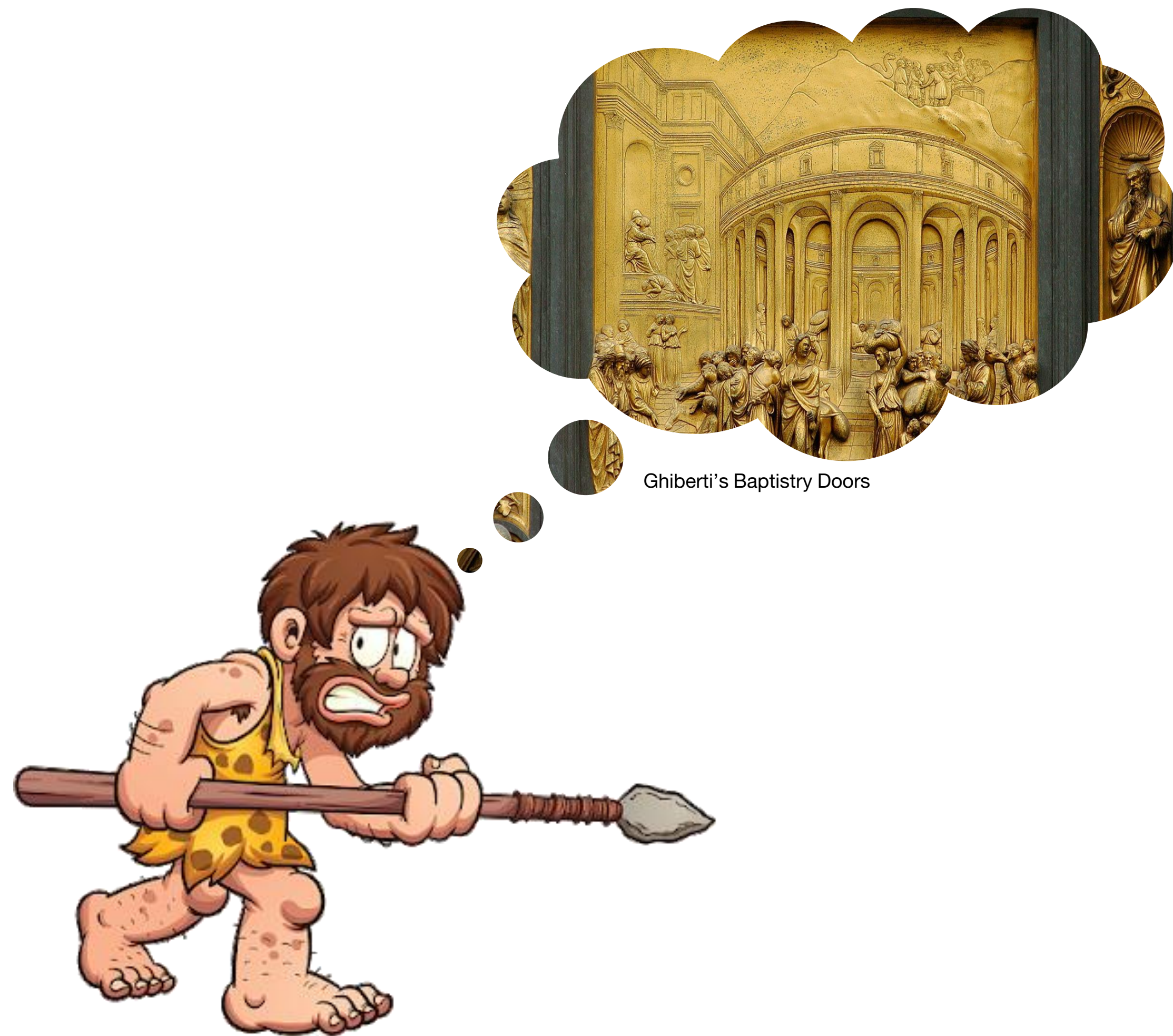
The story is first known to have been recorded in **1256** by **Ibn Khallikan**. Another version has the inventor of chess (in some tellings Sessa, an ancient Indian Minister) request his ruler give him wheat according to the wheat and chessboard problem.

The ruler laughs it off as a meager prize for a brilliant invention, only to have court treasurer's report the unexpectedly huge number of wheat grains would outstrip the ruler's resources.

On the entire chessboard there would be:
 $2^{64}-1 = \mathbf{18,446,744,073,709,551,615^*}$ grains of wheat,
 weighing about 1,199,000,000,000 metric tons.

This is over 2,000 times the annual world production of wheat, which in the period 2020-21 was an estimated 772.64 million metric tons.

* Eighteen quintillion, four hundred and forty-six quadrillion, seven hundred and forty-four trillion, seventy-three billion, seven hundred and nine million, five hundred and fifty-one thousand and six hundred and fifteen



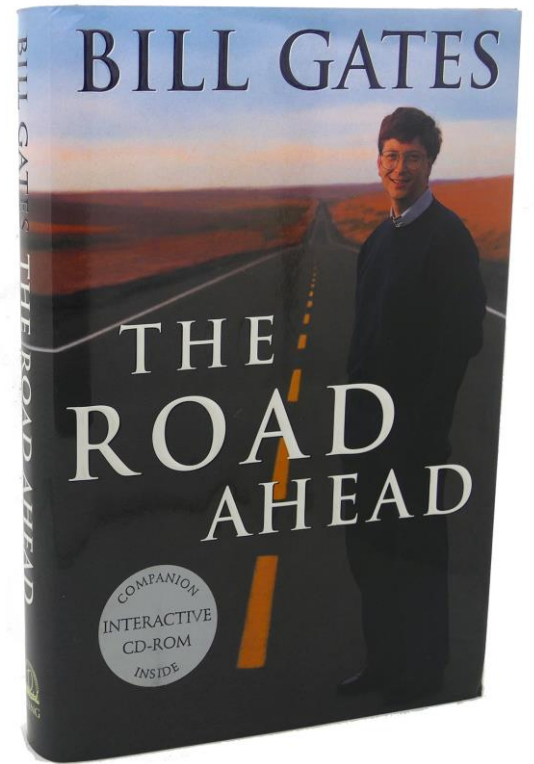
Ghiberti's Baptistery Doors

“But we can no more imagine what the information highway will carry in **twenty-five years** than a **Stone Age man using a crude knife could have envisioned Ghiberti's Baptistery doors in Florence.**”

Only when the highway arrives will all its possibilities be understood.

However, the last twenty years of experience with digital breakthroughs allow us to understand some of the key principles and possibilities for the future.”

— Bill Gates, “The Road Ahead”, 1995



Q&A