



Creeër Bedrijfswaarde met AI



Jan Meskens
Jan@Sievax.be



DAY 1



Program

DAY 1

Background about
AI, Models and Use
Cases

*Where might AI be
usefull in your
business?*

DAY 2

Value from AI

Use Case
Development



Table of Contents – Day 1

- Introduction
- History of AI
- AI Capabilities
- AI Models
- Quality of AI Models
- Generative AI
- Use Cases
- AI Breakthroughs and Trends
- Agenda for Day 2



Table of Contents – Day 1

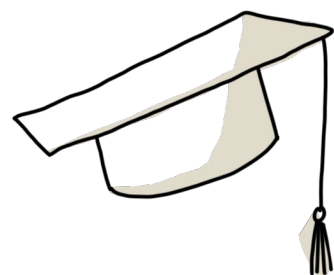
- **Introduction**
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Jan Meskens



Data and AI Strategy
Consultant



Lecturer of several AI and
Data Strategy Trainings



Founder and Manager
of Sievax



Jan Meskens



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medium.com/@meskensjan



www.sievax.be



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Who are You – Round Table

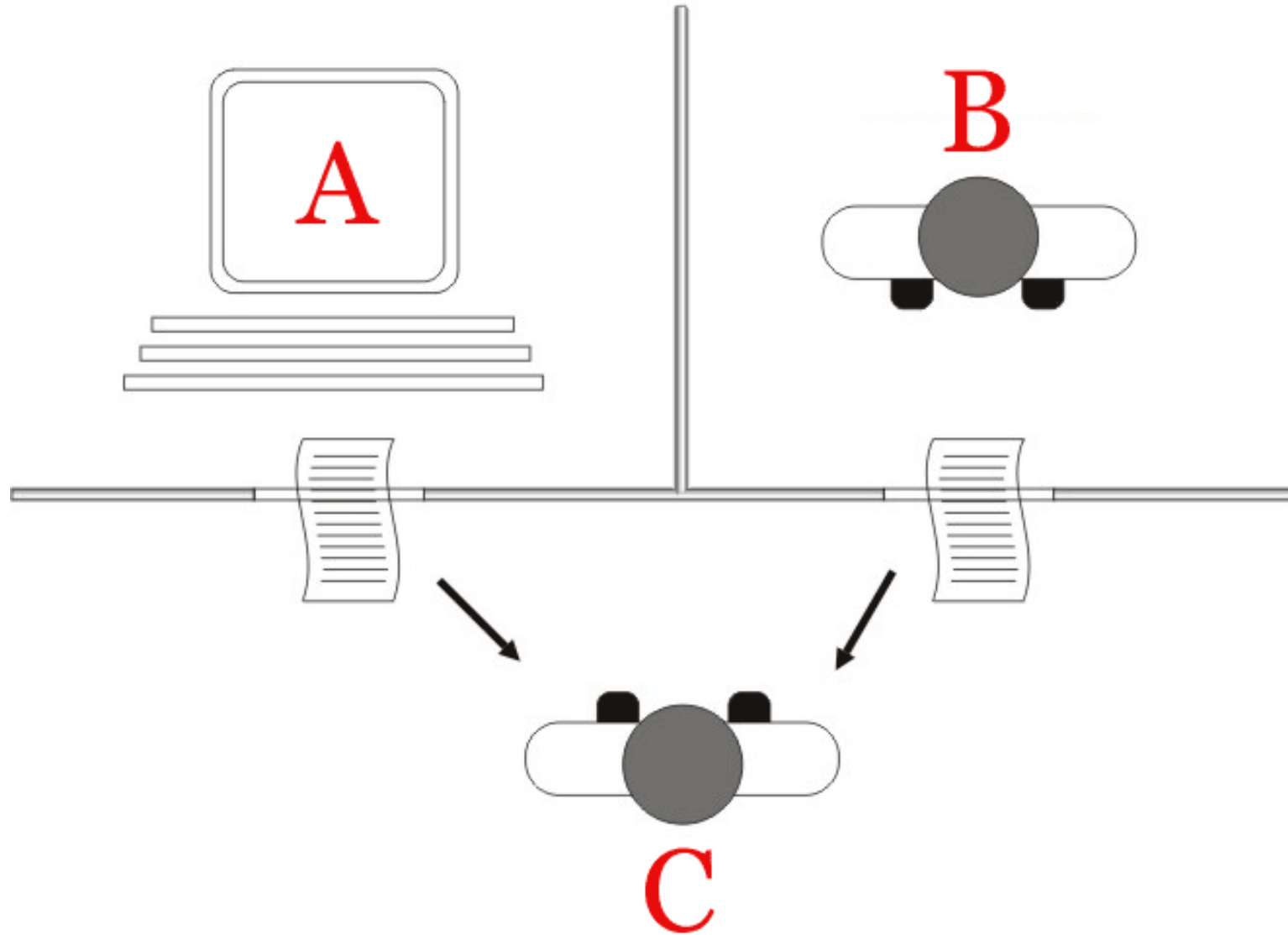
- Company
- Function
- Knowledge about AI
- Do you use AI?



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1949 – Turing Test



1956 – Dartmouth Summer Research Project on Artificial Intelligence



A Proposal for the
DARTMOUTH SUMMER RESEARCH PROJECT ON ARTIFICIAL INTELLIGENCE

June 17 - Aug. 16

We propose that a 2 month, 10 man study of artificial intelligence be carried out during the summer of 1956 at Dartmouth College in Hanover, New Hampshire. The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves. We think that a significant advance can be made in one or more of these problems if a carefully selected group of scientists work on it together for a summer.

The following are some aspects of the artificial intelligence problem:

1) Automatic Computers

If a machine can do a job, then an automatic calculator can be programmed to simulate the machine. The speeds and memory capacities of present computers may be insufficient to simulate many of the higher functions of the human brain, but the major obstacle is not lack of machine capacity, but our inability to write programs taking full advantage of what we have.

2) How Can a Computer be Programmed to Use a Language

It may be speculated that a large part of human thought consists of manipulating words according to rules of reasoning

1964 – Eliza

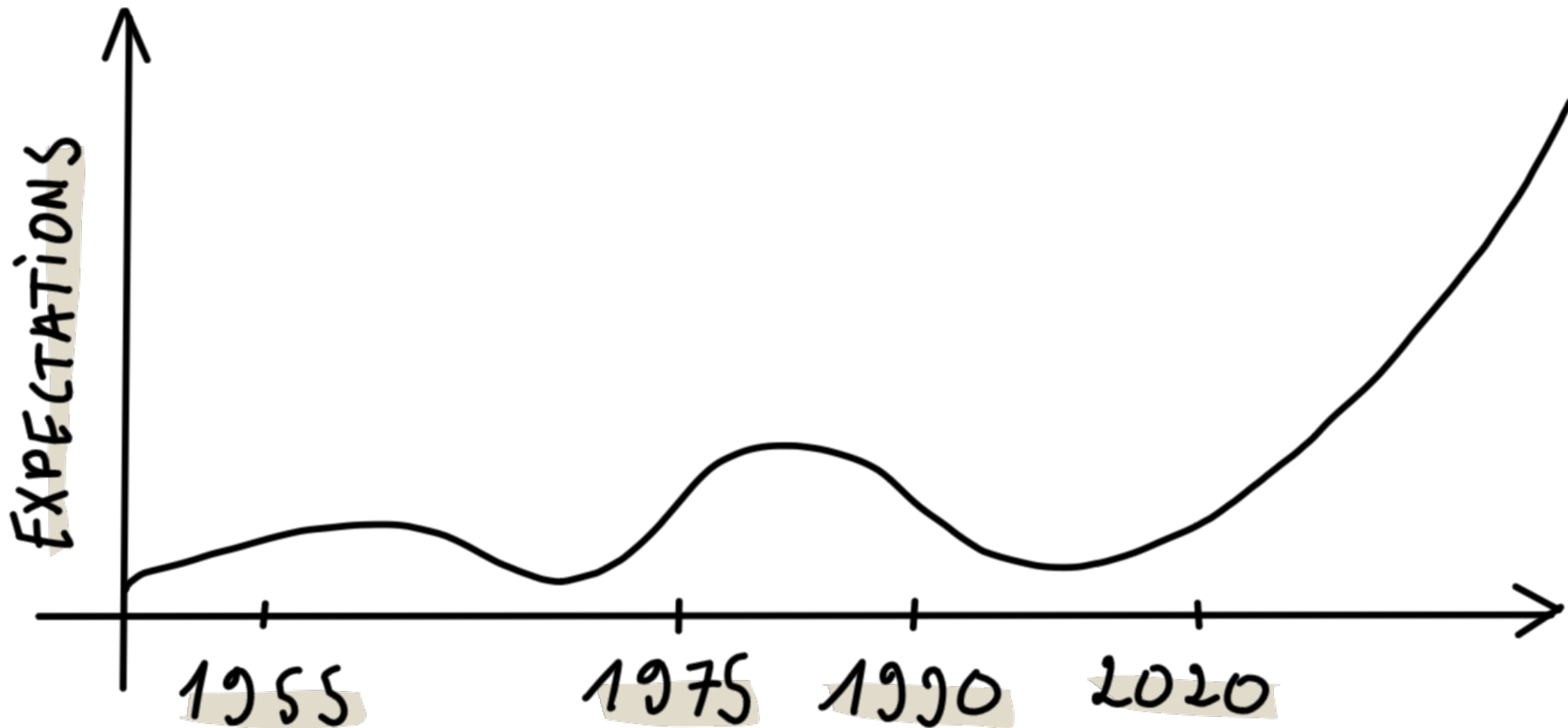


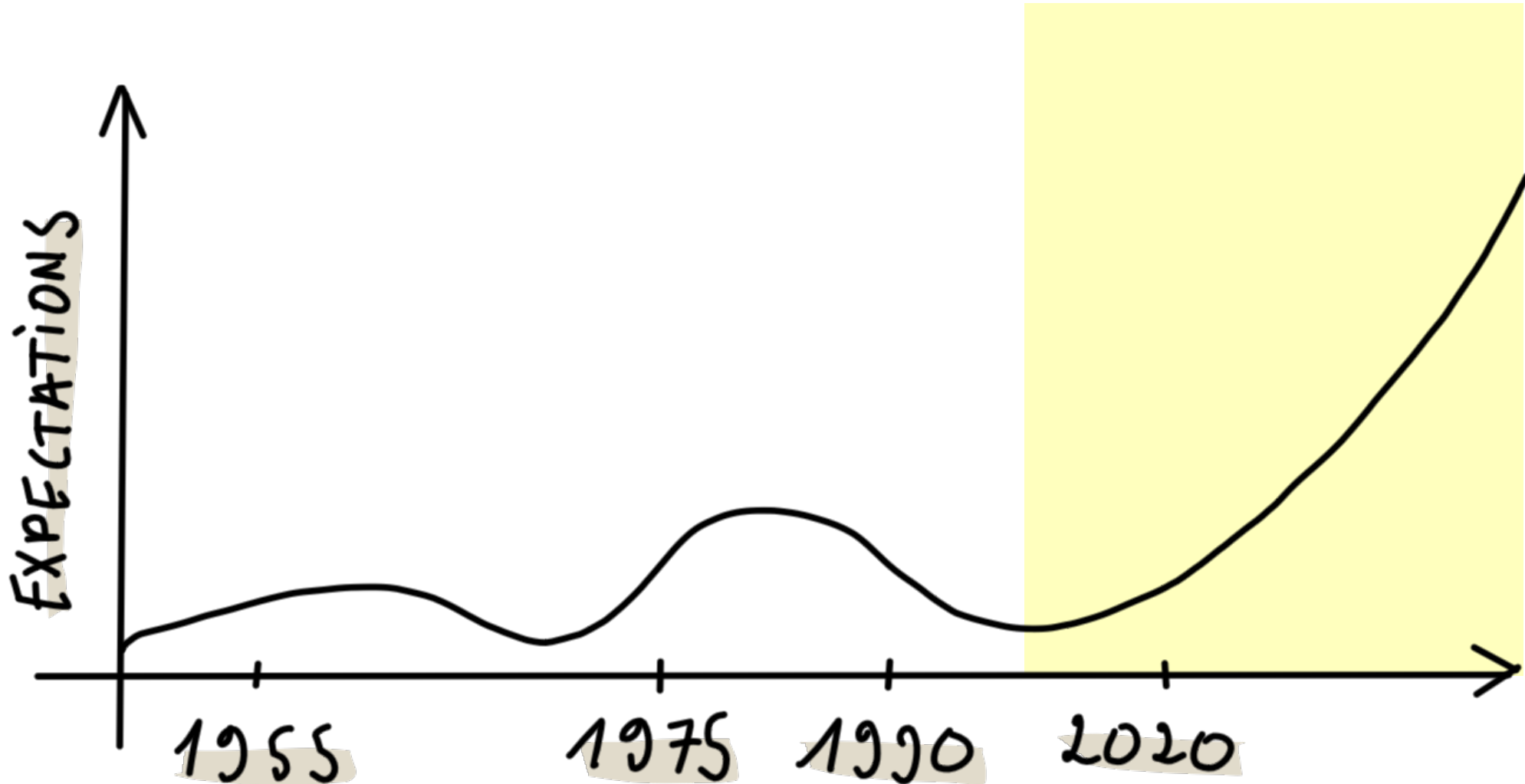
... from your company. I was
with your prompt delivery. I
opened the package, I found it
either in the box or with the
it is essential that our account
department have the invoice by
the first quarter. It would be
accountants and I if you will
other invoice as soon as pos

1967 – Unimate



AP

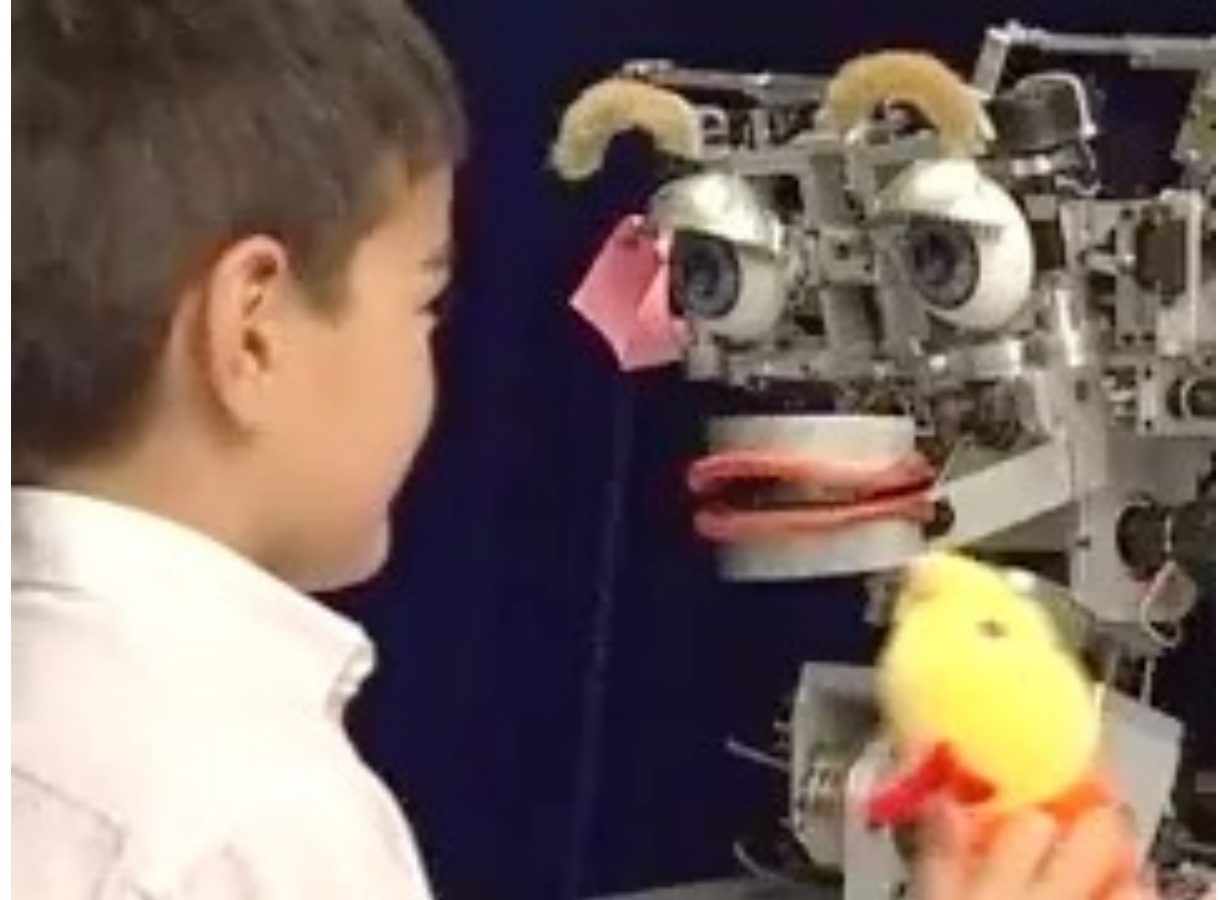
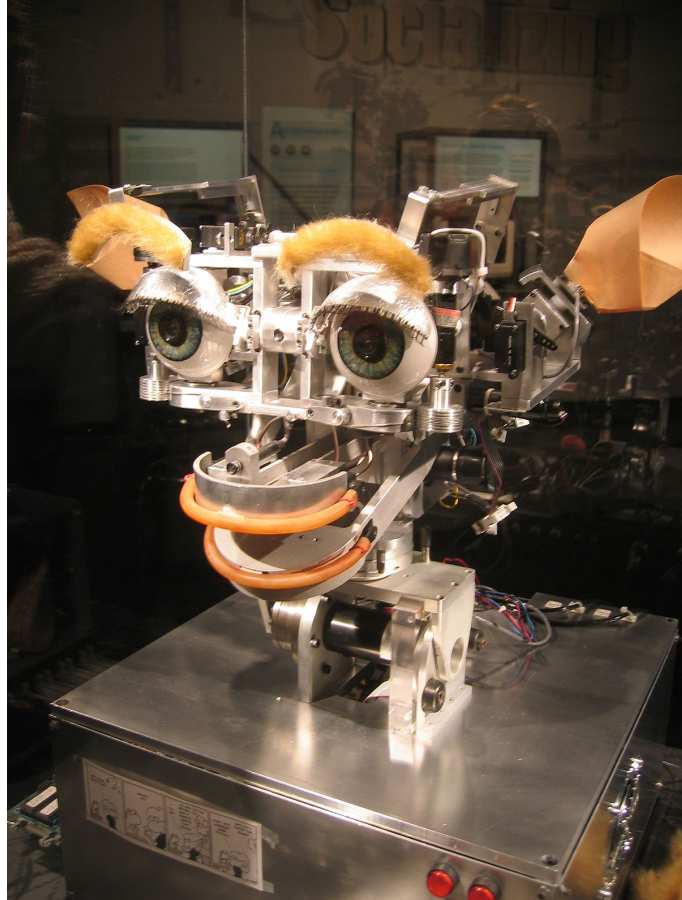




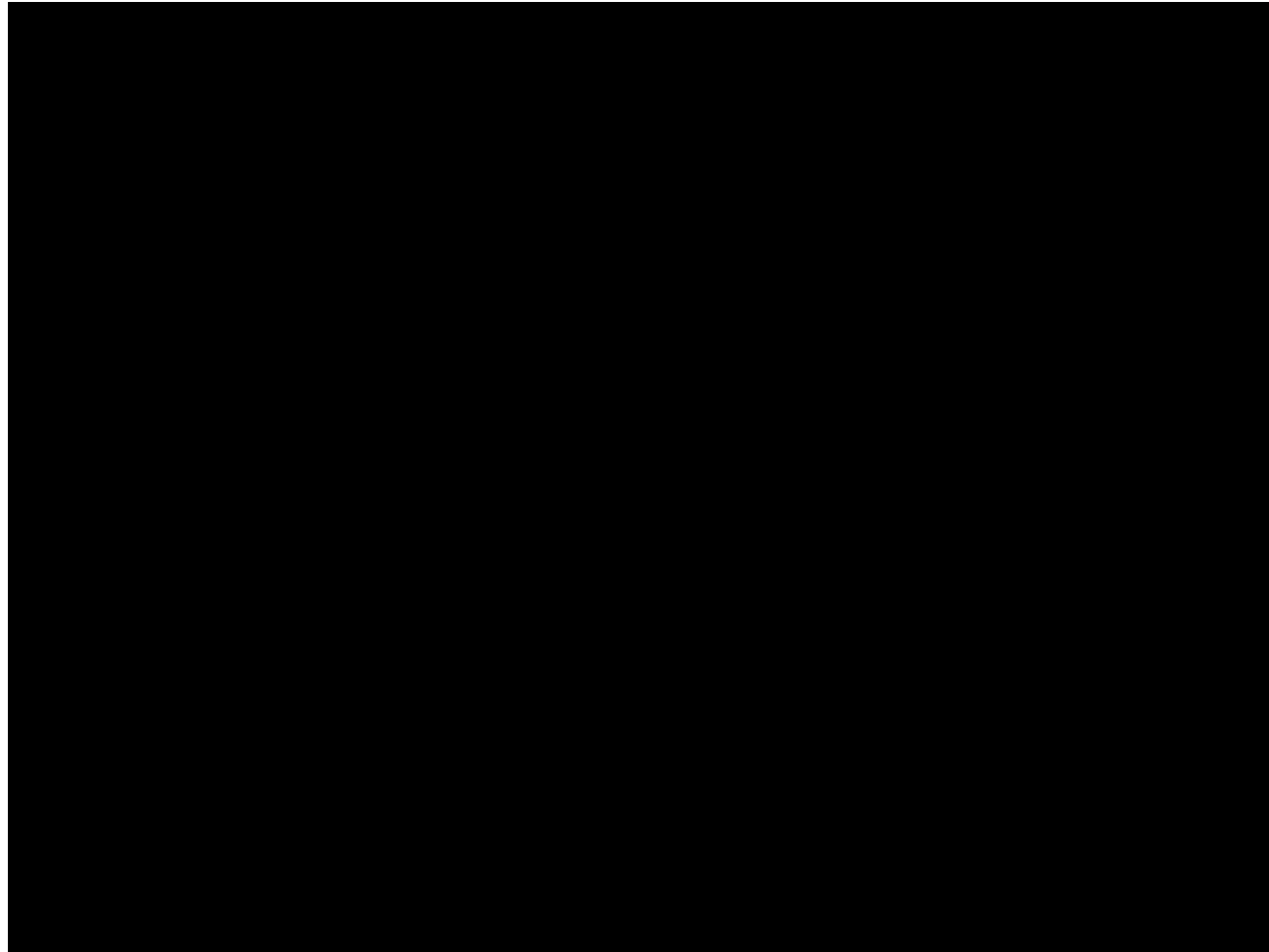
1997 – Deep Blue



1997 – Kismet (MIT)



2002 – Roomba



2011 – IBM Watson Wins Jeopardy!



Digital Assistants



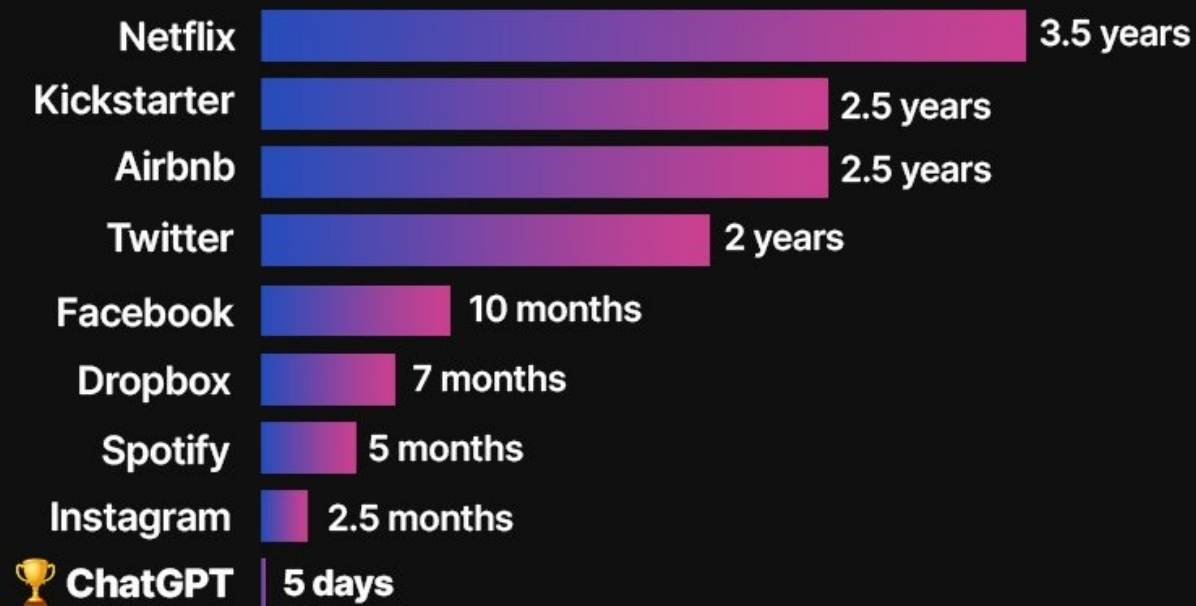
Siri (2011)



2014

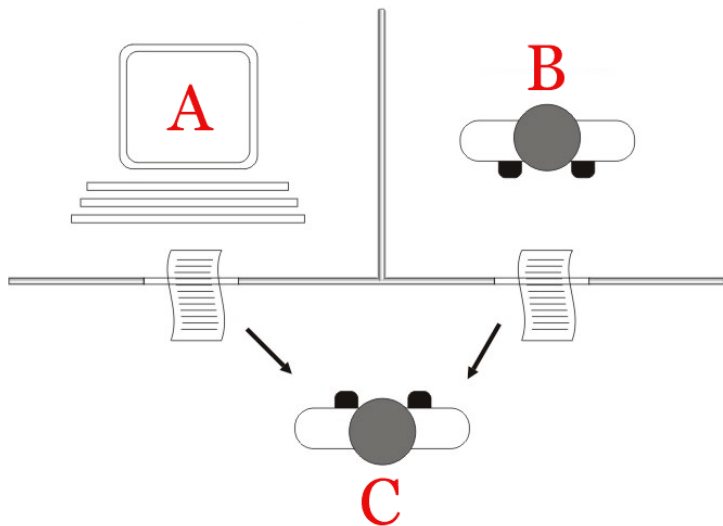


Time it took to reach **One Million** Users:





1949 – Turing Test



nature

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NEWS FEATURE | 25 July 2023

ChatGPT broke the Turing test – the race is on for new ways to assess AI

Large language models mimic human chatter, but scientists disagree on their ability to reason.

[Celeste Biever](#)



Ik ben een patiënt

Scan
the skin
you're in

Ik ben een arts

Smartschool speurt via AI naar leerproblemen





Ook bij banken is AI in opmars: “Op één aspect heeft artificiële intelligentie het al voor het grootste deel overgenomen”



Onder meer grootbanken BNP Paribas Fortis en KBC maken gebruik van AI. — © Shutterstock

Tom Le Bacq

Gisteren om 03:00





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DATA



RULES

$A > B$ &
 $C < A$



TRADITIONAL
PROGRAMMING

→ ANSWERS
(FRAUD : YES/NO)



DATA



RULES

$A > B \ \&$
 $C < A$



TRADITIONAL
PROGRAMMING

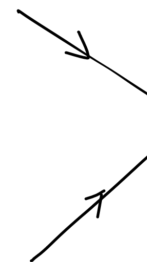
→ ANSWERS
(FRAUD : YES/NO)

DATA



ANSWERS

F: Y
F: N
F: Y
...



ARTIFICIAL
INTELLIGENCE

→ RULES
 $A > B \ \&$
 $C < A$



DATA



RULES

$A > B$ &
 $C < A$



TRADITIONAL
PROGRAMMING

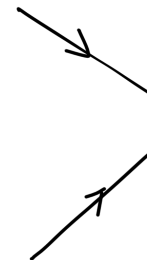
→ ANSWERS
(FRAUD: YES/NO)

DATA



ANSWERS

F: Y
F: N
F: Y
...



ARTIFICIAL
INTELLIGENCE

↓
MACHINE LEARNING

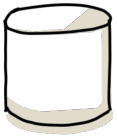


RULES

$A > B$ &
 $C < A$

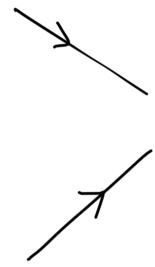


DATA



RULES

A > B &
C < A



TRADITIONAL PROGRAMMING

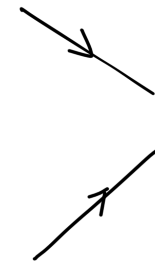
→ ANSWERS
(FRAUD: YES/NO)

DATA



ANSWERS

F: Y
F: N
F: Y
...

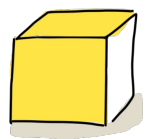


ARTIFICIAL INTELLIGENCE

↓
MACHINE LEARNING



AI MODEL





TRAINING

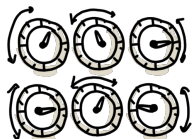
DATA



PREPROCESSING



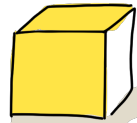
TRAINING

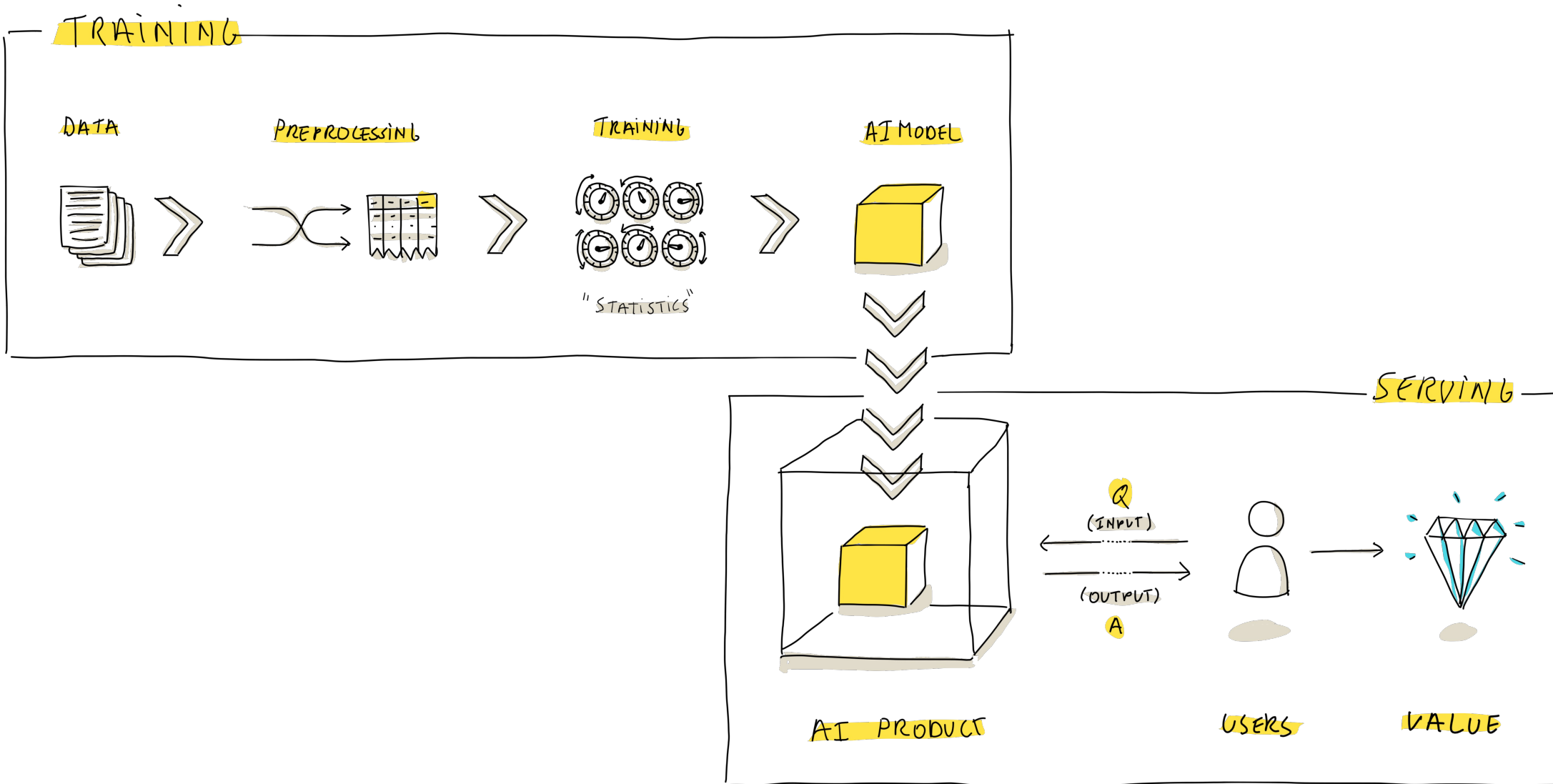


"STATISTICS"



AI MODEL

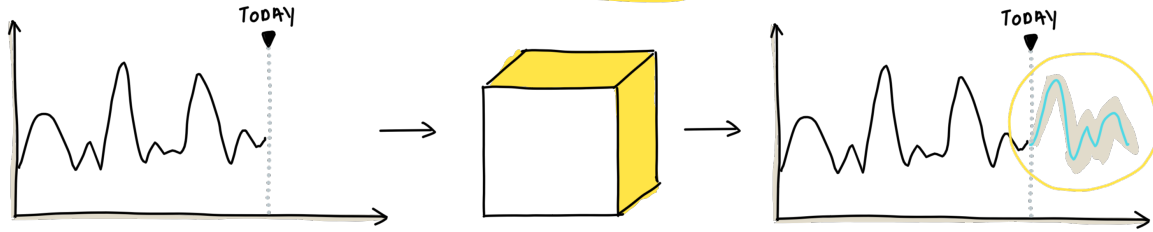




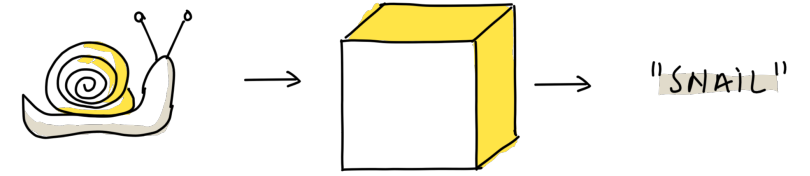
AI Models have Varying Capabilities



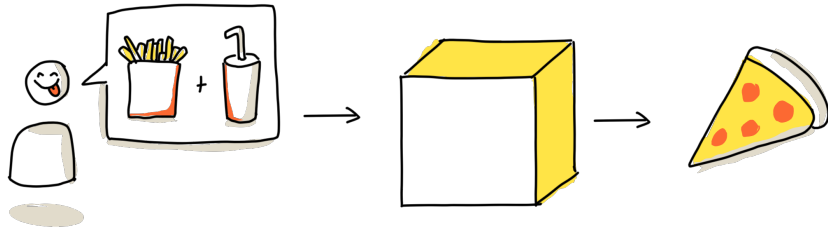
FORECASTING



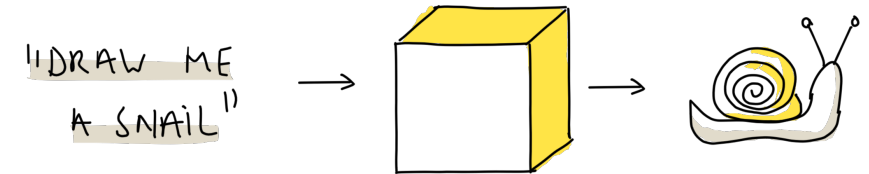
CLASSIFICATION



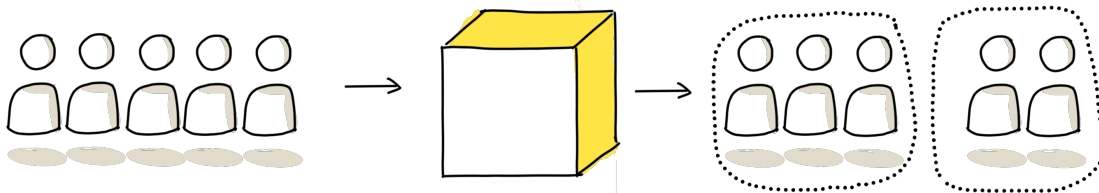
RECOMMENDATION



GENERATION

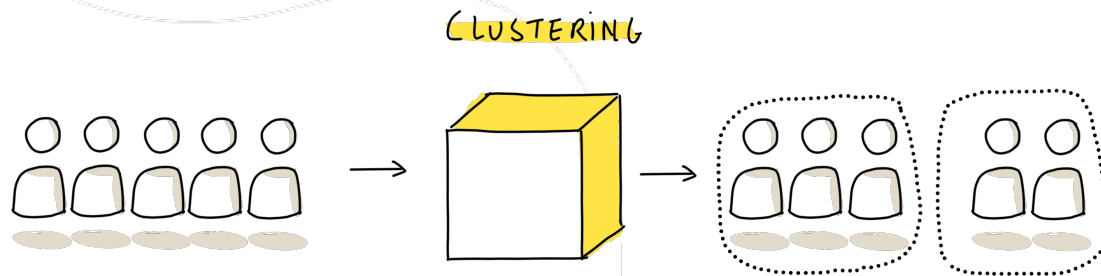
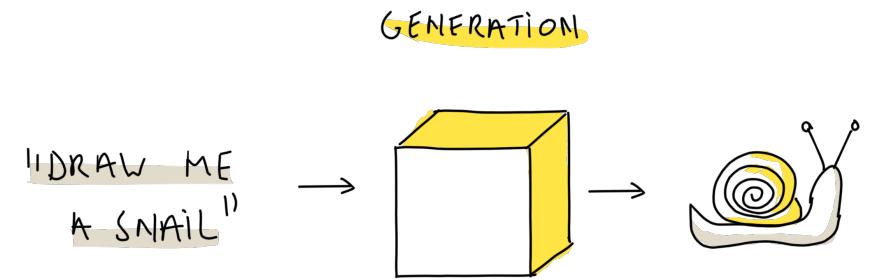
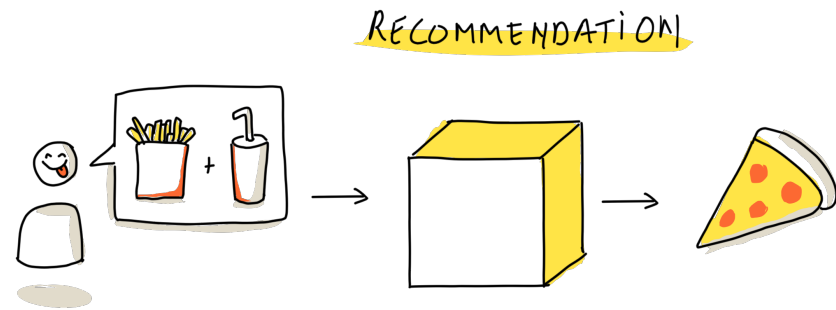
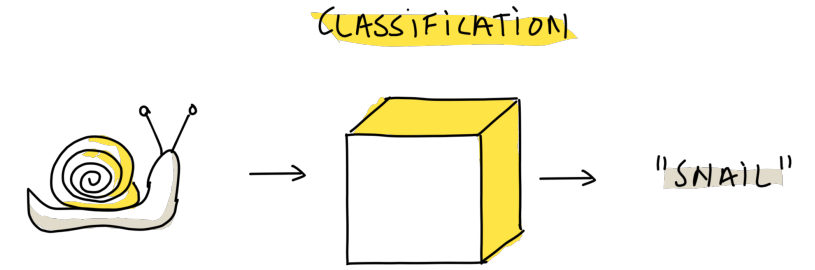
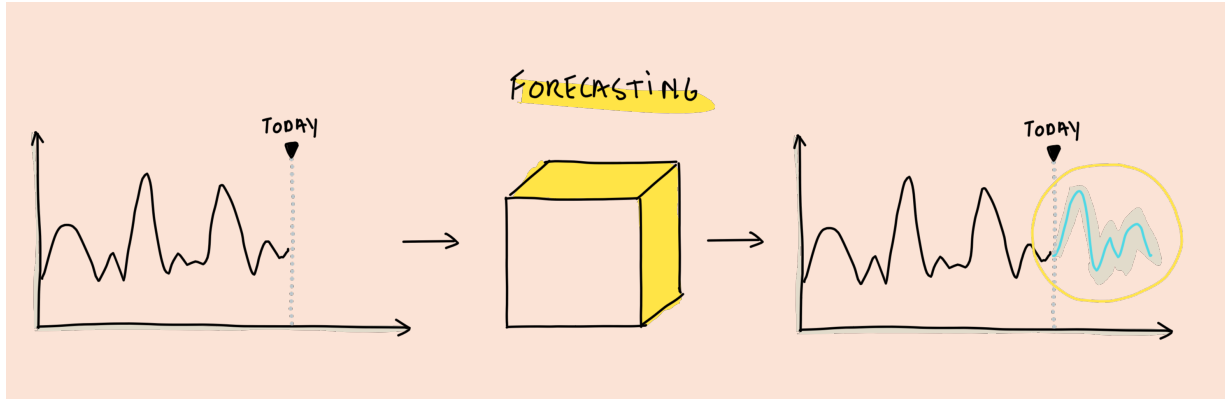


CLUSTERING



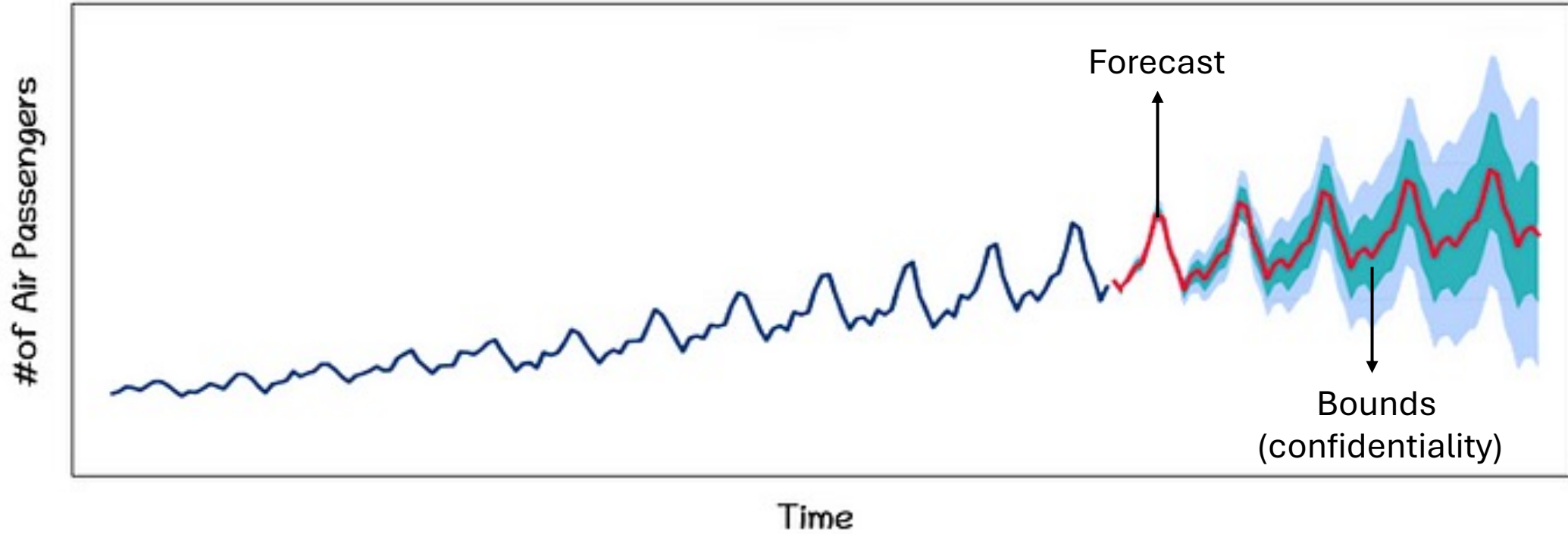
(THERE EXIST MORE)

AI Models have Varying Capabilities



(**THERE EXIST MORE**)

Forecasting: The Basics





Example: Air Quality Forecasting



[Explore the data](#)

[Why air quality?](#)

[Why open data?](#)

[Partners](#)

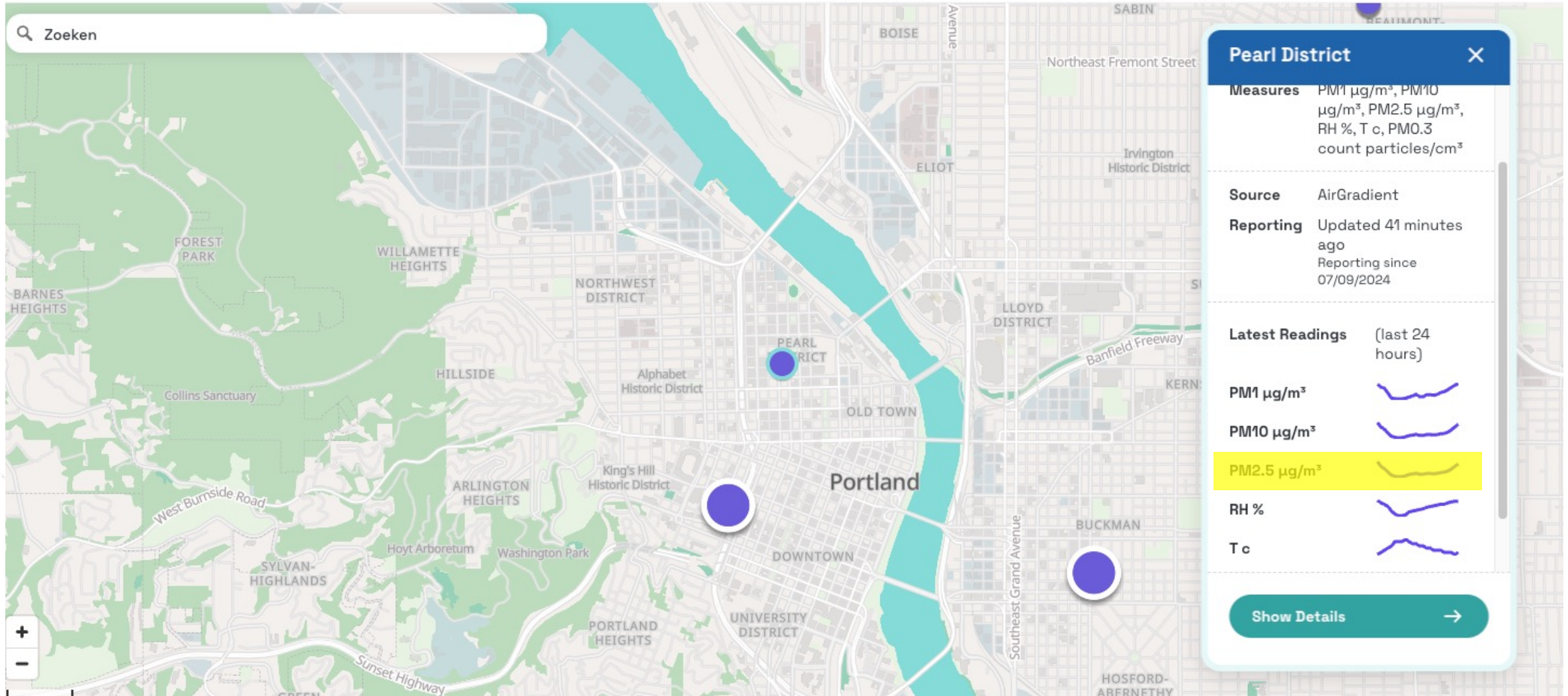
[Developers](#)

[About](#)

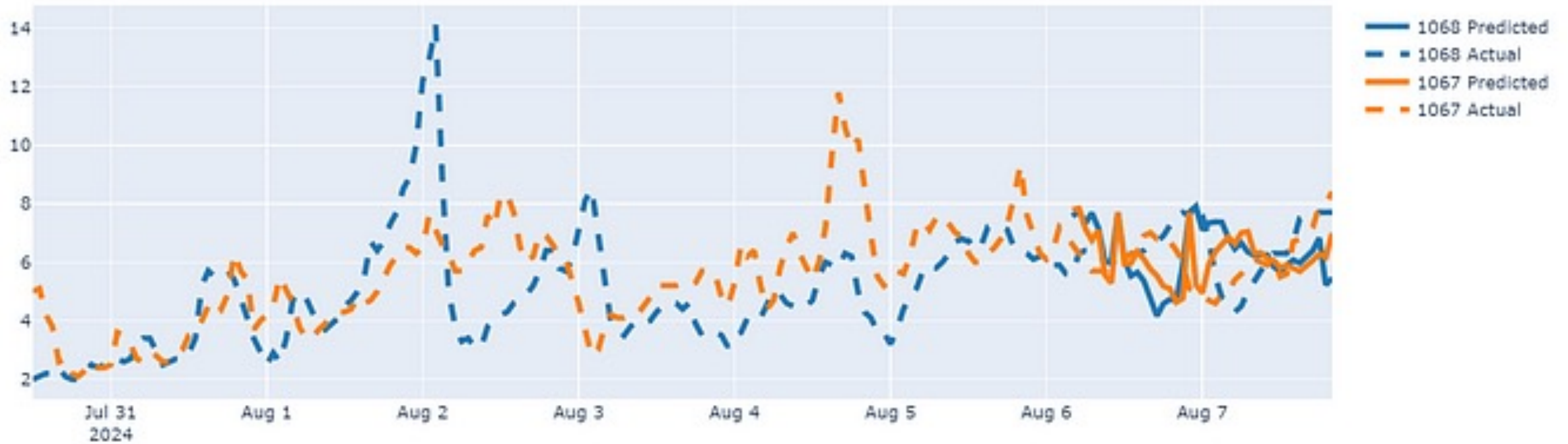
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[Login](#)

[Donate](#)



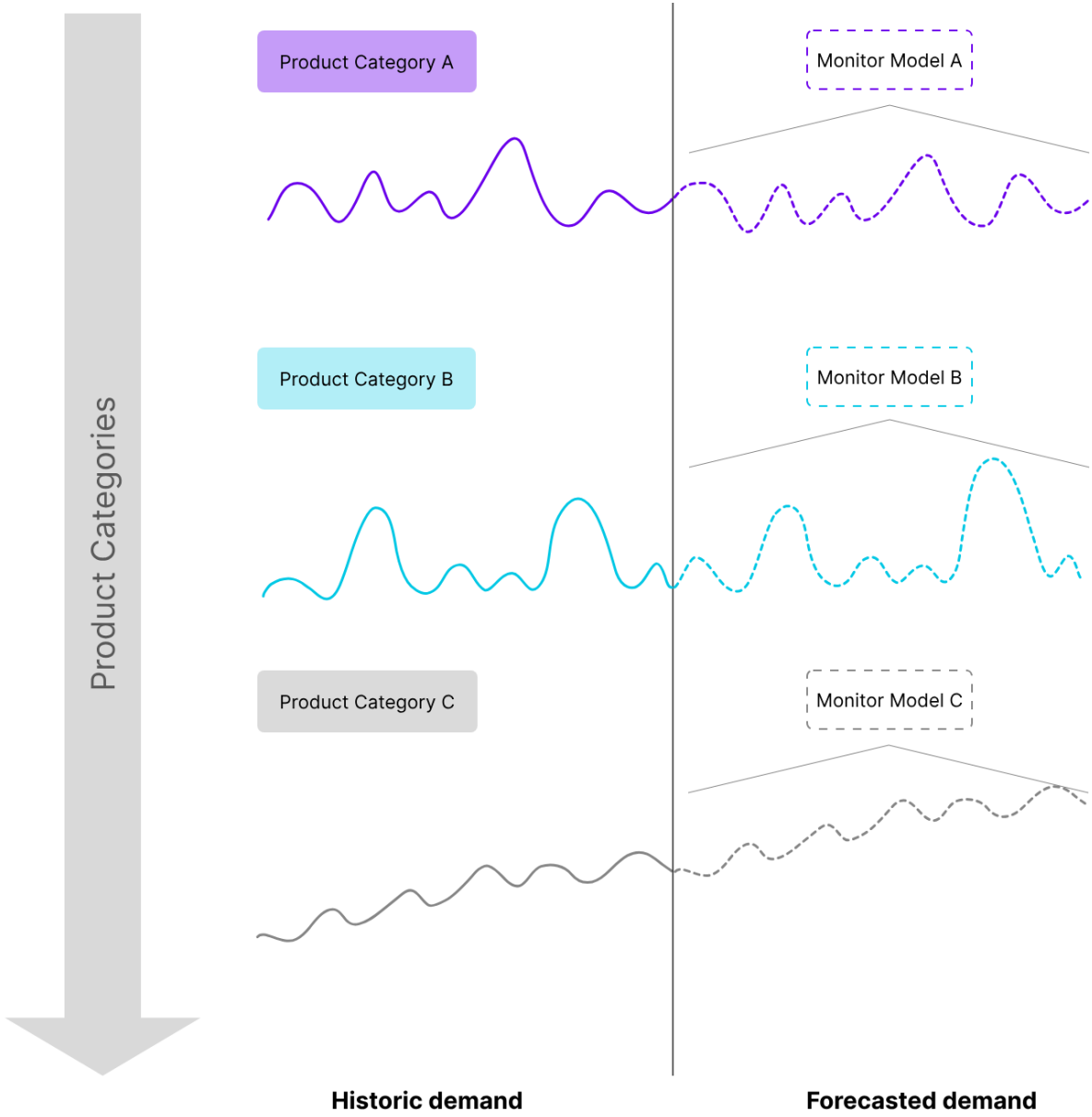
Example: Air Quality Forecasting



Forecasting the evolution of the PM2.5 on locations 1068 and 1067.



Example: Demand Forecasting

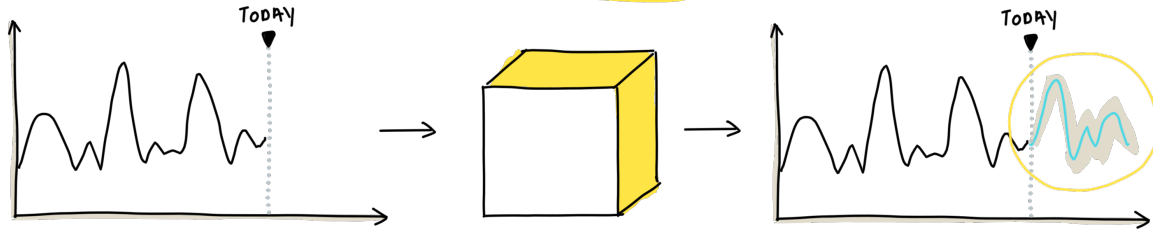


[Source: [NannyML](#)]

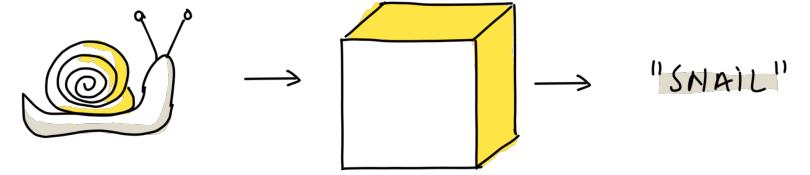
AI Models have Varying Capabilities



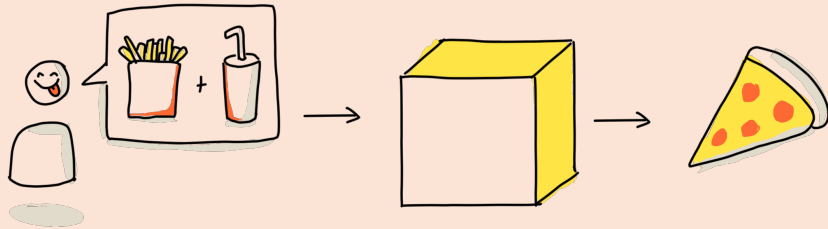
FORECASTING



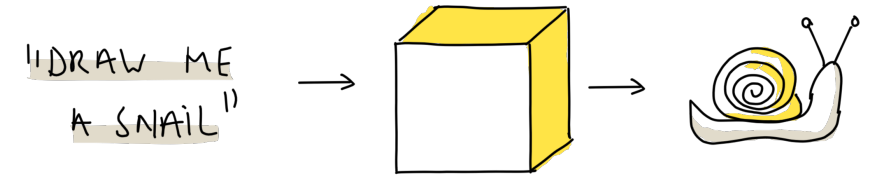
CLASSIFICATION



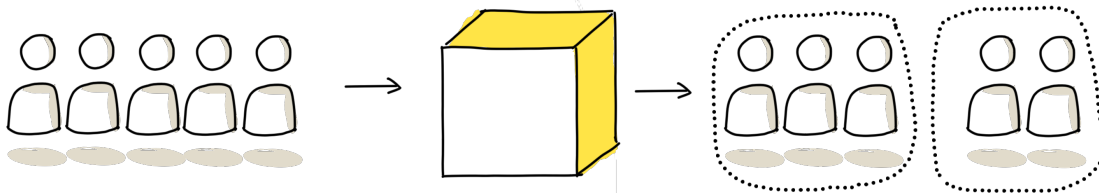
RECOMMENDATION



GENERATION



CLUSTERING



(THERE EXIST MORE)



Example: Frequently Bought Together



- This item:** PD35 Flashlight \$17.99
- 2-pack ARB Batteries \$5.99
- Fenix ARE-C2 Charger \$12.99
- Car Adapter 2x USB \$4.99

ADD ALL TO CART

Example: Spotify Discover Weekly



PLAYLIST

Discover Weekly

New Music For You To Discover!

Created by **Lori Pineda** - 25 songs, 1 hr 22 min

PLAY

FOLLOWERS
21,056

Q Filter


	TITLE	ARTIST	ALBUM	
	Sick in the Head	Jackson Penn	Sick in the Head	2019-10-03
	Bad News	EXPLICIT Pat Muresan	Bad News	11 days ago
	All My Life	Lionheir	All My Life	3 days ago
	Whisper Wait	Fosternicole	With You With ...	2019-10-03

Example: Netflix








House of Cards
★★★★★ 2013 TV-MA 1 Season HD 5.1






Sharks gliding ominously beneath the surface of the water? They're a lot less menacing than this Congressman.

 This winner of three Emmys, including Outstanding Directing for David Fincher, stars Kevin Spacey and Robin Wright.

Because you watched Orange Is the New Black

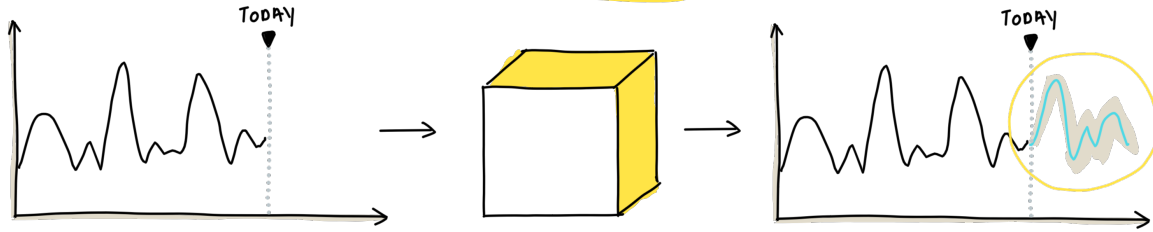
Because you watched Red Lights

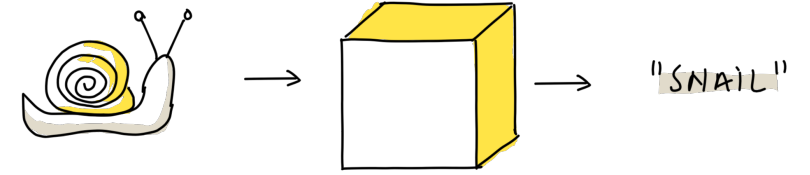
AI Models have Varying Capabilities



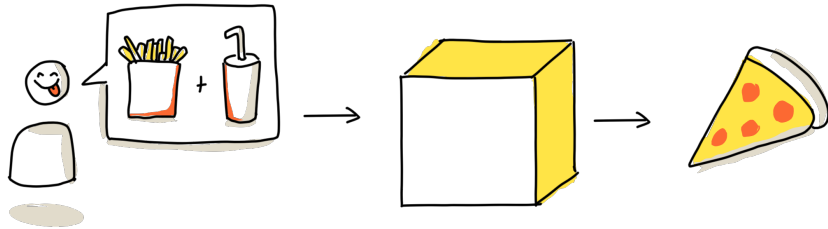
FORECASTING



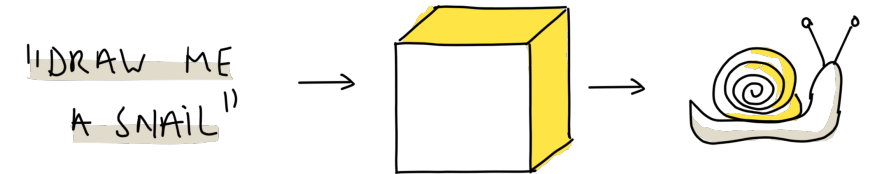
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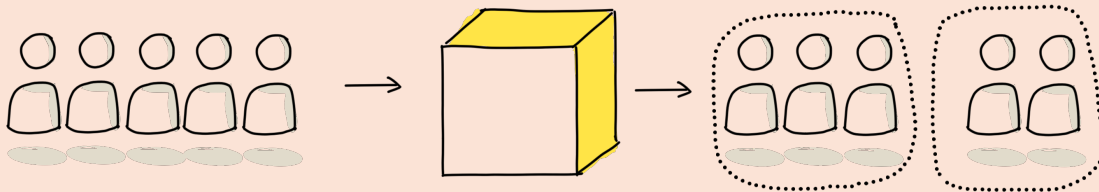
RECOMMENDATION



GENERATION



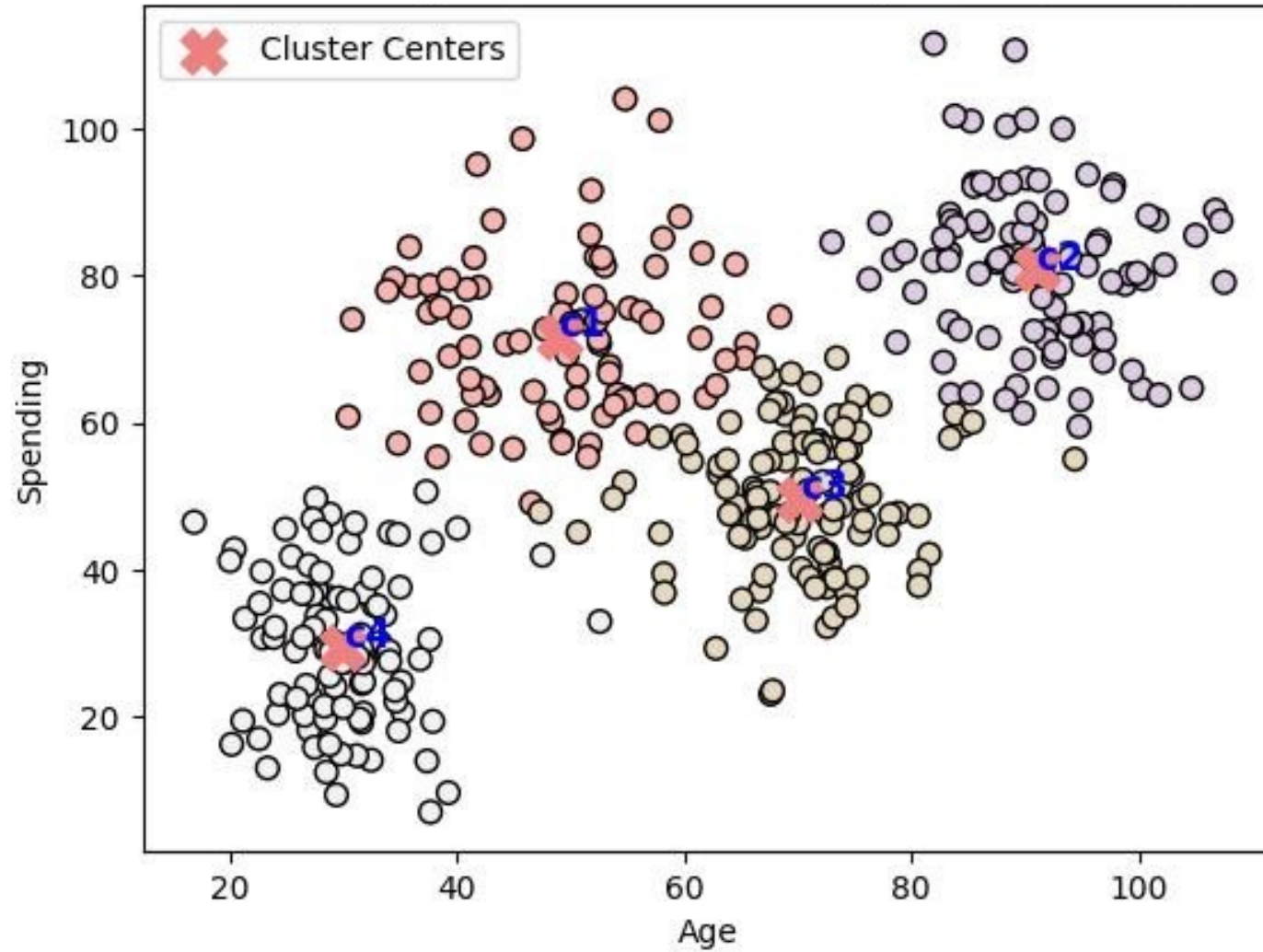
CLUSTERING



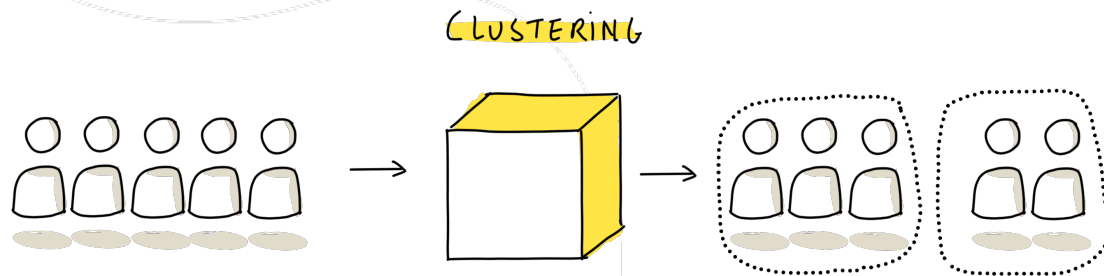
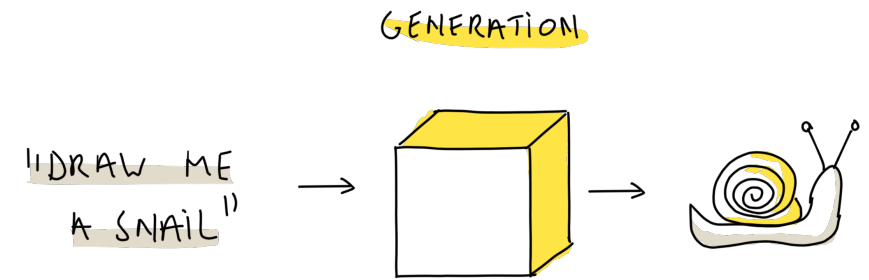
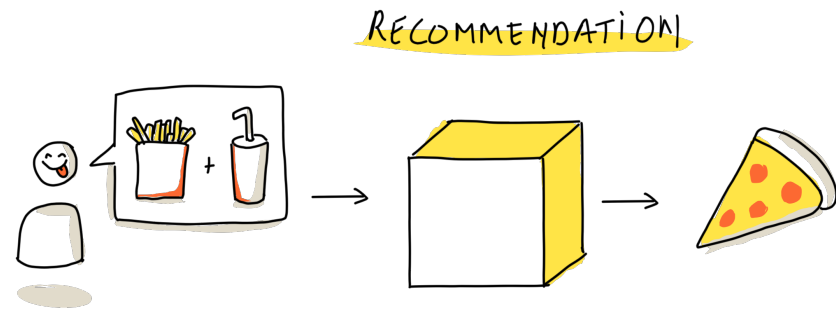
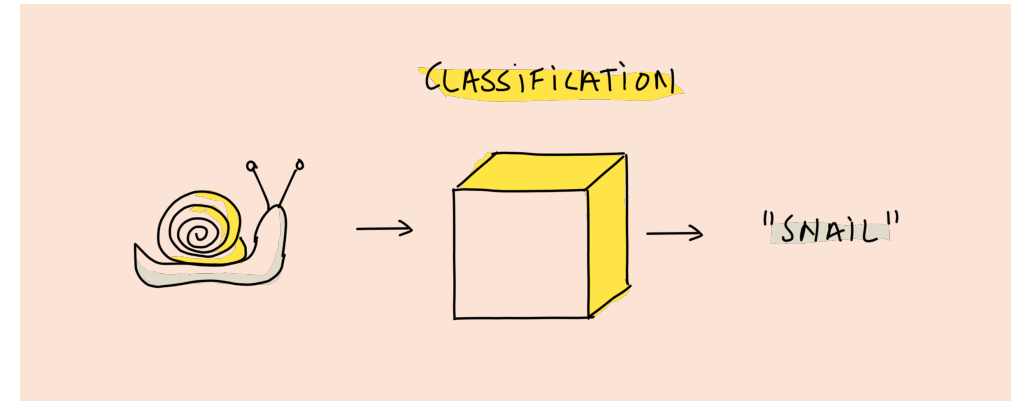
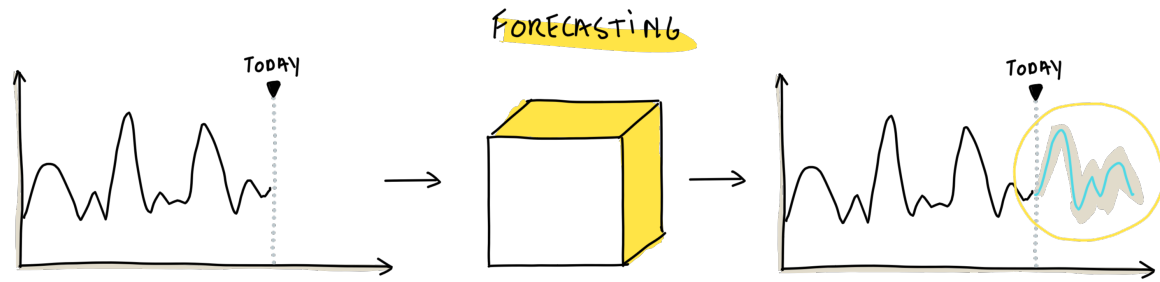
(THERE EXIST MORE)



Example: Market Segmentation



AI Models have Varying Capabilities



(**THERE EXIST MORE**)

Example: Spam Detection



Messages that have been in Spam more than 30 days will be automatically deleted. [Delete all spam messages now](#)

Sender	Subject	Date
verscompnigh87	Hello, this Sonipisova? my names is Rosemarie -- С уважением,	10:40 AM
Confirm Now.	sonipisov, please confirm your unsubscription	Aug 7
Public--Records	Your background check may be available online...[sonipisov]>>Check--Now<< - (2) Negative Items may have been Added Your public Record Update...	Aug 6
Lucie, Zelená Země	Zvířata a bouřky? Známe řešení - Konopí a CBD pro vaše zdraví Přírodní doplněk stravy pro Vašeho psa CBD konopí dokáže zklidnit Vašeho psa i ...	Aug 1
CBD Today	Stop your pain now! - Anxiety? Depression? CBD could be a lifesaver	Jul 31
Quicken Loans Assoc.	Refinance and save - See New Mortgage Calculation: No Login Required	Jul 31
Mail Delivery System 2	Undelivered Mail Returned to Sender - This is the mail system at host pleski0041.hospedagemdesites.ws.hospedagemdesites.ws. I'm sorry to h...	Jul 30
Mail Delivery System 3	Undelivered Mail Returned to Sender - This is the mail system at host pleski0045.hospedagemdesites.ws. I'm sorry to have to inform you that yo...	Jul 29
Mail Delivery System	Undelivered Mail Returned to Sender - This is the mail system at host pleski12i0007.hospedagemdesites.ws. I'm sorry to have to inform you that ...	Jul 29
Mail Delivery System	Undelivered Mail Returned to Sender - This is the mail system at host pleski0041.hospedagemdesites.ws.hospedagemdesites.ws. I'm sorry to h...	Jul 28
sonipisova	Please Check Your Account - Wed,28 Jul-2021 Hello sonipisova, Welcome to Planet 7 Casino??. We need to confirm your info.... ??Planet 7 Casin...	Jul 28
Mail Delivery System	Mail delivery failed: returning message to sender - This message was created automatically by mail delivery software. A message that you sent ...	Jul 28
Mail Delivery System	Undelivered Mail Returned to Sender - This is the mail system at host pleski12i0003.hospedagemdesites.ws. I'm sorry to have to inform you that ...	Jul 28
Thank you	Re:You've been selected! - .T. Mobile \$90 Date of issue: 01 July 2021 Order Number: 0933373- 90678968 Account: sonipisova@gmail.com Date of...	Jul 27
info	Aktuálne pracovné ponuky na Atena.sk - Výber z 713 aktuálnych pracovných ponúk Opatrovateľstvo a zdravotníctvo Opatrovateľ/ka 5238 € za tur...	Jul 27
GlobeLife-Partner	sonipisova, You need to See This - Check out this official offer	Jul 26
ThePros	Finally find financial freedom - Wow! Borrow Up To \$50000! Cash is Wired Into Your Account.	Jul 24
Lucie, Zelená Země	STOP migrénám s CBD konopím - Konopí a CBD pro vaše zdraví Přírodní a efektivní pomocník na Vaše migrény Jak CBD působí proti migrénám? ...	Jul 24
CapitalOne	RE: Winner Ticket No. 763545588	Jul 24



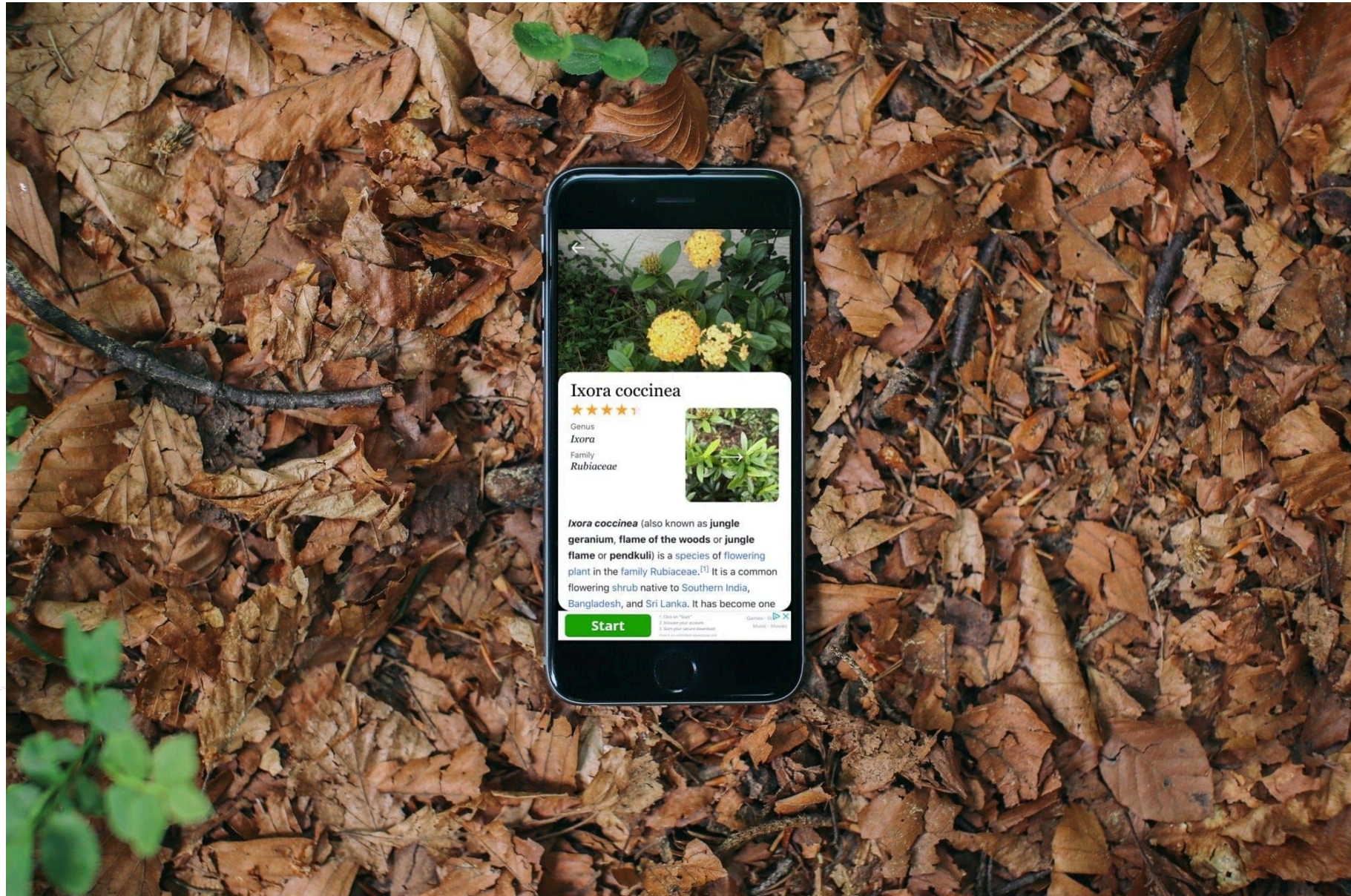
Example: Fraud Detection

Chase Fraud: Did you use card 2613 at SHELL/SHELL on 07/13? Reply YES or NO. Msgs&rates may apply.

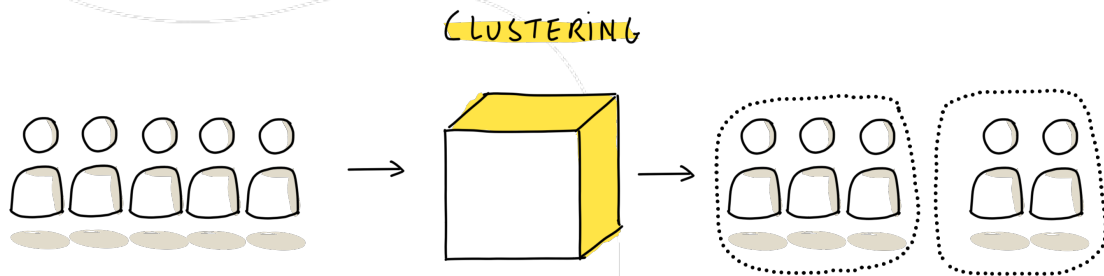
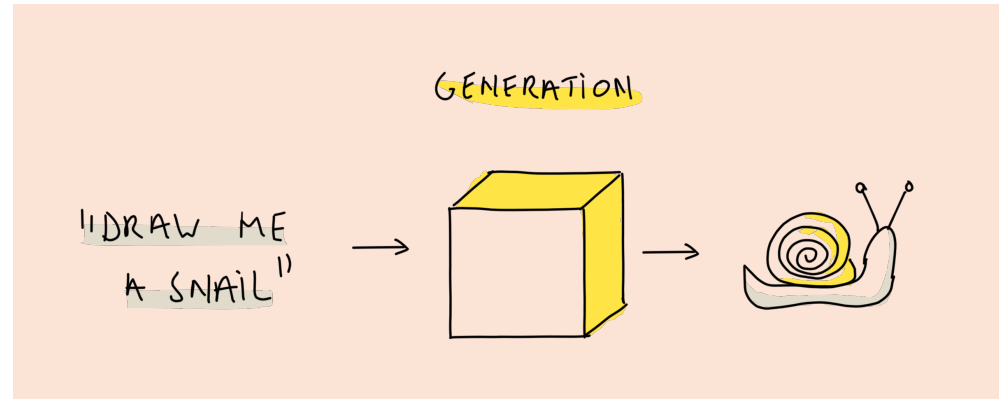
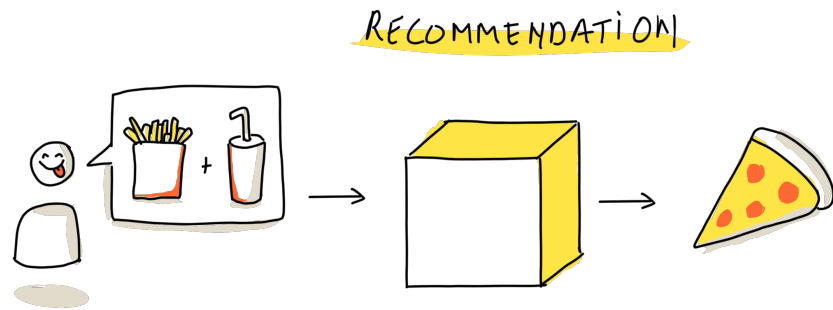
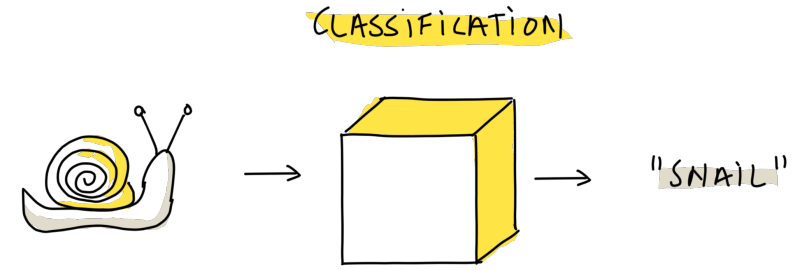
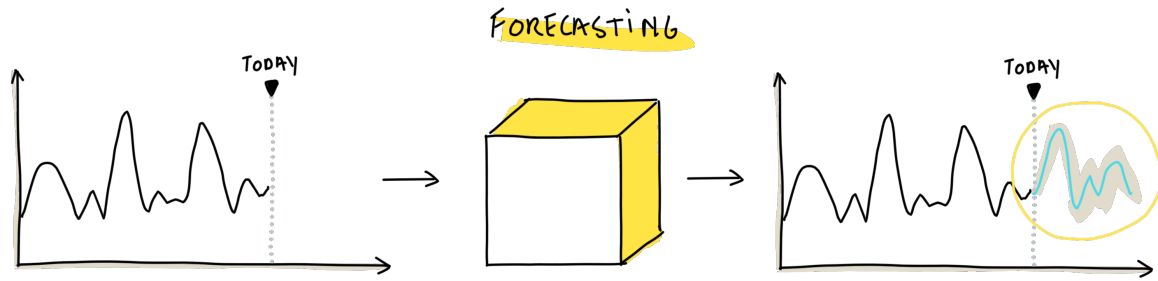
No

Chase Thanks. Your card can't be used until we speak to you. Call [800-454-9078](tel:800-454-9078) or the number on your card to turn it on or order a new one.

Example: Flower and Plant Identification



AI Models have Varying Capabilities



(**THERE EXIST MORE**)

Example: Social Media Post Generation



AI Post Generator

Prompt templates

Search for prompt

Suggested Favorite selections Custom

Facebook Instagram Twitter

LinkedIn Pinterest Google Business Profile

Your prompt

Imagine you're the social media manager for a trendy coffee shop called 'BeanBuzz.' Create an engaging social media post to promote our new seasonal drink, the 'Caramel Macadamia Latte.' Highlight its flavor profile. use enticing language.

Tone of voice

Polite Witty **Enthusiastic** Friendly

Informational Funny More

Approximate words 25

Generate hashtags

Include emoji

Posts to generate 3

Generate

Get started

1. Pick a prompt from the left-hand side "Prompt templates" panel, use the 🎲 button to get a random prompt, or write one from scratch.
2. Write or edit your prompt with what you want the AI to generate and hit the **Generate** button.
3. Select the results you like and hit the **Use selected results** button.

Example: Summarize Emails



✉ Mark as Unread ↻ Sync ...

Summary by Copilot


Lydia is providing an update on the progress of The Coral Gables Project, which has included the demolition of the roof and the installation of new materials. ①






There is a disagreement between **Tanko** and **Lydia** on which material to use for the shingles issue. **Lydia** is asking you for an opinion on how to resolve the dispute to finish the project as soon as possible. ②

Henry is asking you if there are any roof installers with more competitive prices that you've worked with. ③

① AI-generated content may be incorrect

Coral Gables Project Update

 **Lydia Bauer** Today at 9:30 AM

To:  Katri Ahokas  Henry Brill  Mona Kane  Tanko Laraba  Kevin Sturgis +2 more



Example: Generate Product Descriptions

Product descriptions

Product name *

What is your product called?

Tree

Product features *

Add product features and specs, either separated by lines or commas

Green

Leafy

Sustainably sourced

Essential to human existence

Generate content

#1

This Tree is the perfect addition to your yard. Not only is it stylish and green, it's also leafy and sustainably sourced. And it's essential to human existence, so it's the perfect way to bring life into your space.

#2

The Tree is a must-have for any yard. It's sustainably sourced, and it's essential to human existence! The Tree is a stylish green addition to your space, bringing a sense of true life.

#3

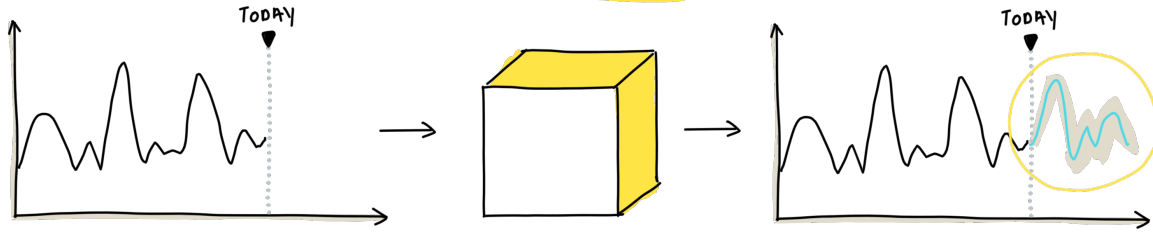
The Tree is an essential part of any yard. It's sustainably sourced, leafy, and green. It's also essential to human existence, so it's the perfect way to bring life into your space.



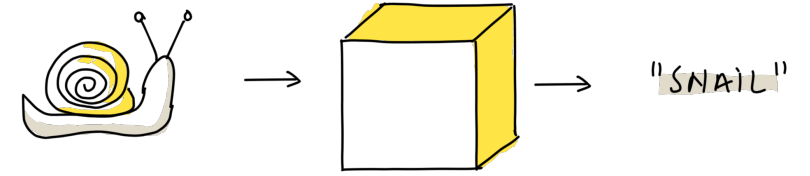
AI Models have Varying Capabilities



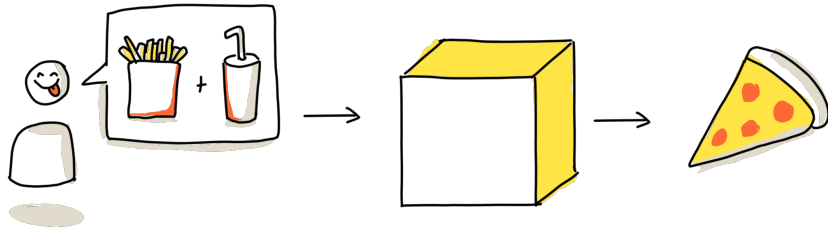
FORECASTING



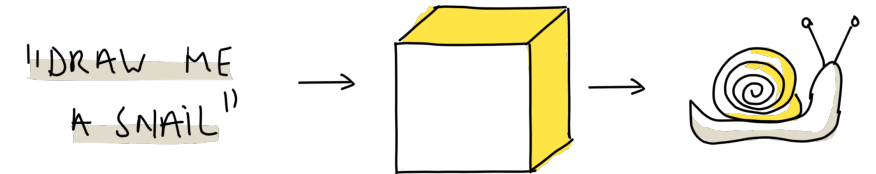
CLASSIFICATION



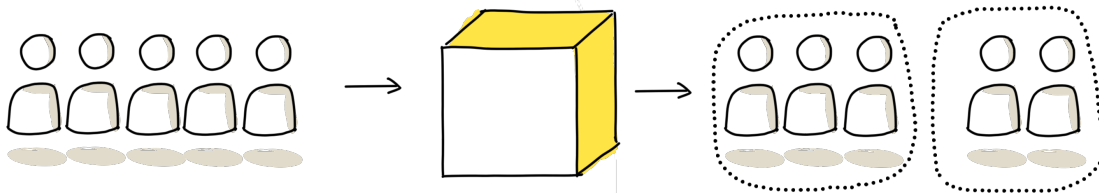
RECOMMENDATION



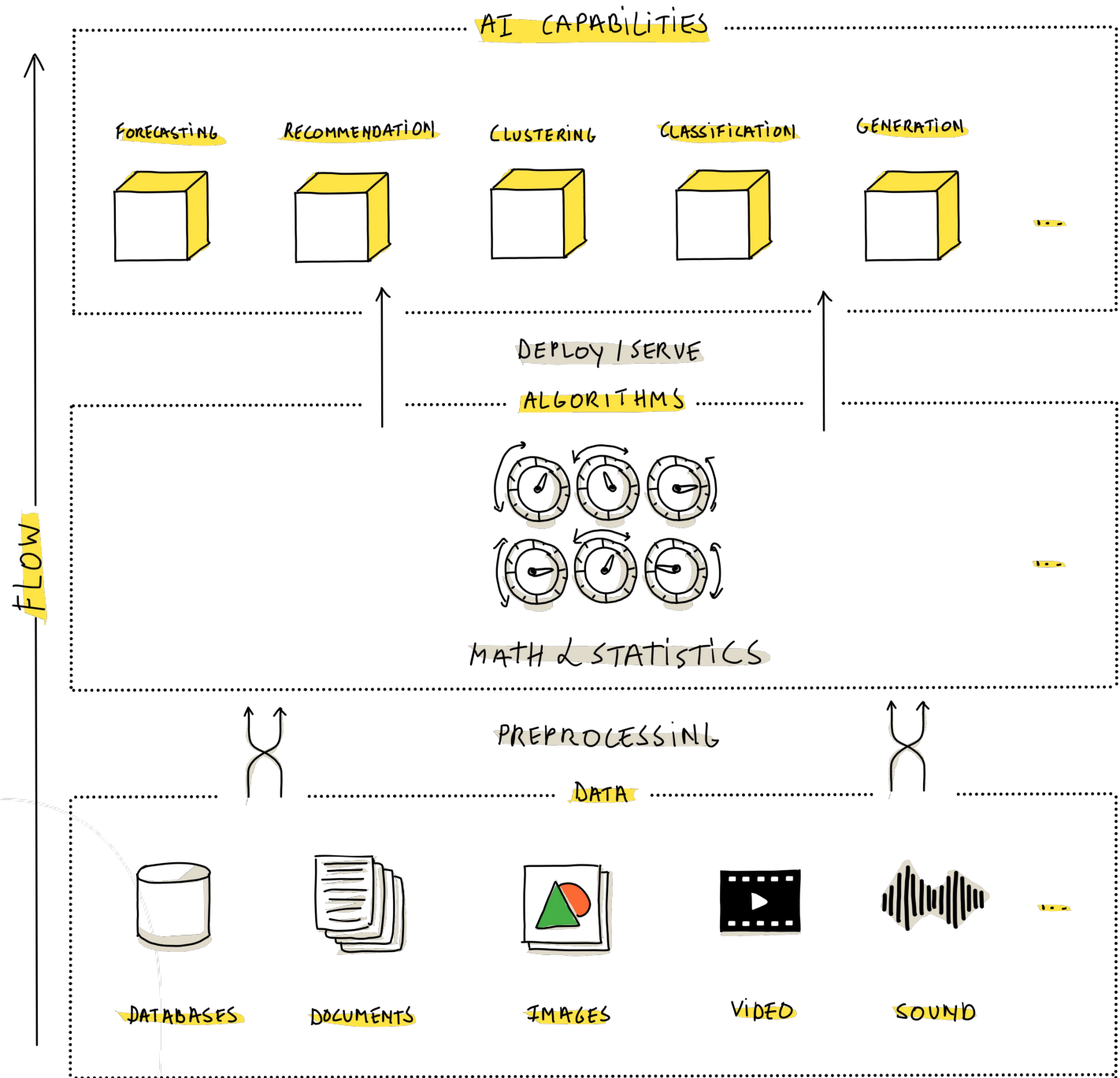
GENERATION

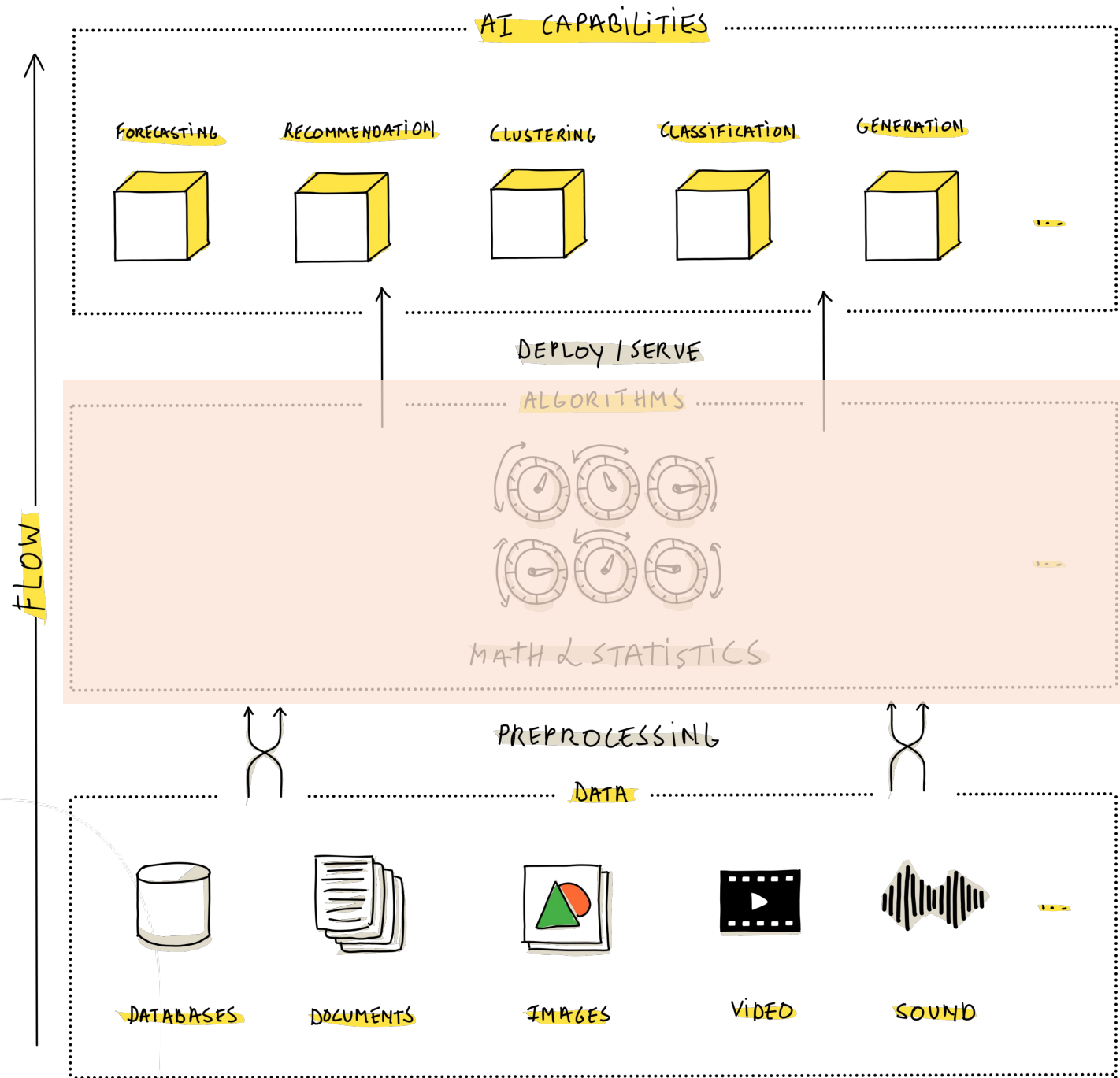


CLUSTERING



(THERE EXIST MORE)



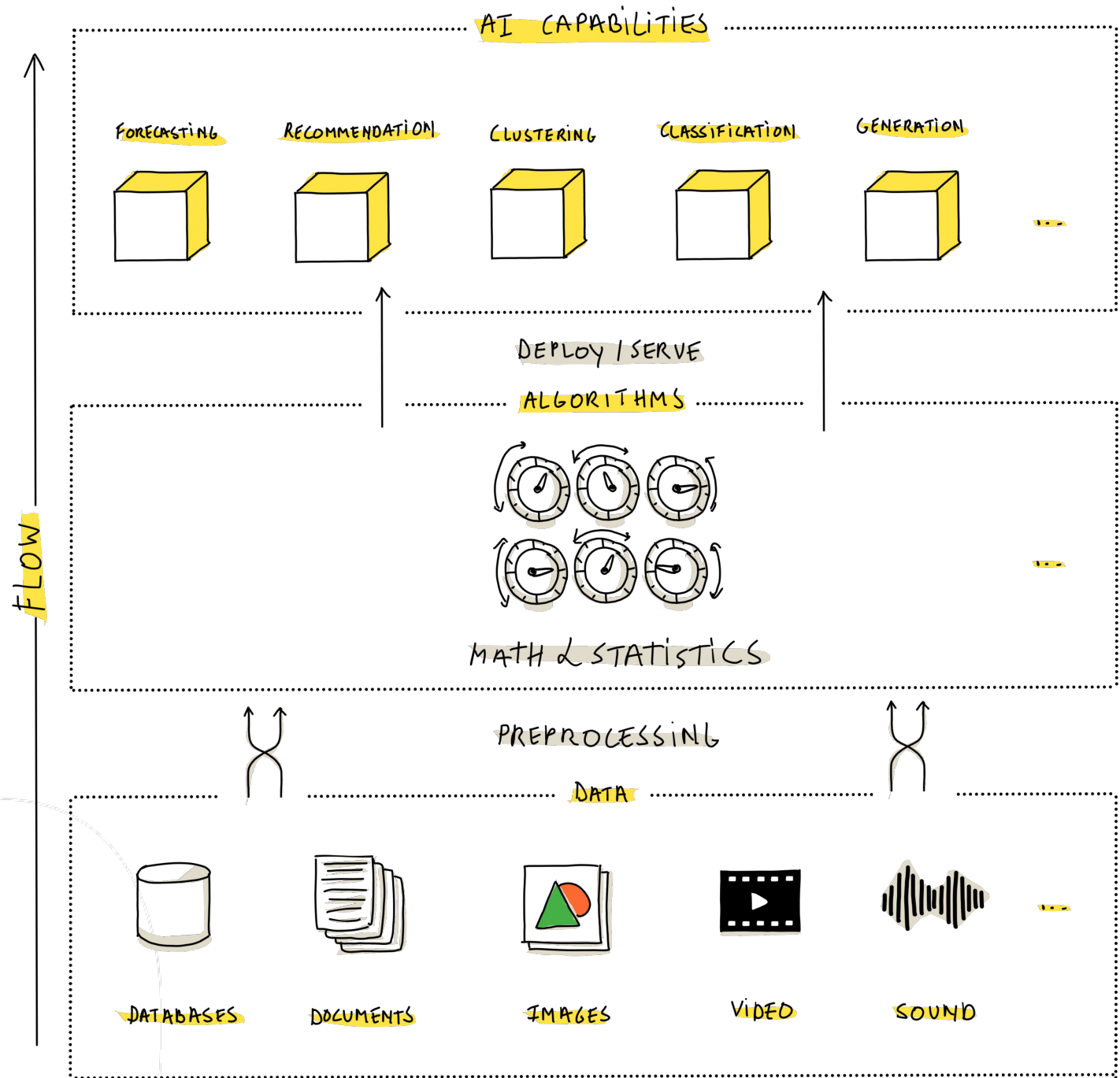


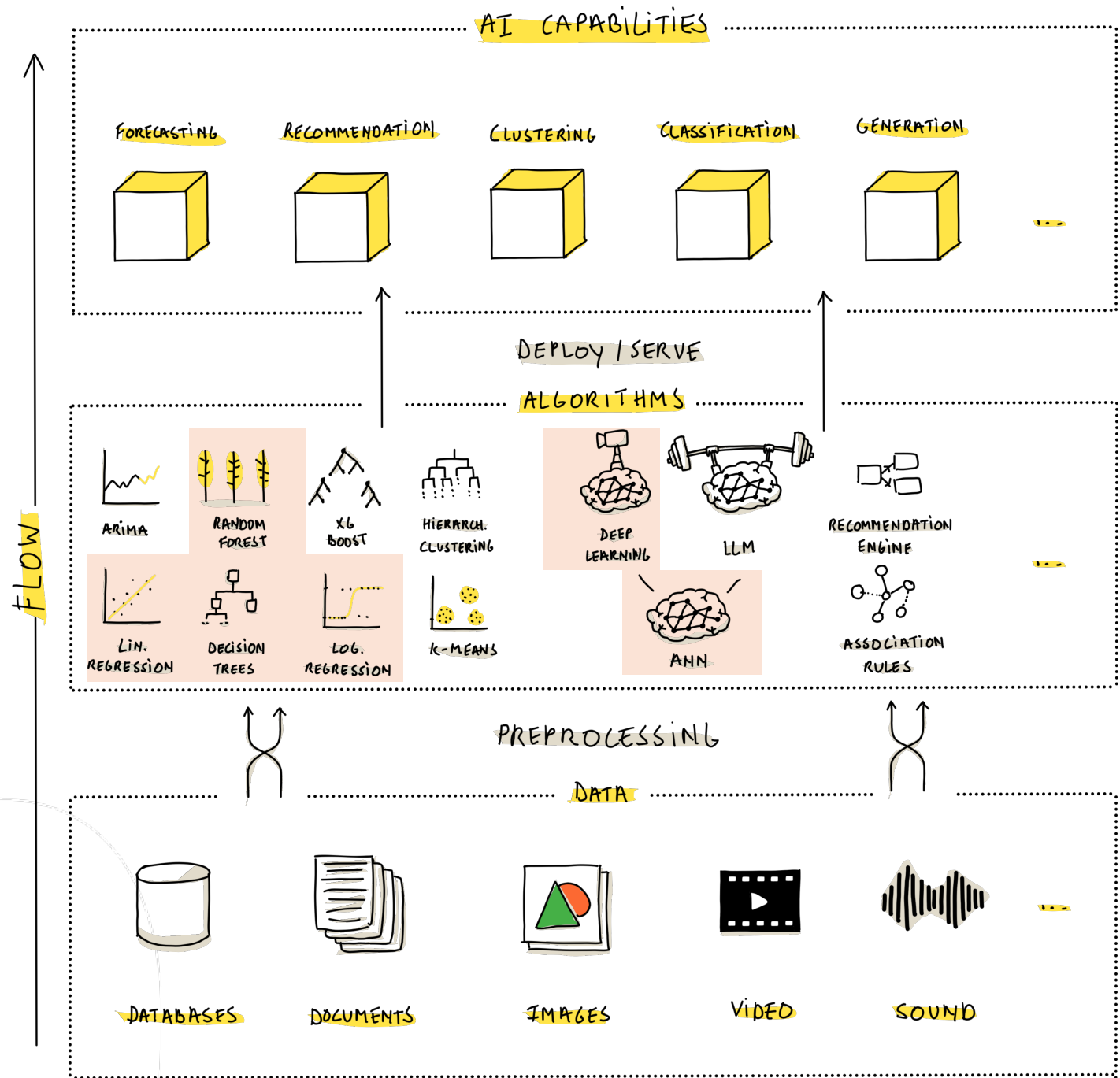
ALGORITHMIC BUILDING BLOCKS EXIST SINCE THE 1960s

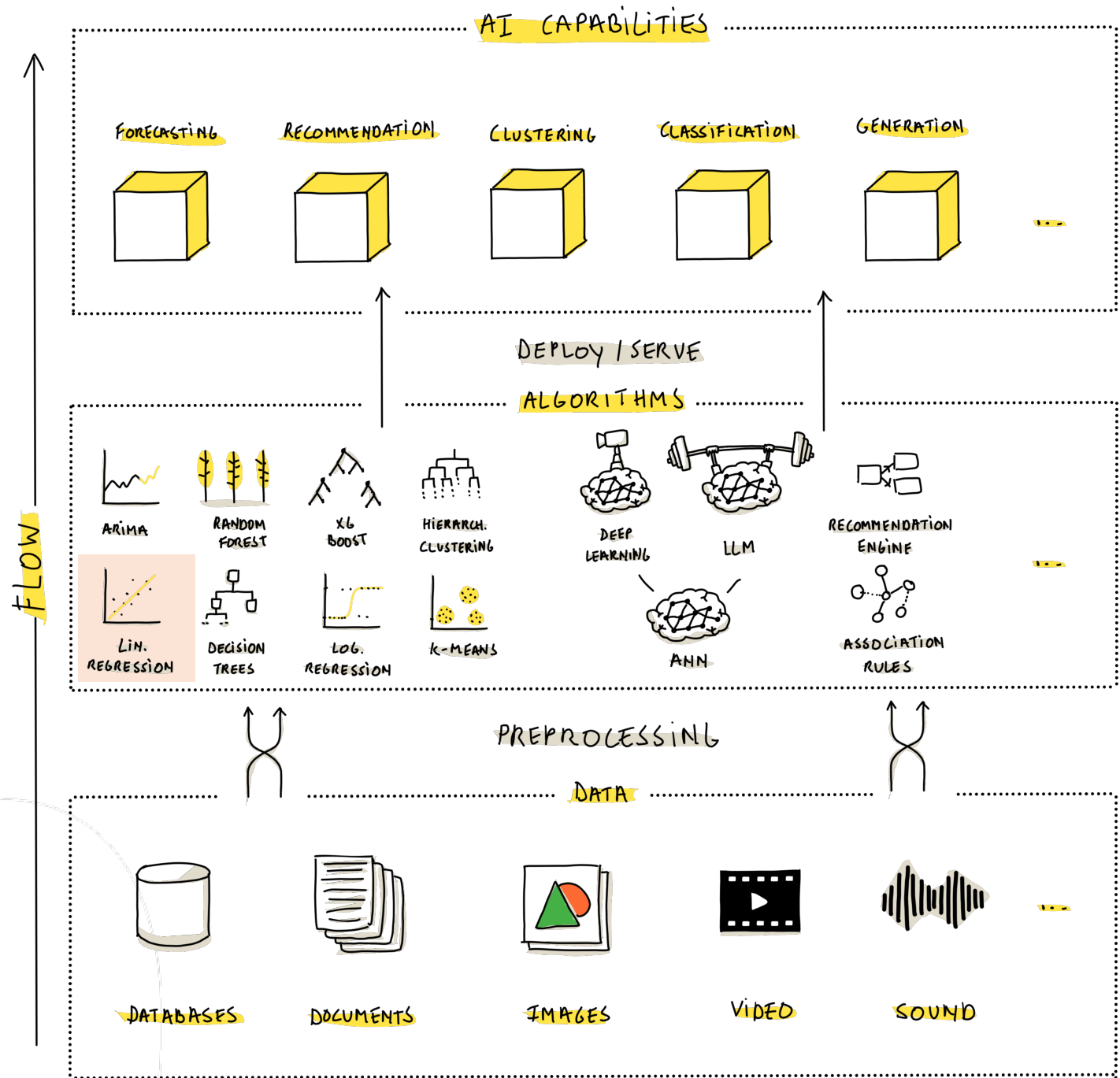


Table of Contents – Day 1

- Introduction
- History of AI
- AI Capabilities
- **AI Models**
- Quality of AI Models
- Generative AI
- Use Cases
- AI Breakthroughs and Trends
- Agenda for Day 2





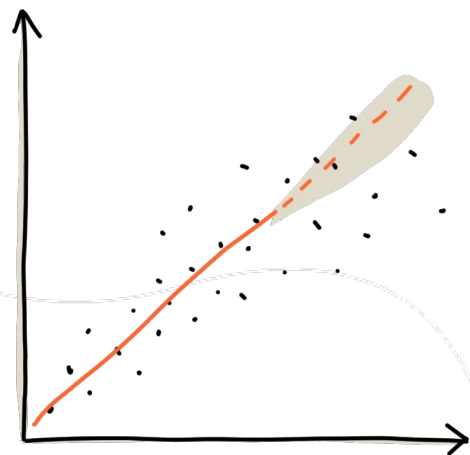




LINEAR REGRESSION

GOAL

PREDICTING
CONTINUOUS
VARIABLES



USED IN FORECASTING

Predicting future sales by looking at what happened before.

Predicting the price of a house based on house criteria

Predicting how many people may buy something because of ads

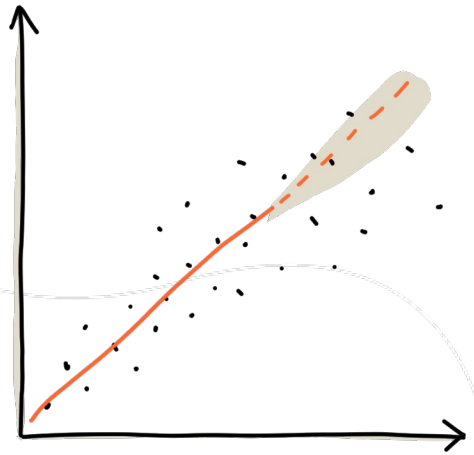
Predicting the needed stock in a supply chain process



LINEAR REGRESSION

GOAL

PREDICTING
CONTINUOUS
VARIABLES



USED IN FORECASTING

Predicting future sales by looking at what happened before.

Predicting the price of a house based on house criteria

Predicting how many people may buy something because of ads

Predicting the needed stock in a supply chain process



“Predicting the price of a house based on house criteria”

	house age	distance to the nearest MRT station	number of convenience stores	house price of unit area
0	32.0	84.87882	10	37.9
1	19.5	306.59470	9	42.2
2	13.3	561.98450	5	47.3
3	13.3	561.98450	5	54.8
4	5.0	390.56840	5	43.1
5	7.1	2175.03000	3	32.1
6	34.5	623.47310	7	40.3
7	20.3	287.60250	6	46.7
8	31.7	5512.03800	1	18.8
9	17.9	1783.18000	3	22.1



INPUT

OUTPUT

	house age	distance to the nearest MRT station	number of convenience stores	house price of unit area
0	32.0	84.87882	10	37.9
1	19.5	306.59470	9	42.2
2	13.3	561.98450	5	47.3
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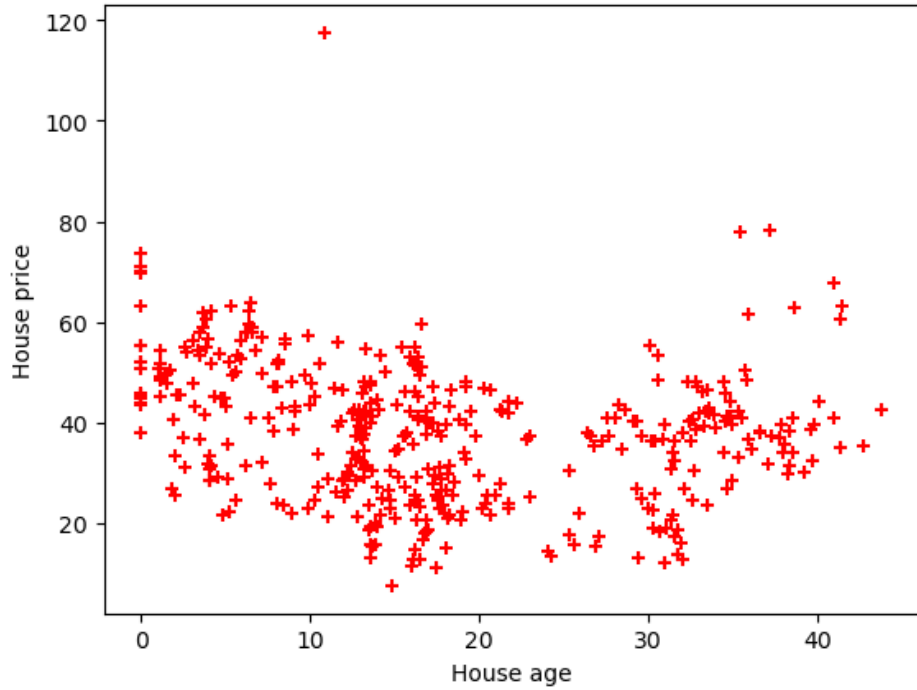


INPUT

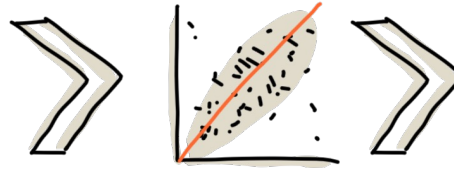
OUTPUT

	house age	distance to the nearest MRT station	number of convenience stores	house price of unit area
0	32.0	84.87882	10	37.9
1	19.5	306.59470	9	42.2
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7	20.3	287.60250	6	46.7
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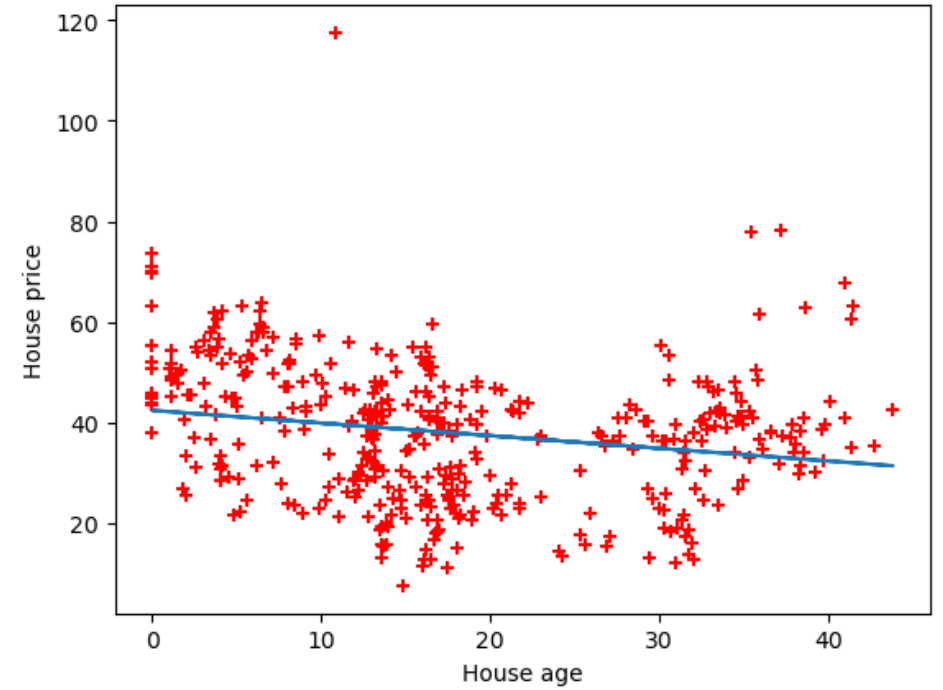
DATA



TRAINING



AI MODEL



WHY IS THIS AI ???

$$F(\text{HOUSE AGE}) = \text{HOUSE PRICE}$$
$$m \cdot x + b = y$$

SLOPE INTERCEPT

-0.2514 42.4376

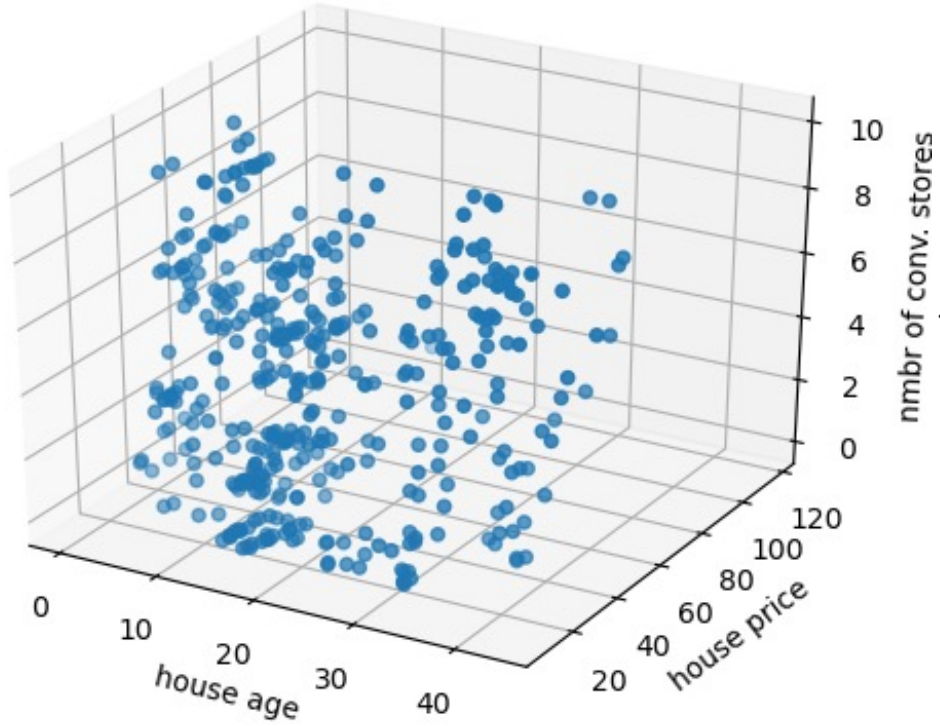


INPUT

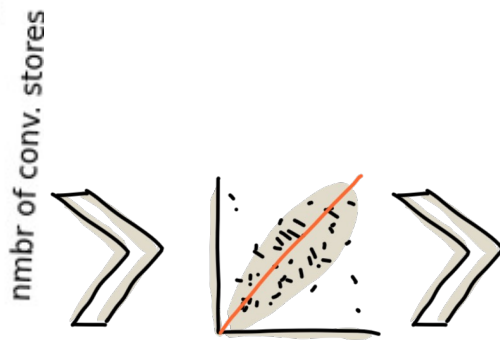
OUTPUT

	house age	distance to the nearest MRT station	number of convenience stores	house price of unit area
0	32.0	84.87882	10	37.9
1	19.5	306.59470	9	42.2
2	13.3	561.98450	5	47.3
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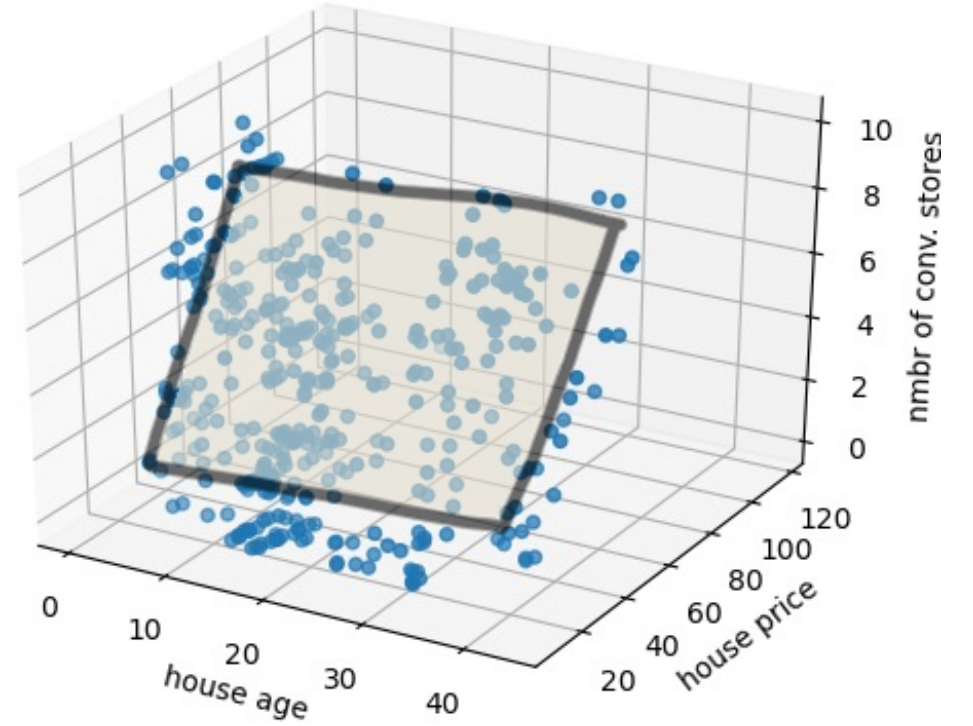
DATA



TRAINING



AI MODEL



$$F(\text{HOUSE AGE, NMBR OF CONV. STORES}) = \text{HOUSE PRICE}$$



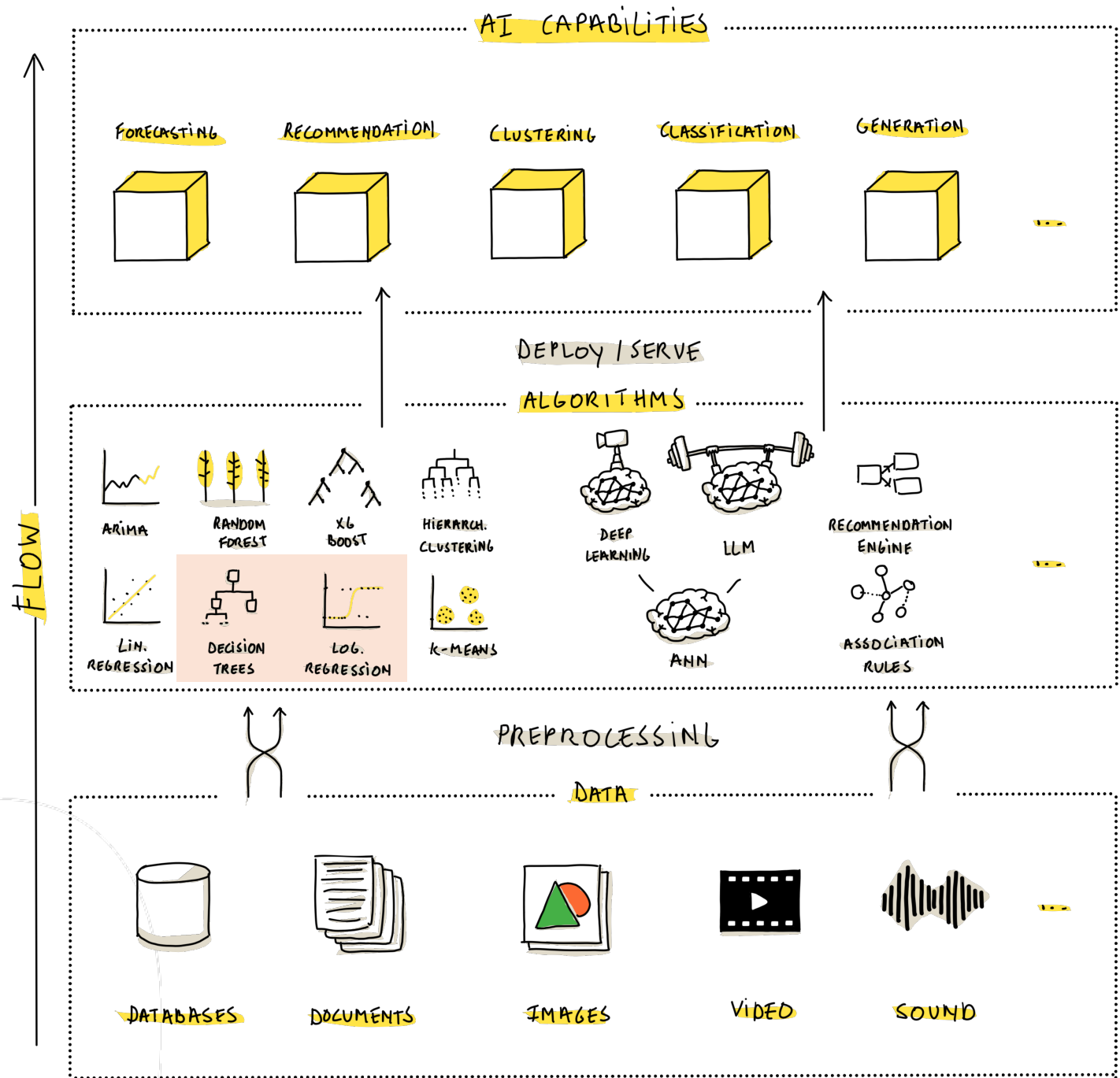


INPUT

OUTPUT

	house age	distance to the nearest MRT station	number of convenience stores	house price of unit area
0	32.0	84.87882	10	37.9
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6	34.5	623.47310	7	40.3
7	20.3	287.60250	6	46.7
8	31.7	5512.03800	1	18.8
9	17.9	1783.18000	3	22.1

$$F(\text{HOUSE AGE}, \text{NMNR OF CONV. STORES}, \text{DISTANCE MRT STATION}) = \text{HOUSE PRICE}$$





CLASSIFICATION

GOAL

PREDICTING THE
CORRECT LABEL

USE CASES

Customer Segmentation

Fraud Detection

Spam Filtering

Medical Diagnosis



CLASSIFICATION

GOAL

PREDICTING THE
CORRECT LABEL

USE CASES

Customer Segmentation

Fraud Detection

Spam Filtering

Medical Diagnosis



“Who will Buy a Life Insurance?”

	age	bought_insurance
0	22	0
1	25	0
2	47	1
3	52	0
4	46	1
5	56	1
6	55	0
7	60	1
8	62	1
9	61	1

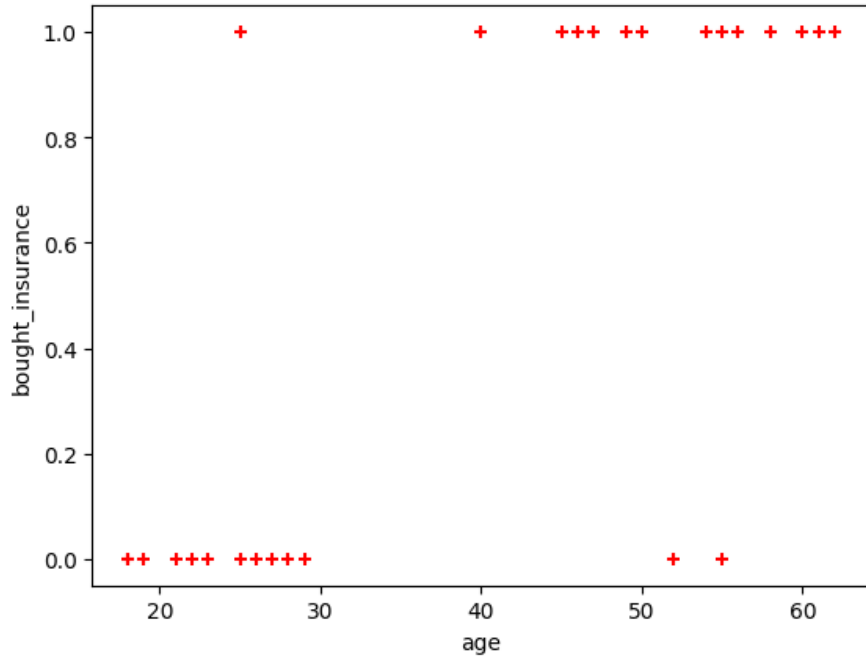


INPUT

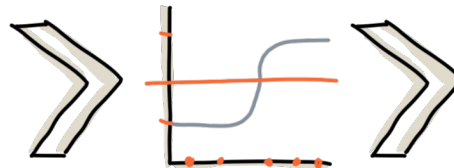
OUTPUT

	age	bought_insurance
0	22	0
1	25	0
2	47	1
3	52	0
4	46	1
5	56	1
6	55	0
7	60	1
8	62	1
9	61	1

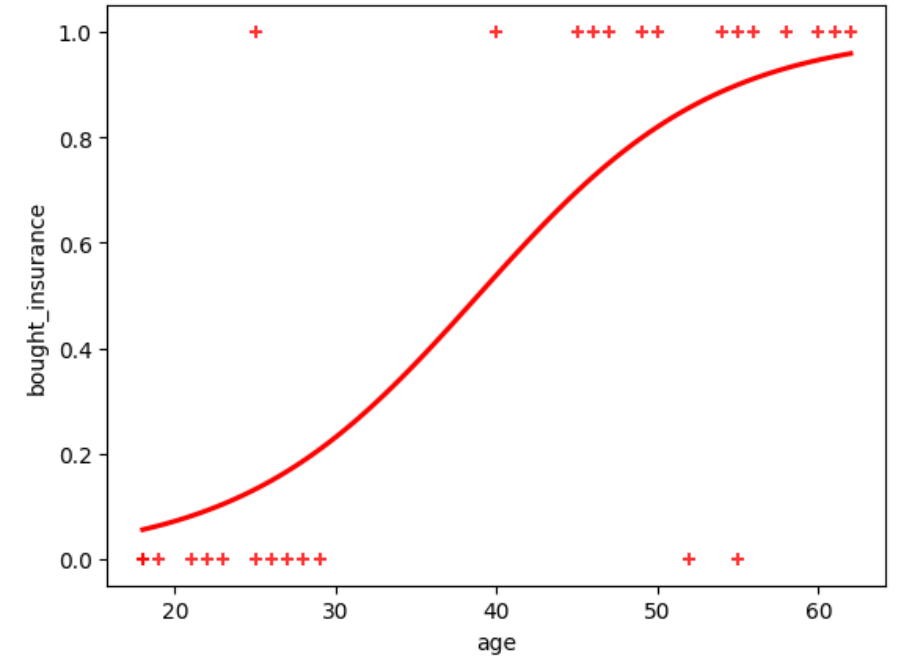
DATA



TRAINING



AI MODEL



$$F(\text{AGE}) = \text{BOUGHT INSURANCE}$$

LOGISTIC REGRESSION
=> SIGMOID FUNCTION





CLASSIFICATION

GOAL

PREDICTING THE
CORRECT LABEL

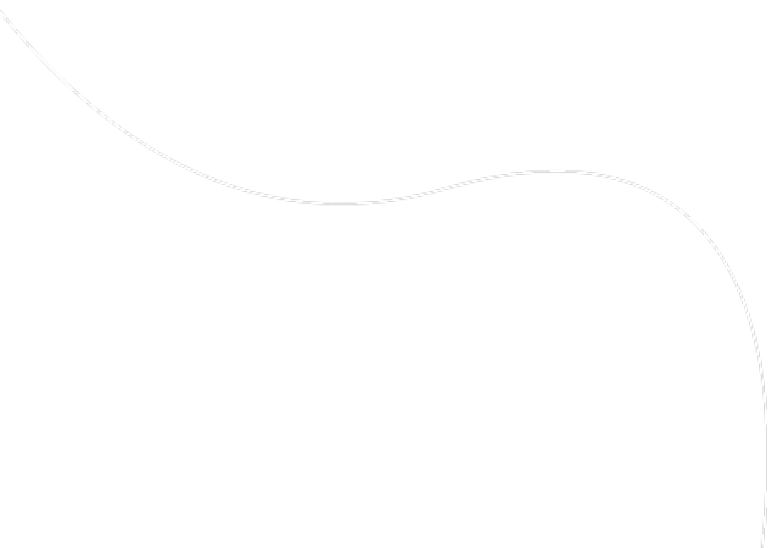
USE CASES

Customer Segmentation

Fraud Detection

Spam Filtering

Medical Diagnosis





“Who Will Develop Diabetes?”

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1
5	5	116	74	0	0	25.6	0.201	30	0
6	3	78	50	32	88	31.0	0.248	26	1
7	10	115	0	0	0	35.3	0.134	29	0
8	2	197	70	45	543	30.5	0.158	53	1
9	8	125	96	0	0	0.0	0.232	54	1



INPUT

OUTPUT

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1
5	5	116	74	0	0	25.6	0.201	30	0
6	3	78	50	32	88	31.0	0.248	26	1
7	10	115	0	0	0	35.3	0.134	29	0
8	2	197	70	45	543	30.5	0.158	53	1
9	8	125	96	0	0	0.0	0.232	54	1

$$F(\dots) = \text{OUTCOME}$$

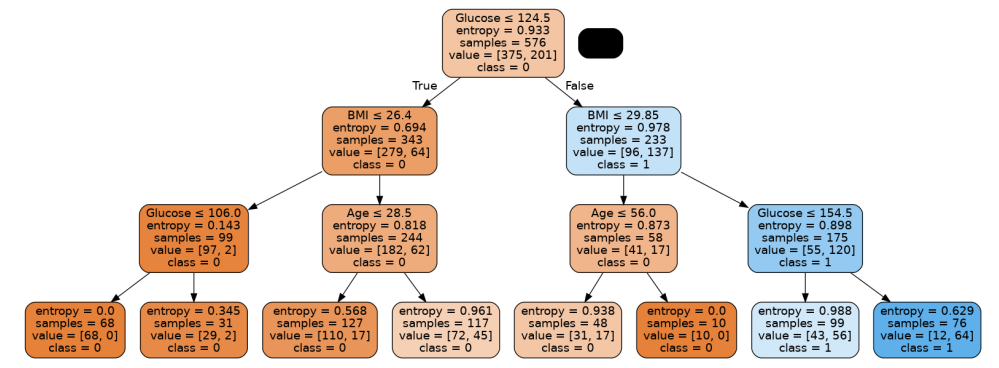
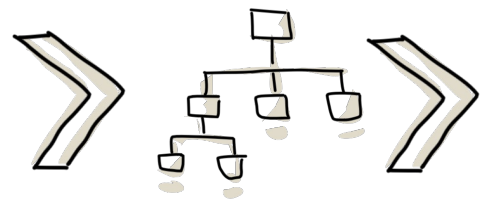
DATA

TRAINING

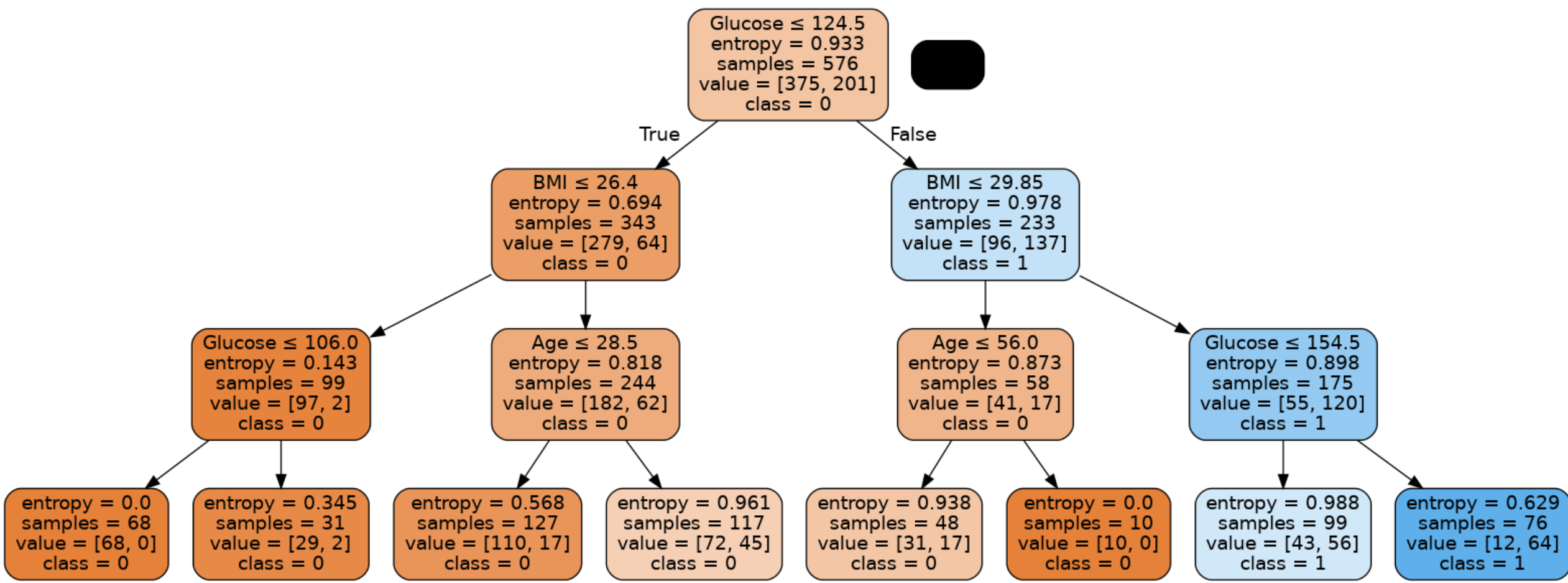
AI MODEL

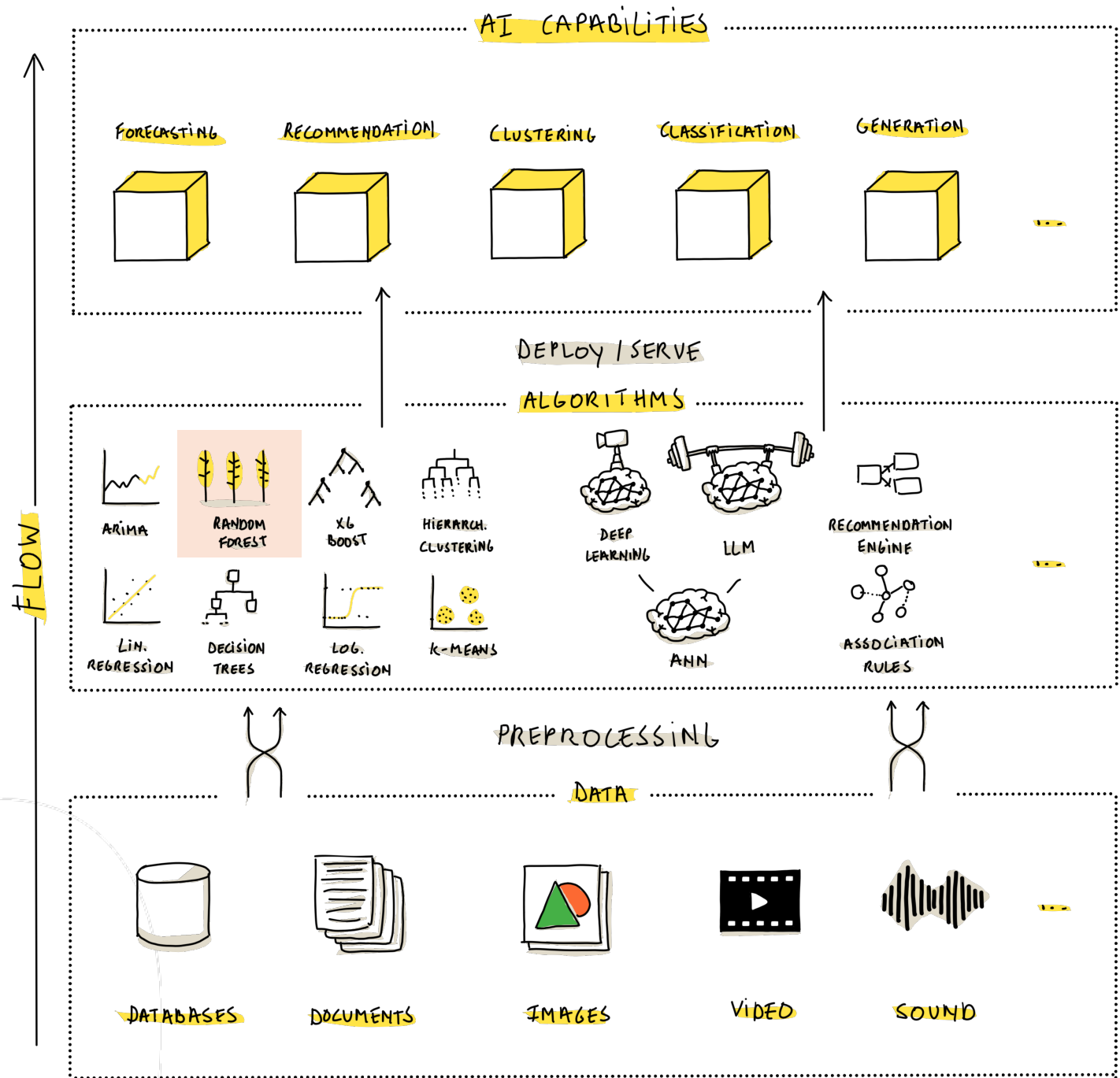


Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome	
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1
5	5	116	74	0	0	25.6	0.201	30	0
6	3	78	50	32	88	31.0	0.248	26	1
7	10	115	0	0	0	35.3	0.134	29	0
8	2	197	70	45	543	30.5	0.158	53	1
9	8	125	96	0	0	0.0	0.232	54	1



$F(\dots) = \text{OUTCOME}$
 ↳ DECISION TREE

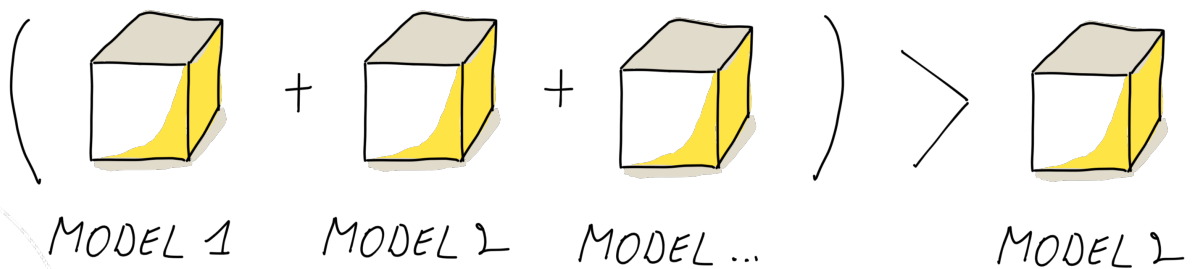
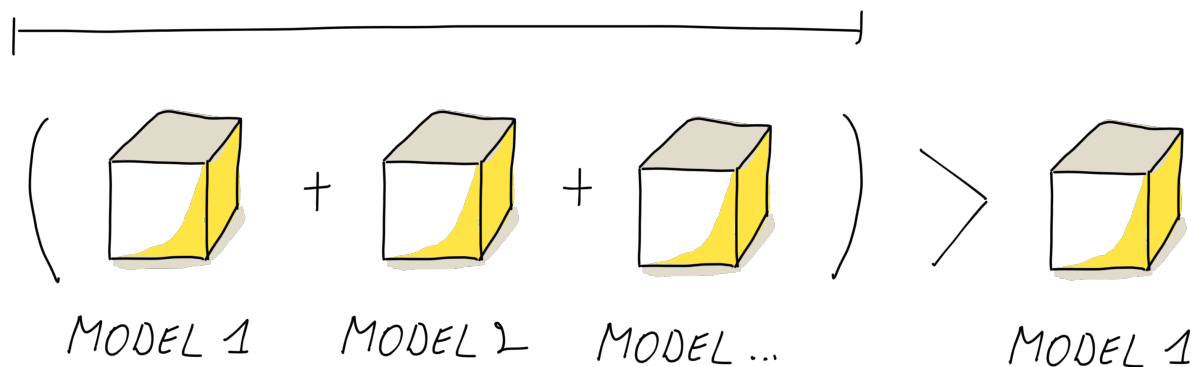






Ensemble Models

ENSEMBLE MODEL

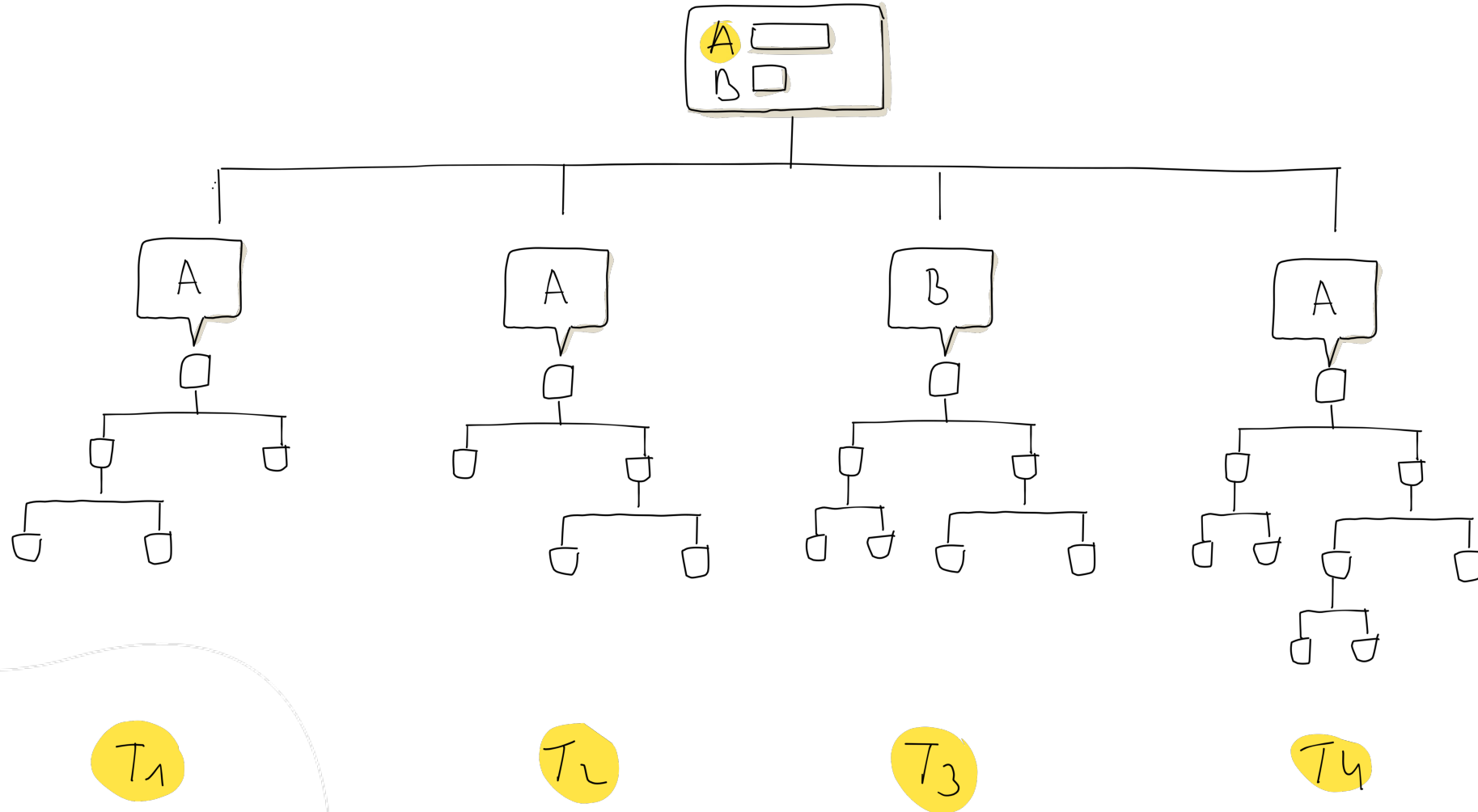


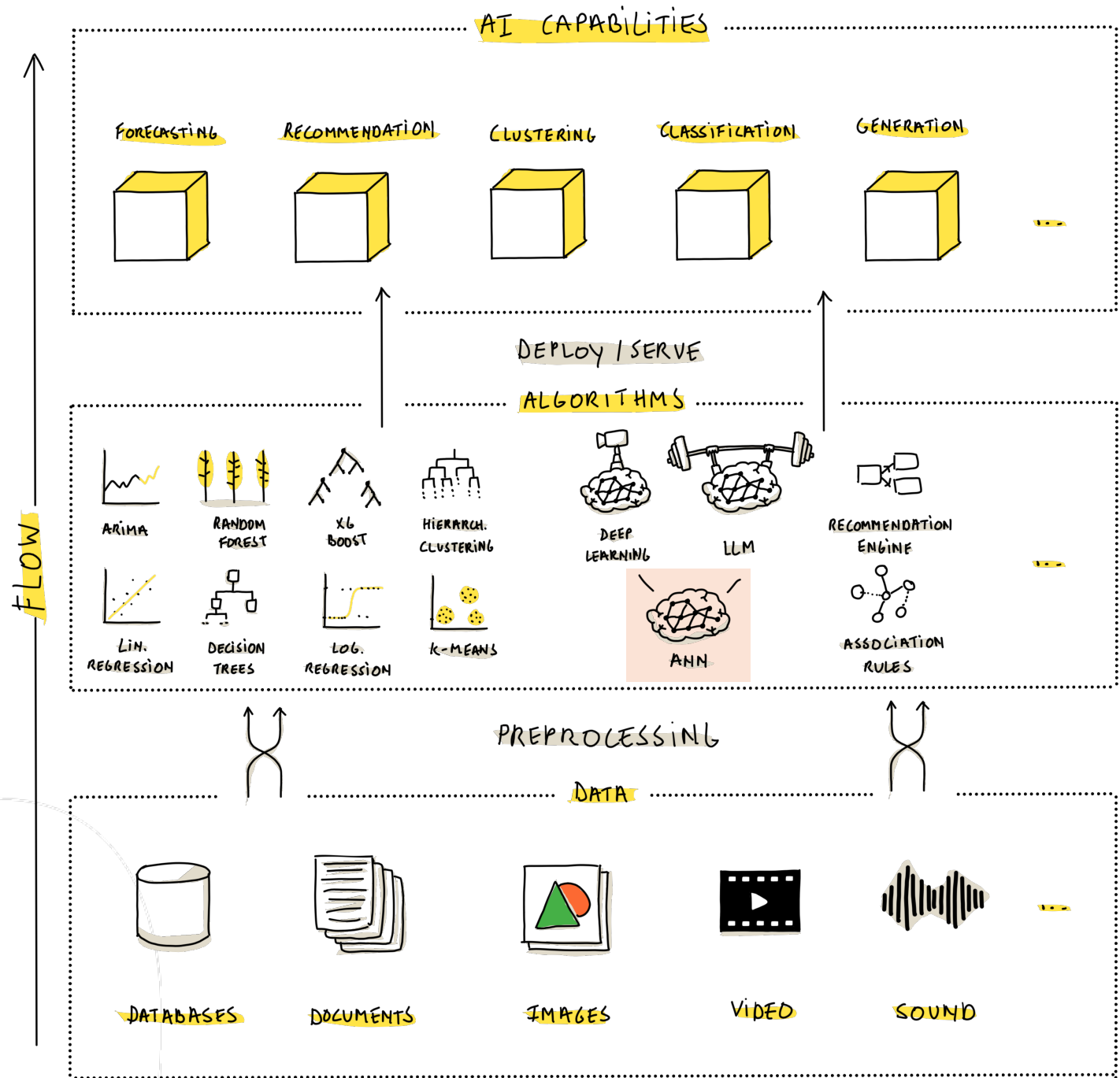
...

...



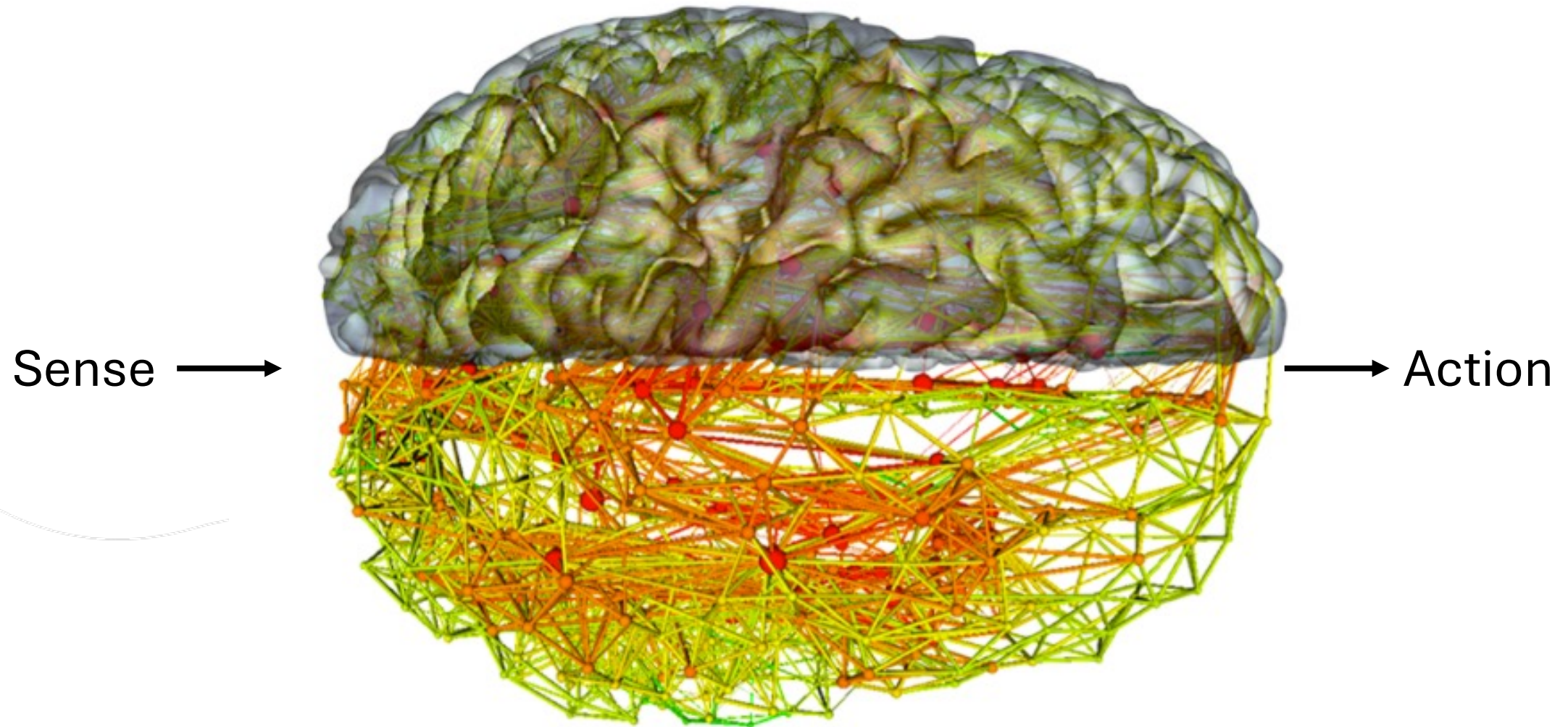
Example: Random Forests





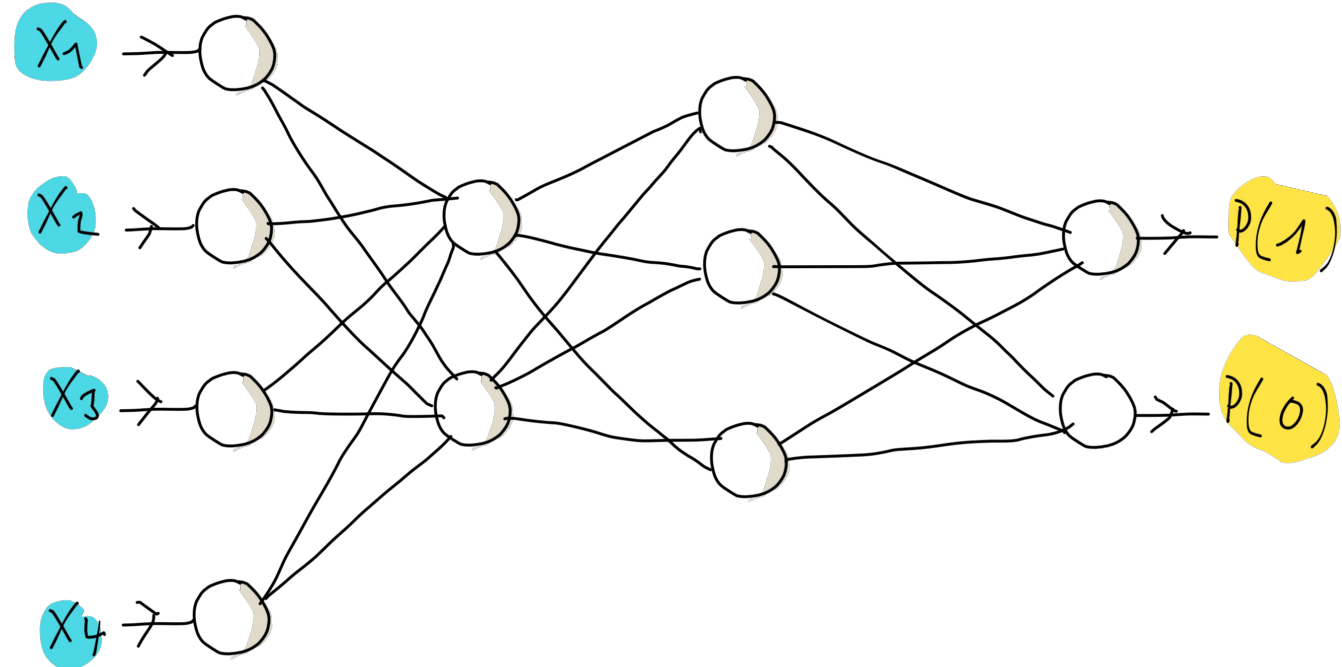


Inspired by the **Biological Brain**



ANN: Artificial Neural Network

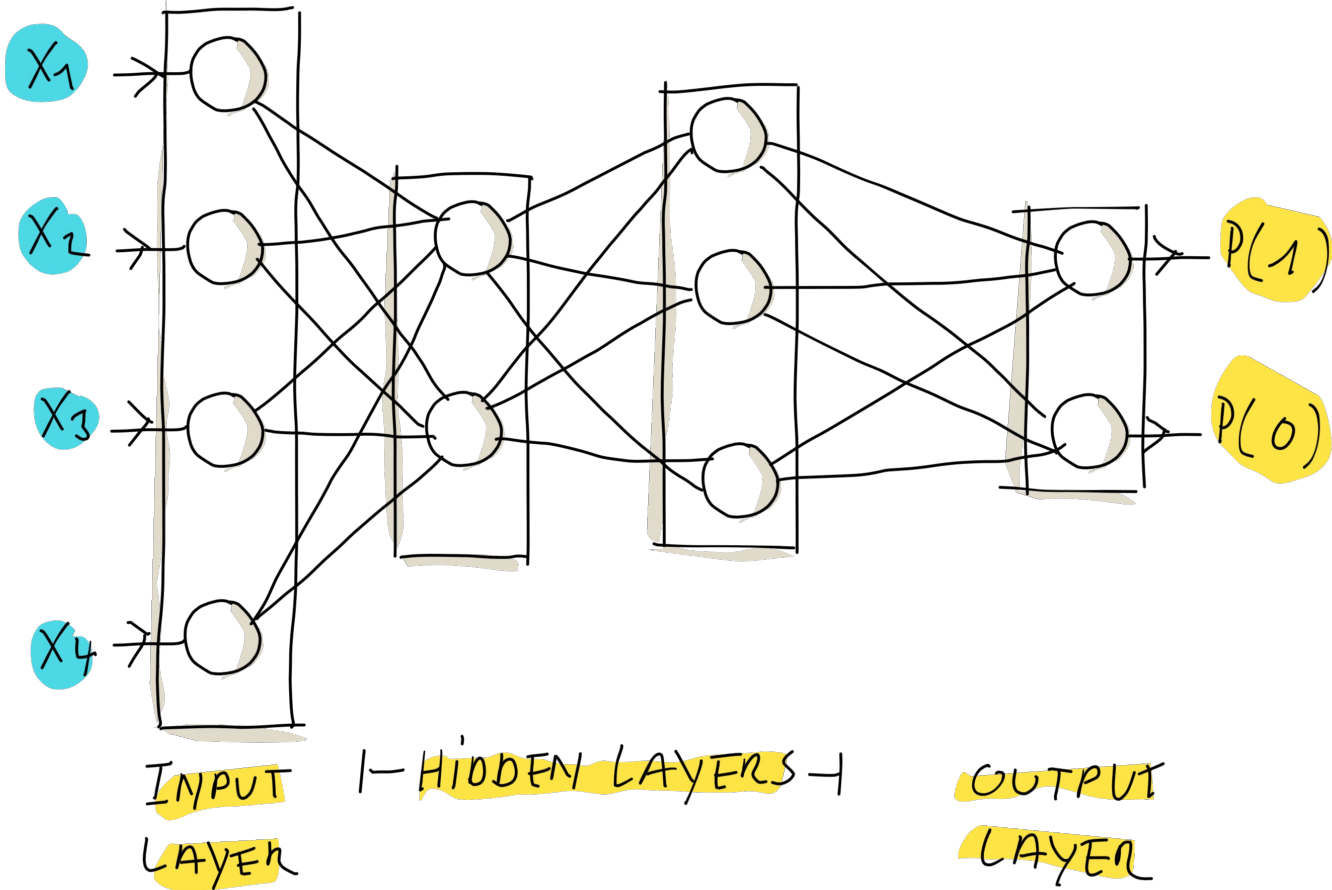
X_1	X_2	X_3	X_4	Y
0.1	5.2	-1	T	1
0.2	4.9	-3	T	0
0.4	8	-4	F	0
0.3	3	-5	F	1
0.9	2	-2	T	0



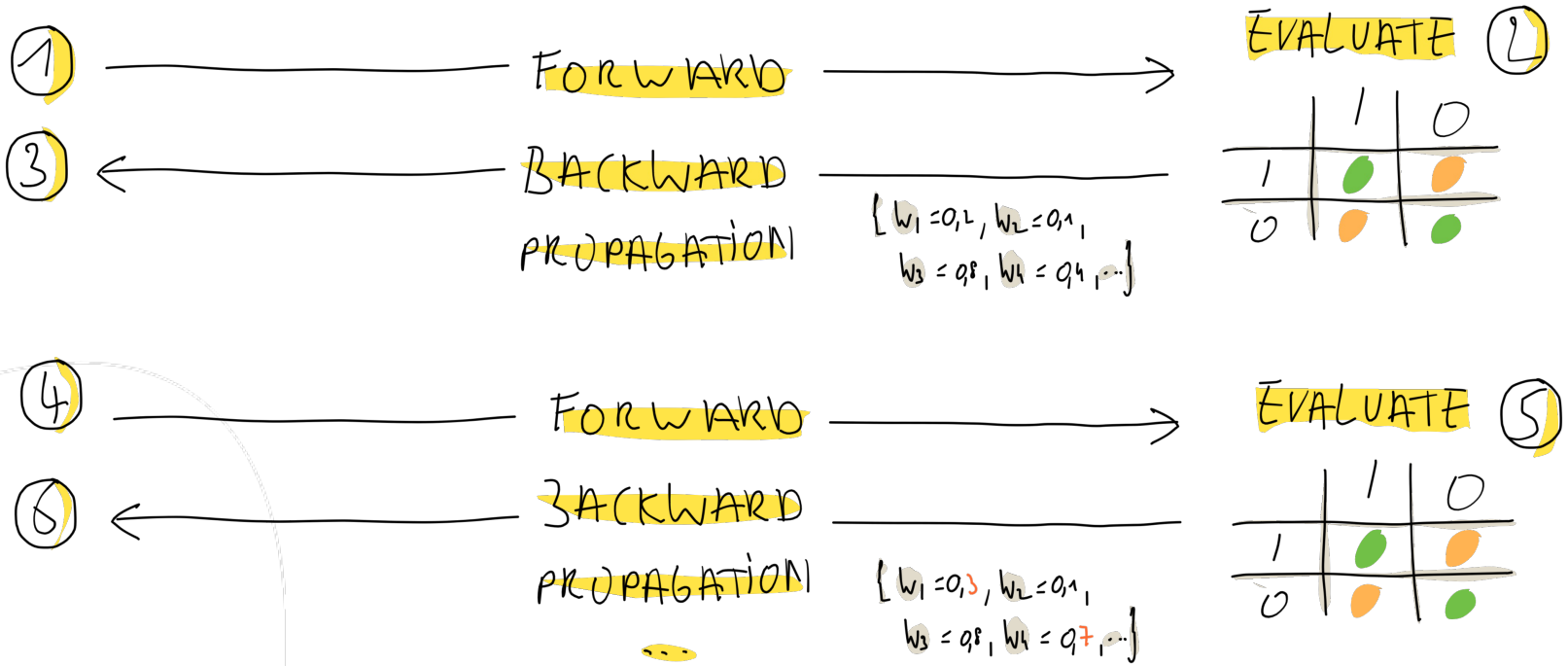
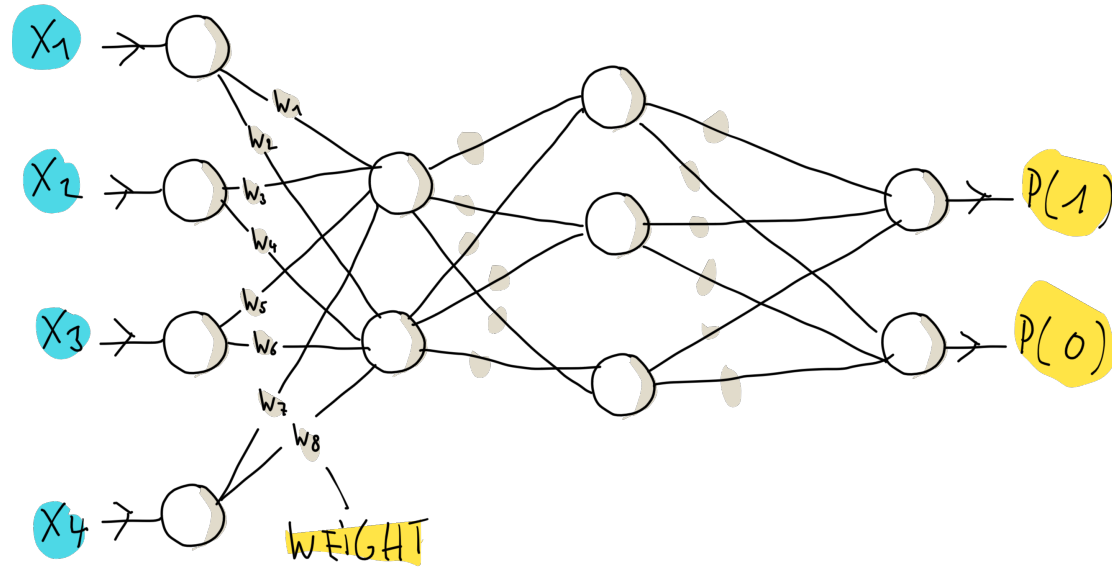


ANN: Artificial Neural Network

x_1	x_2	x_3	x_4	y
0.1	5.2	-1	T	1
0.2	4.9	-3	T	0
0.4	8	-4	F	0
0.3	3	-5	F	1
0.9	2	-2	T	0



ANN Training



EVALUATE ②

	1	0
1	●	●
0	●	●

EVALUATE ⑤

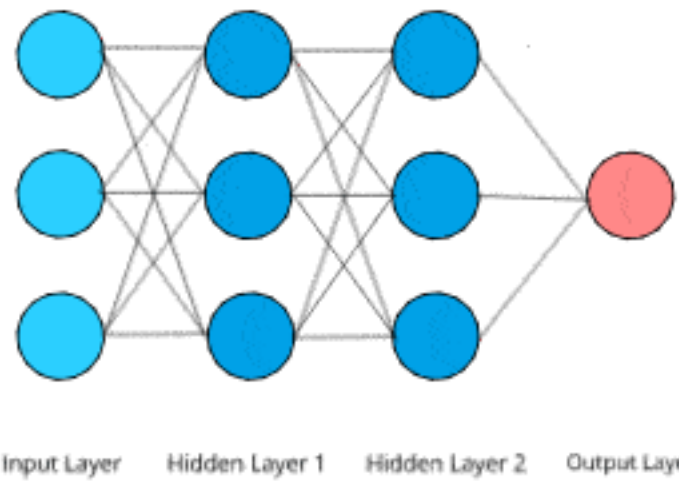
	1	0
1	●	●
0	●	●



Feed new data



X1
X2
X3



Y_pred



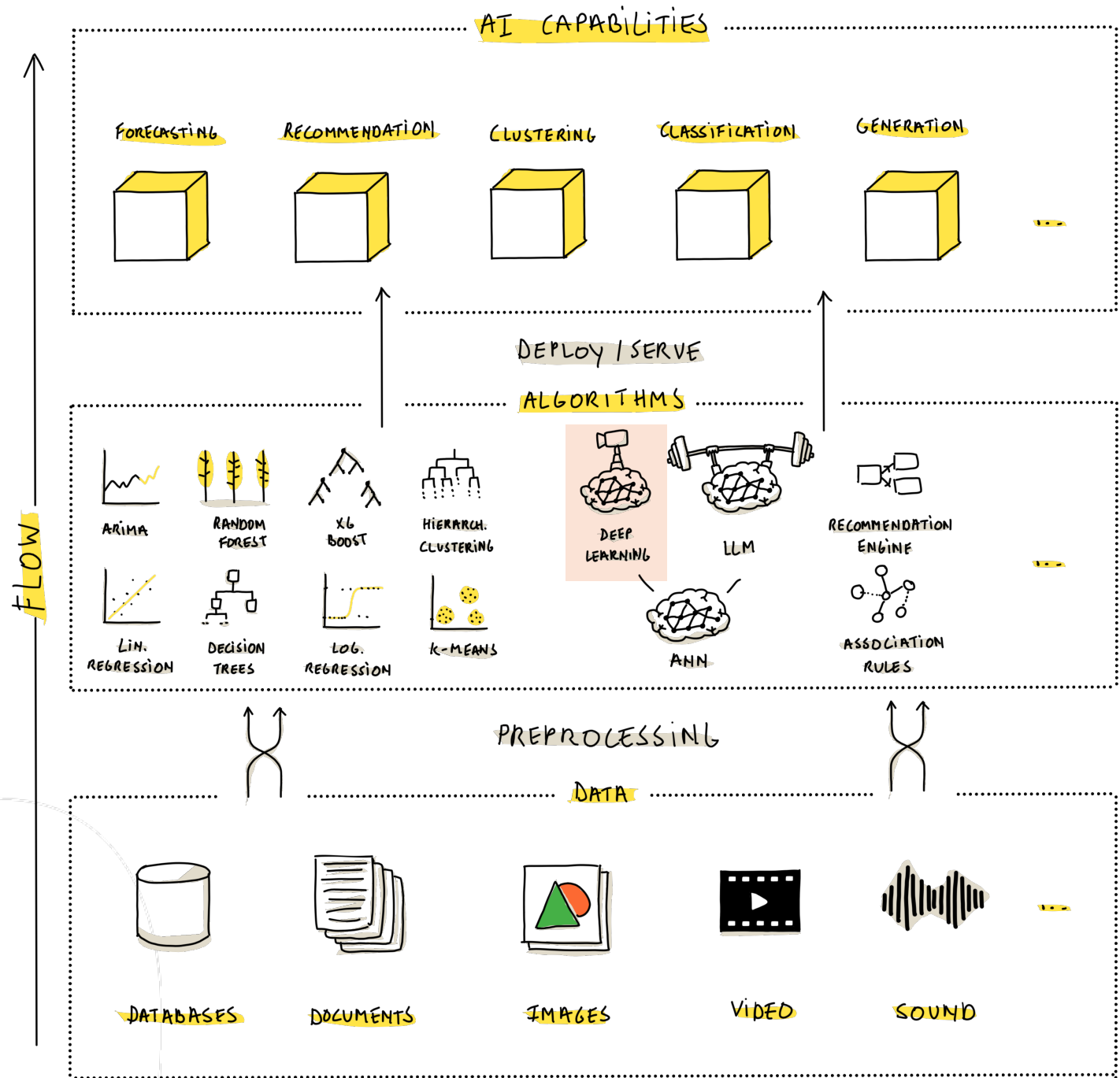
Error

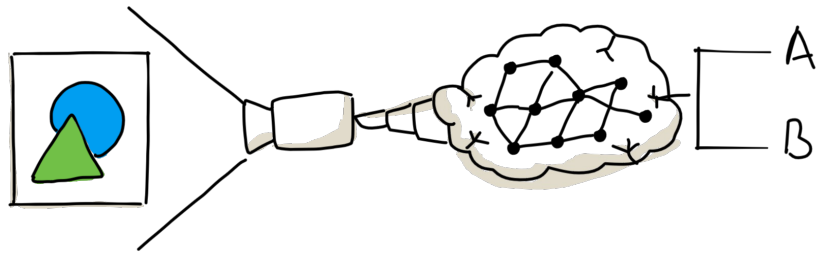
Y



Example: Diabetes Prediction

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1
5	5	116	74	0	0	25.6	0.201	30	0
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8	2	197	70	45	543	30.5	0.158	53	1
9	8	125	96	0	0	0.0	0.232	54	1





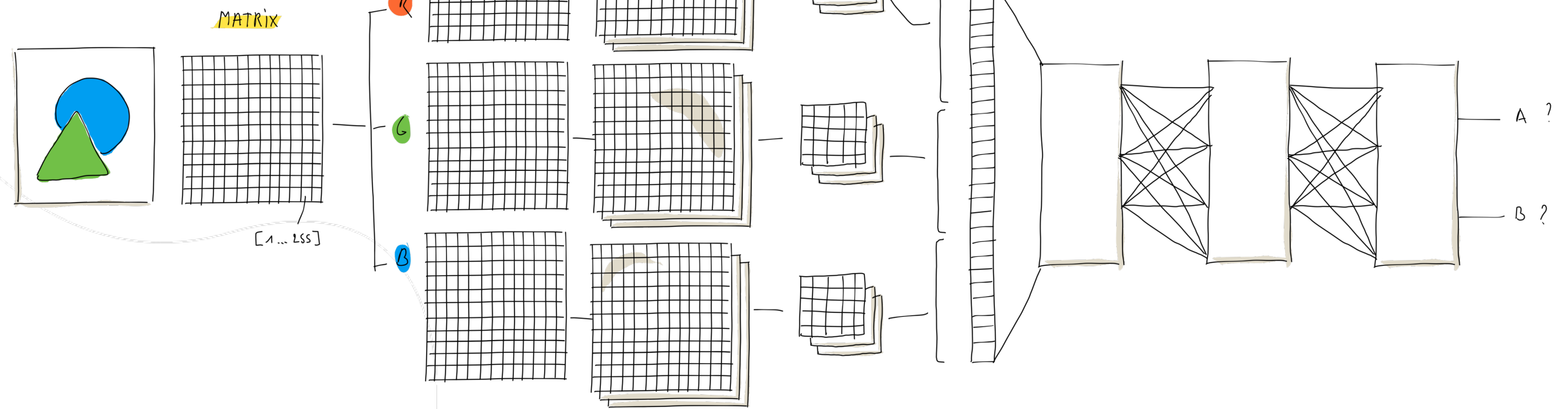
INPUT | CAMERA | FULLY CONNECTED NN

MULTIPLE LAYERS
FEATURE MAPS (CONVOLUTION)

POOLING

FLATTENING

REPEATED MULTIPLE TIMES

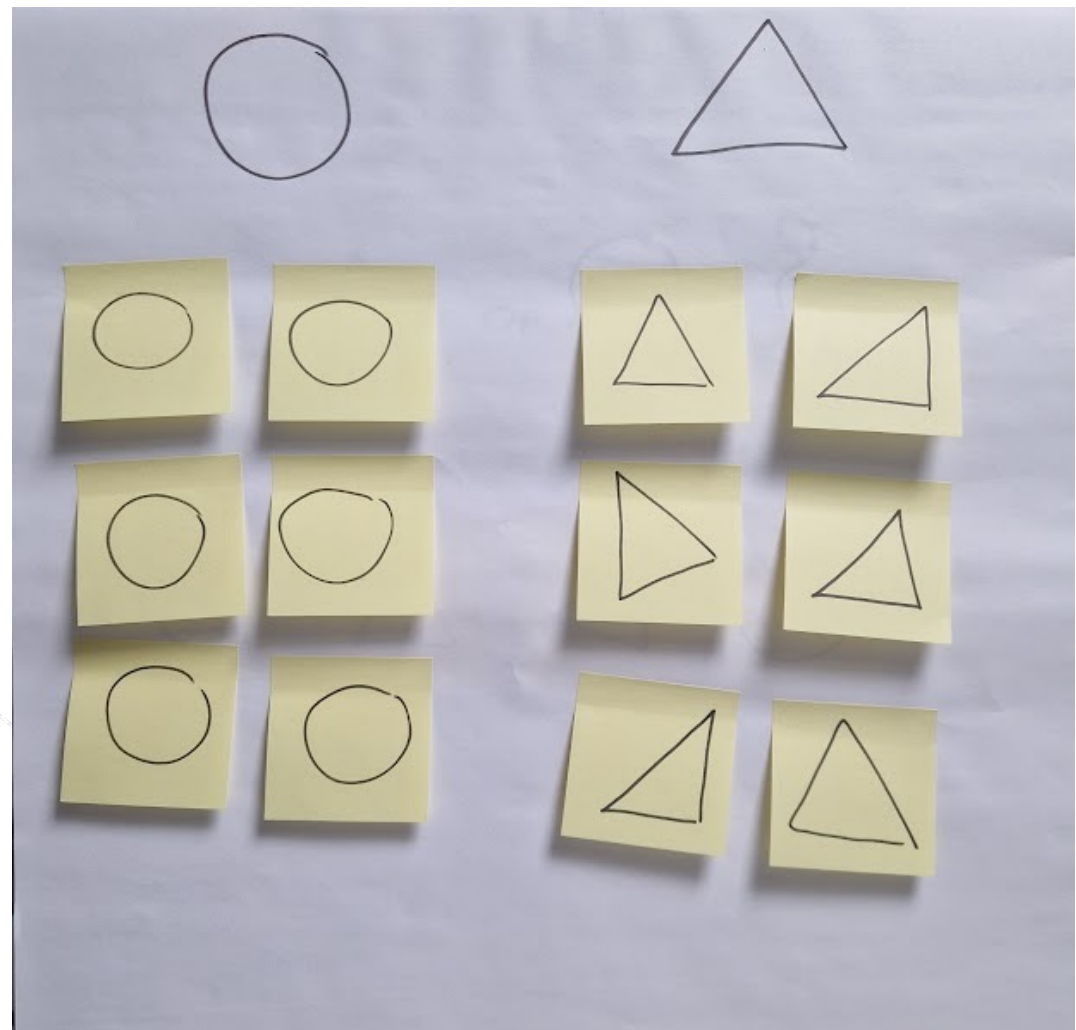




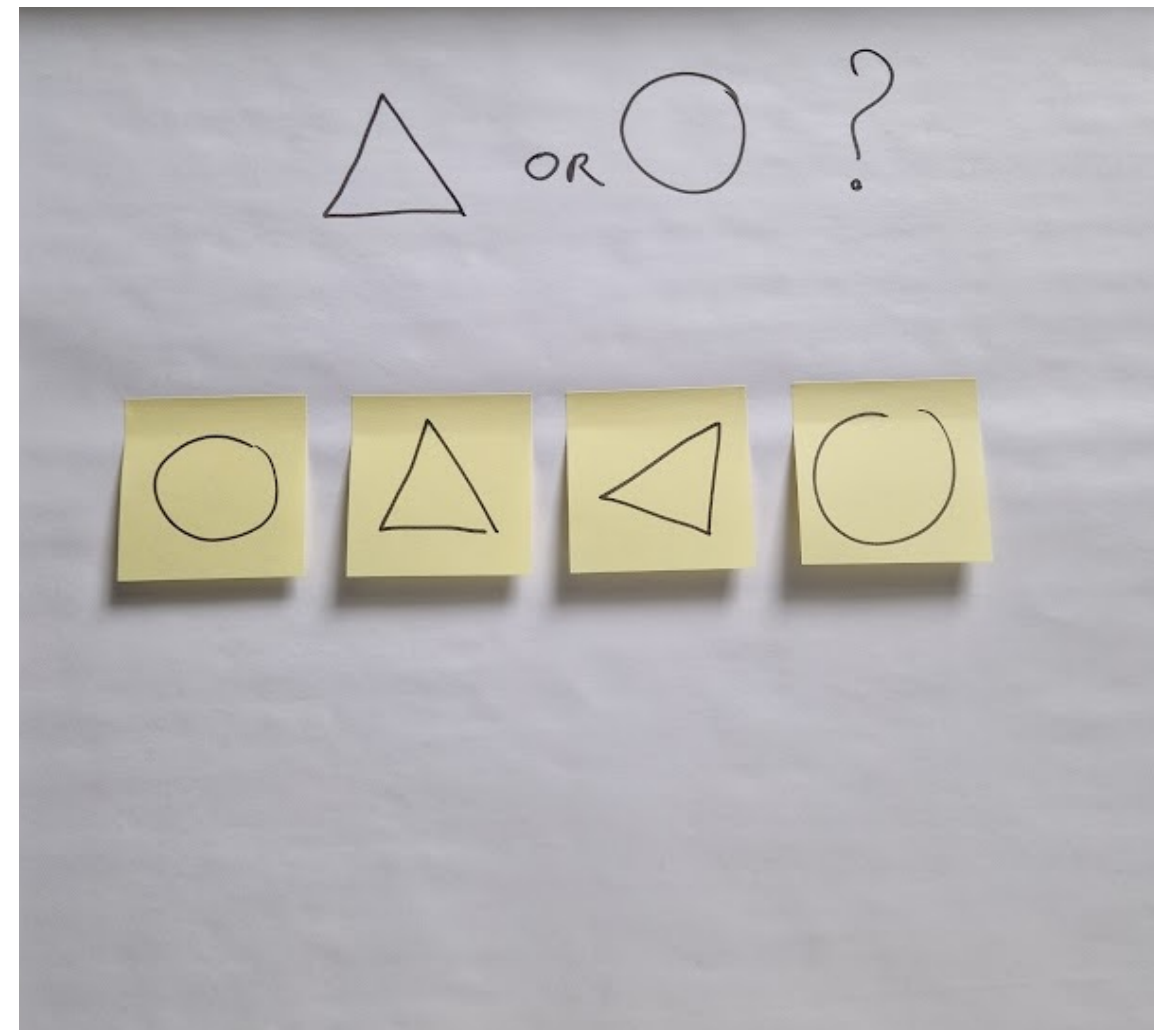
2D CNN ANIMATION

BASIC ARCHITECTURE

TRAINING

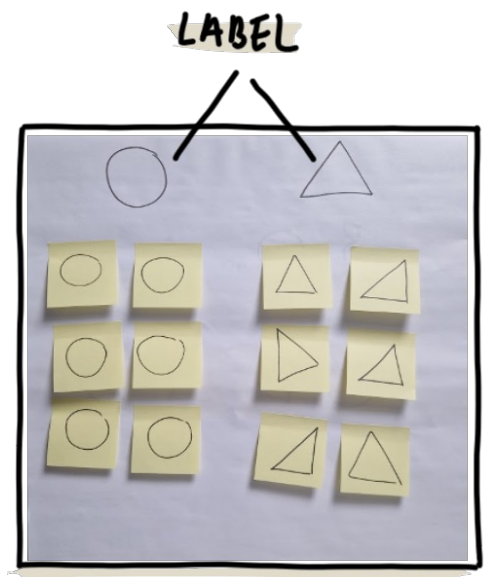


SERVING

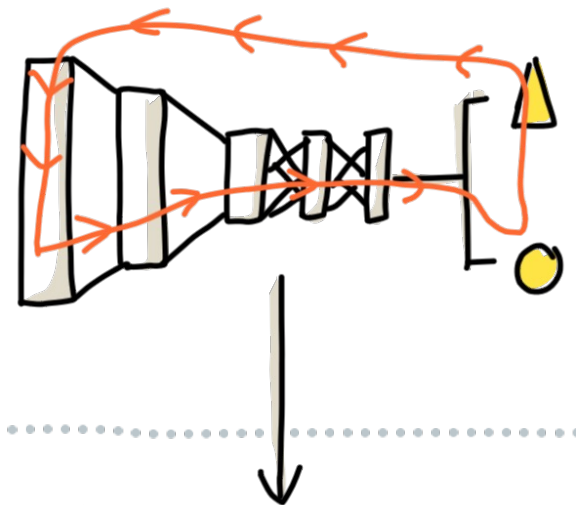


TRAINING

① TRAINING DATA



② ANN TRAINING

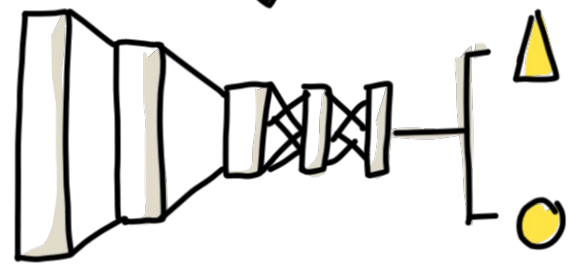


SERVING

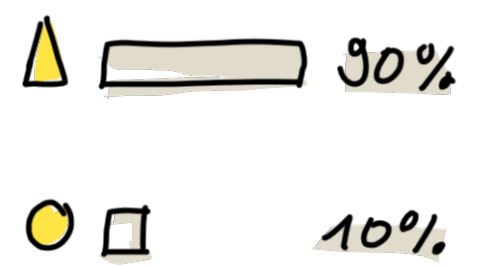
④ NEW DATA



③ TRAINED ANN



④ PREDICTION

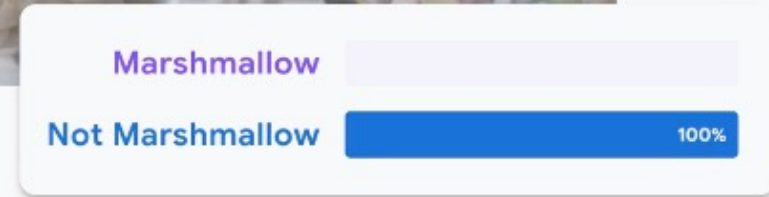
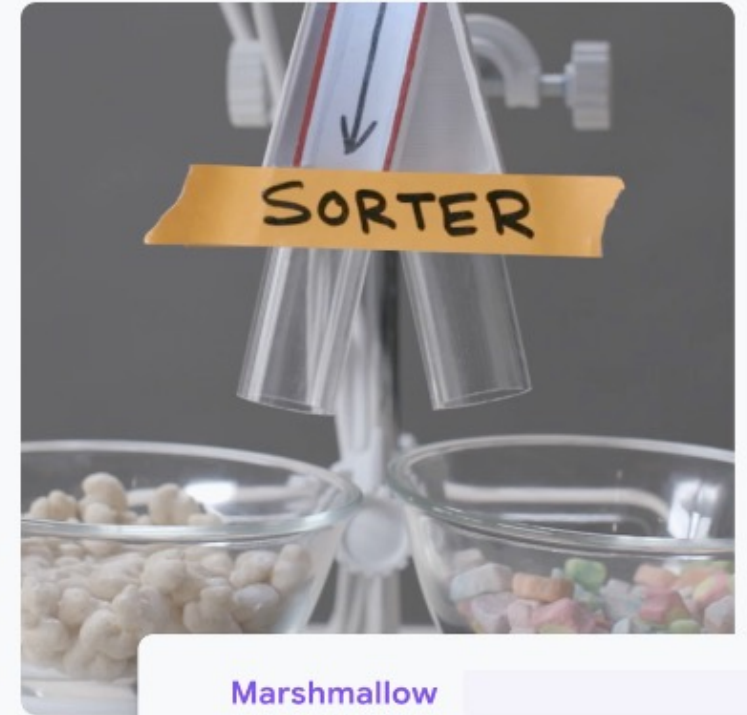


Teachable Machine

Train a computer to recognize your own images, sounds, & poses.

A fast, easy way to create machine learning models for your sites, apps, and more – no expertise or coding required.

Get Started



2 DEMOS

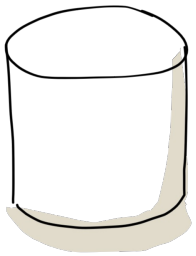


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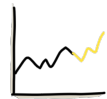
- Introduction
- History of AI
- AI Capabilities
- AI Models
- **Quality of AI Models**
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- AI Breakthroughs and Trends
- Agenda for Day 2



DATA



TRAINING



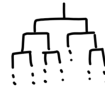
ARIMA



RANDOM FOREST



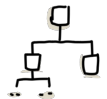
XG BOOST



HIERARCH. CLUSTERING



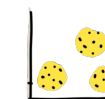
LIN. REGRESSION



DECISION TREES



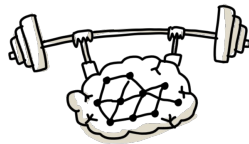
LOG. REGRESSION



K-MEANS



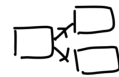
DEEP LEARNING



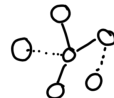
LLM



ANN

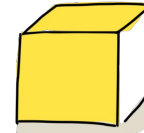


RECOMMENDATION ENGINE



ASSOCIATION RULES

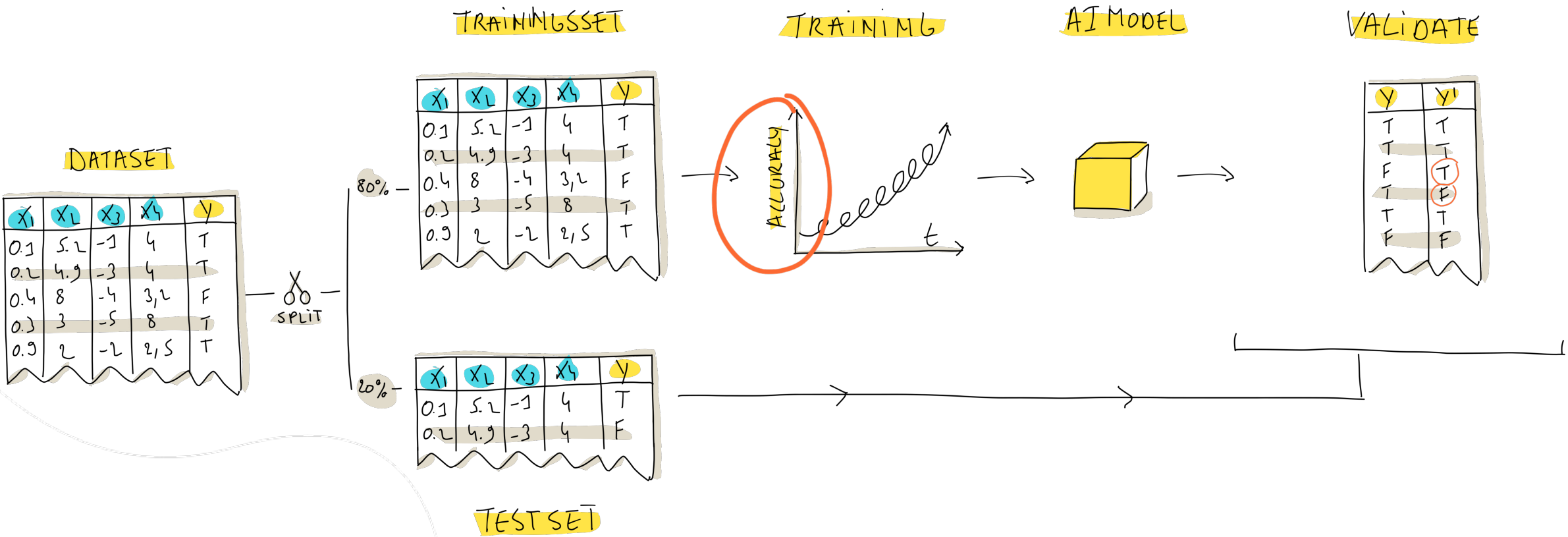
AI MODEL



WHAT'S THE QUALITY OF THIS MODEL



General Testing Approach

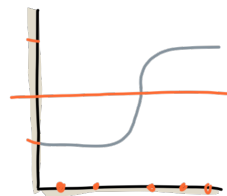




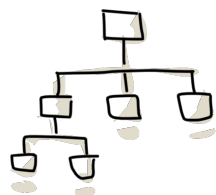
Accuracy: Classification

x_1	x_2	x_3	x_4	y
0.1	5.2	-1	T	1
0.2	4.9	-3	T	0
0.4	8	-4	F	0
0.3	3	-5	F	1
0.9	2	-2	T	0

LABEL



LOGISTIC
REGRESSION



DECISION
TREE

y	y'
1	1
0	1
0	0
1	1
0	1

CONFUSION
MATRIX

	y	
y'	1	0
1	2	2
0	0	1

ACCURACY = 60%

OK LIKE THIS ??

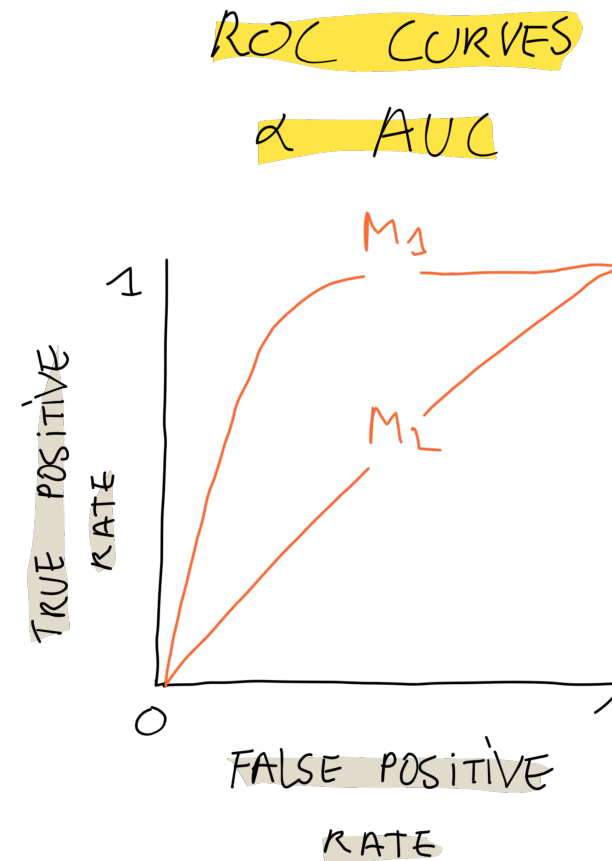


Accuracy: Classification

		y	
		1	0
y'	1	TP	FP
	0	FN	TN

		CANCER?	
		Y	N
CANCER?	Y	TP	FP
	N	FN	TN

⚡⚡



$$M_1 > M_2$$

ROC: Receiver-operating characteristic
AUC: Area Under Curve



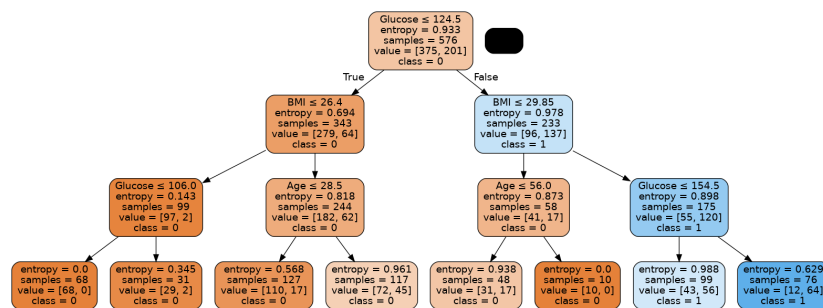
Example: Diabetes Prediction

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1
5	5	116	74	0	0	25.6	0.201	30	0
6	3	78	50	32	88	31.0	0.248	26	1
7	10	115	0	0	0	35.3	0.134	29	0
8	2	197	70	45	543	30.5	0.158	53	1
9	8	125	96	0	0	0.0	0.232	54	1

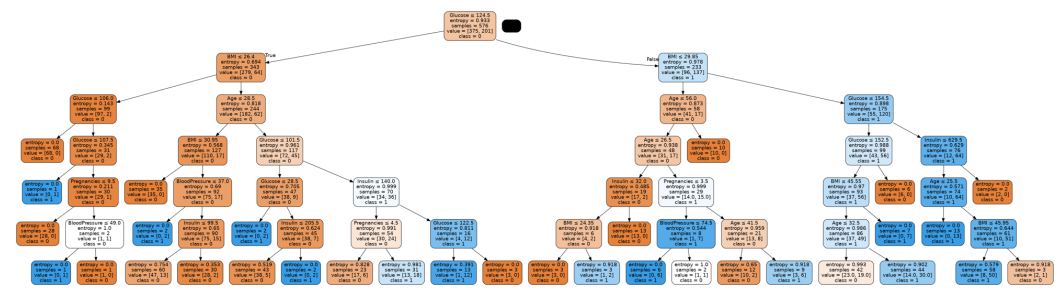


Logistic Regression

Decision tree - 3 levels

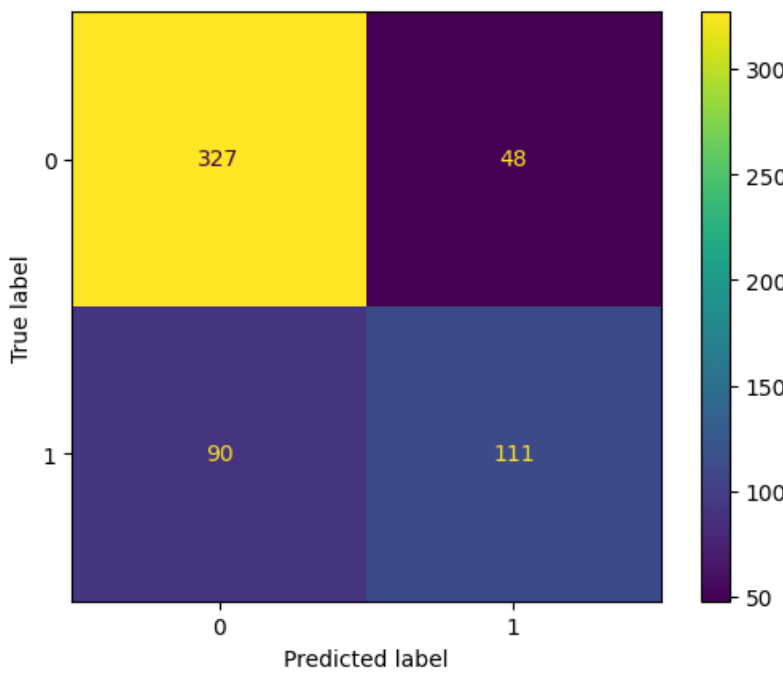


Decision tree - 6 levels



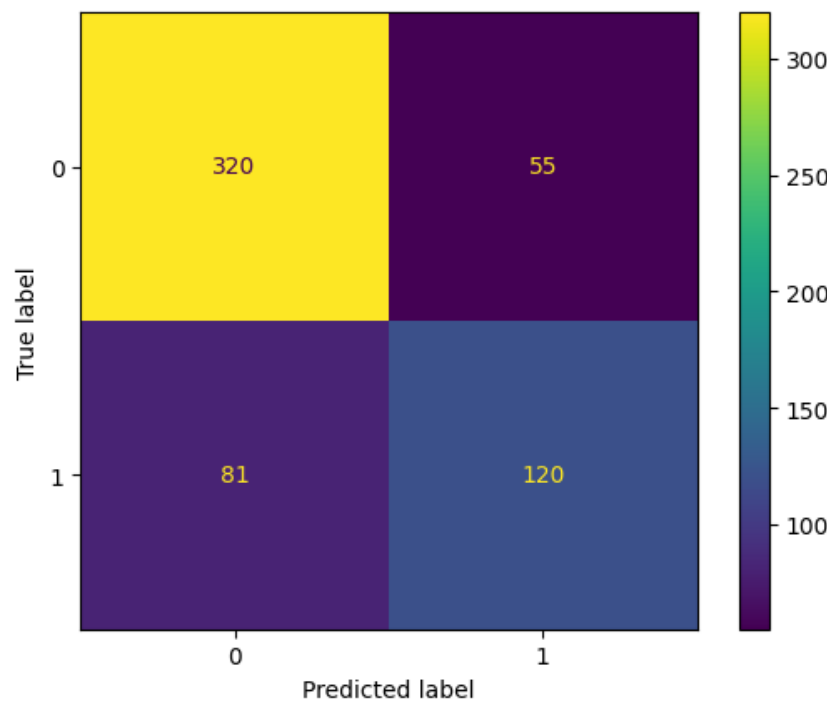


Logistic Regression



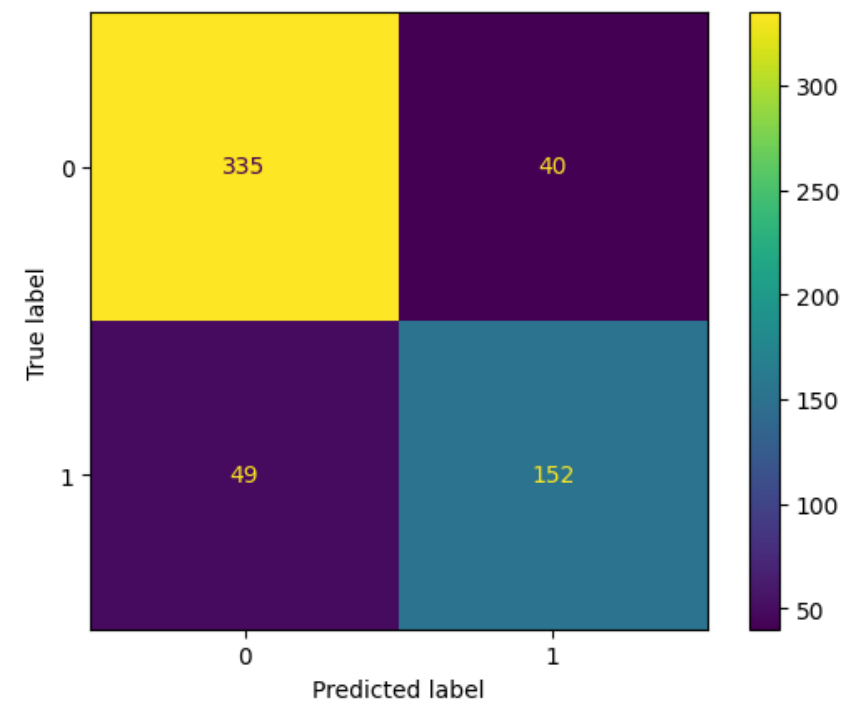
Acc = 76%

Decision tree - 3 levels



Acc = 76%

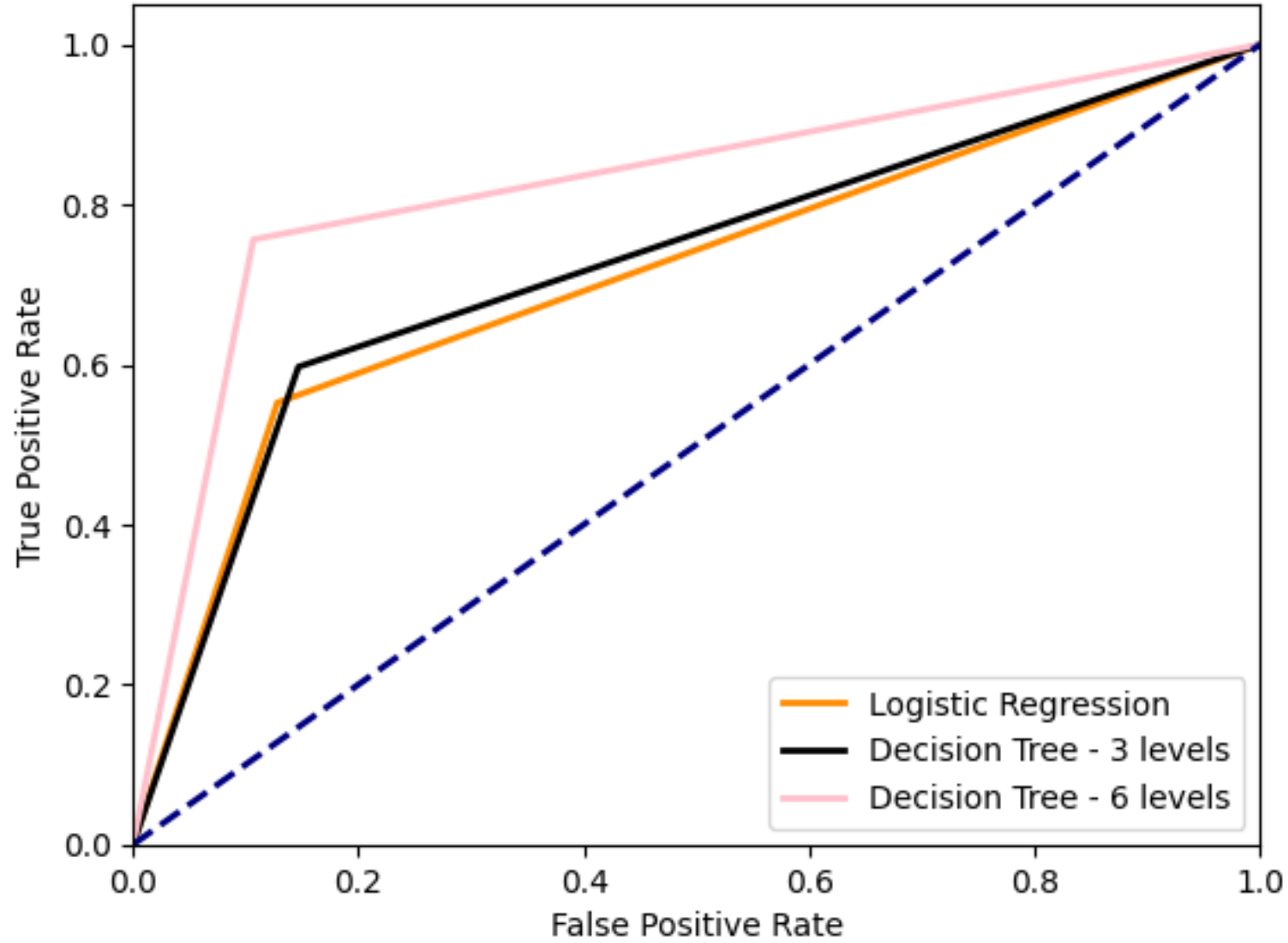
Decision tree - 6 levels



Acc = 85%

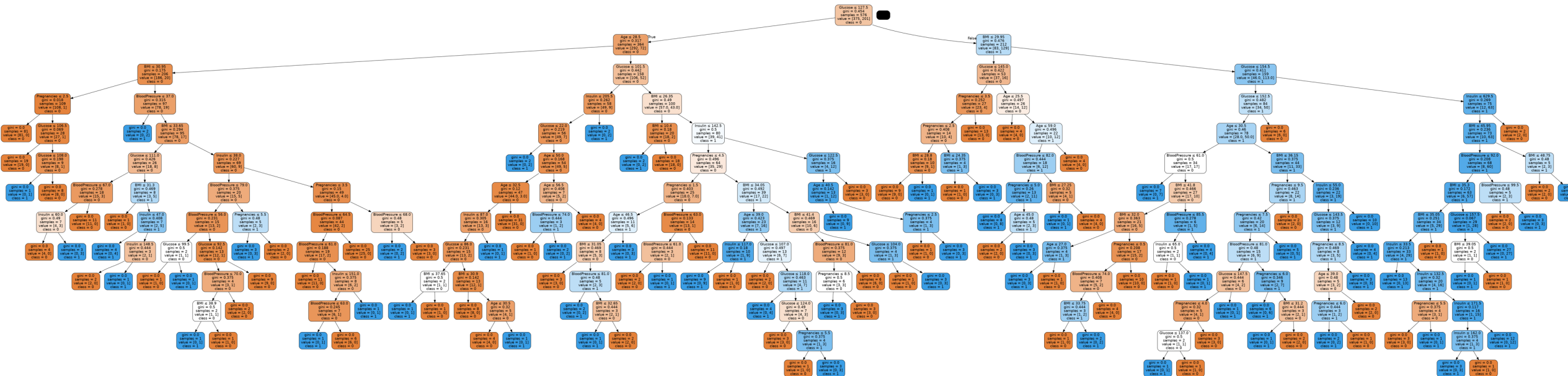


Receiver operating characteristic



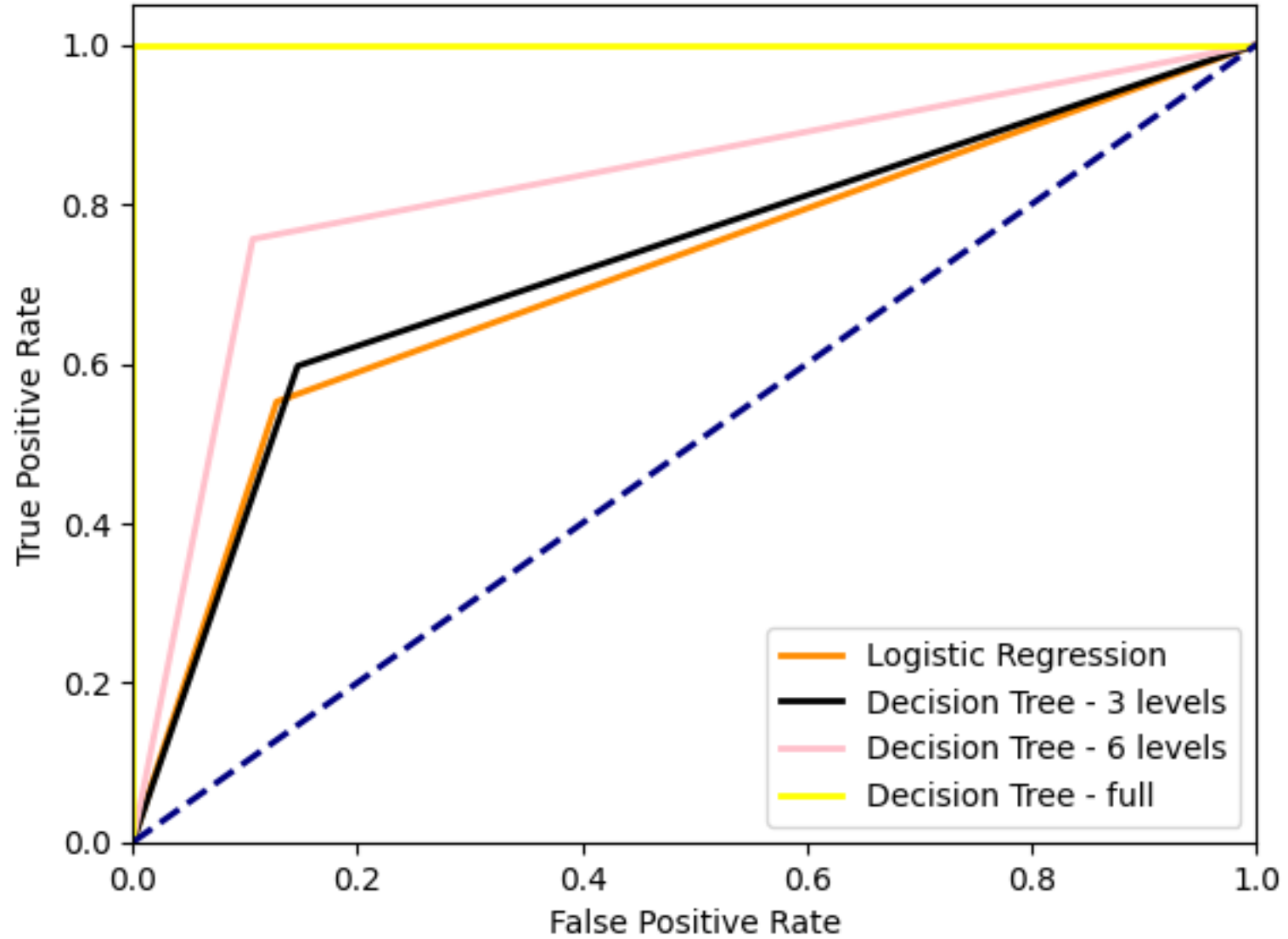


We add one more model: A “Full-Blown” Decision Tree



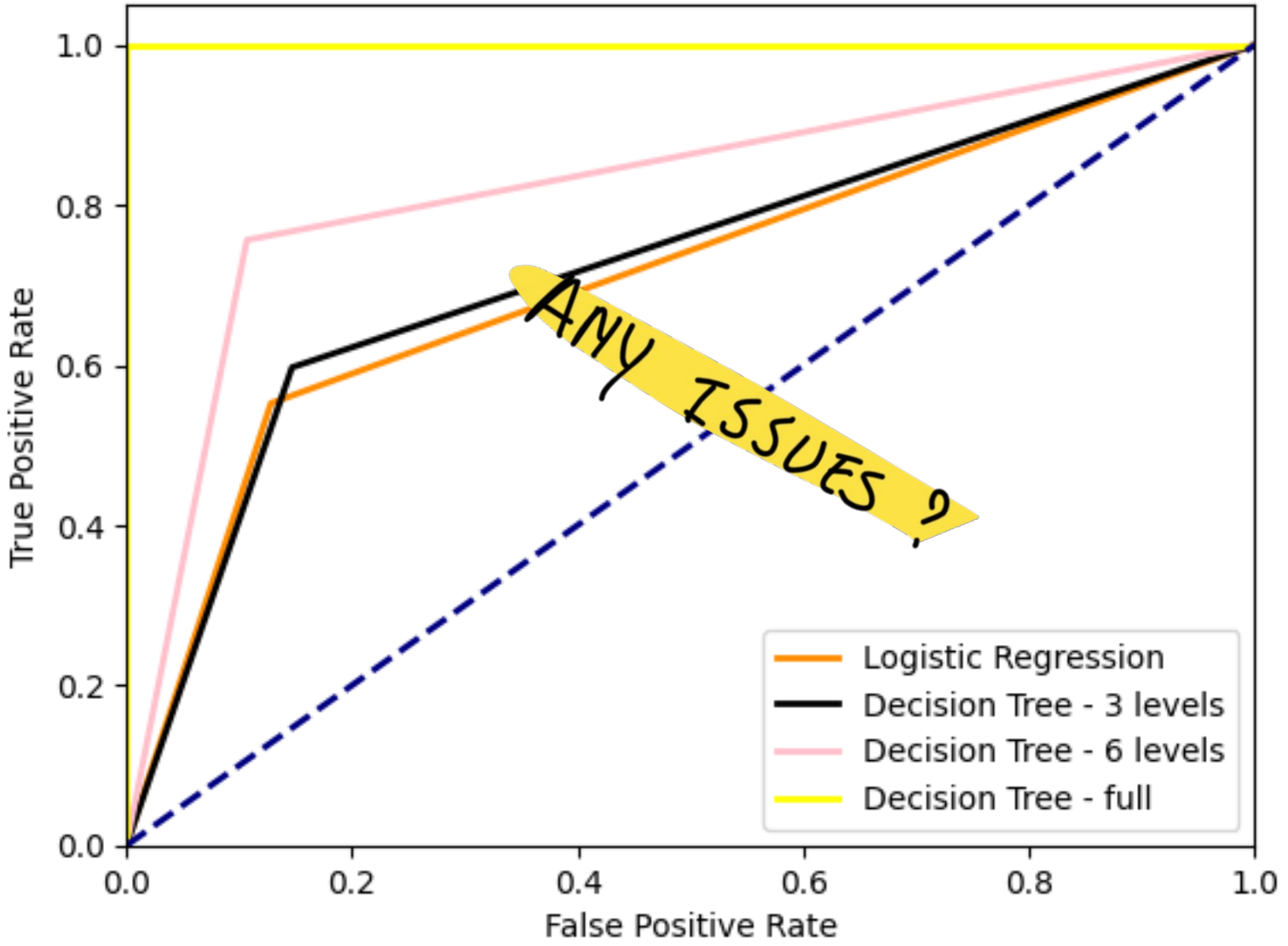


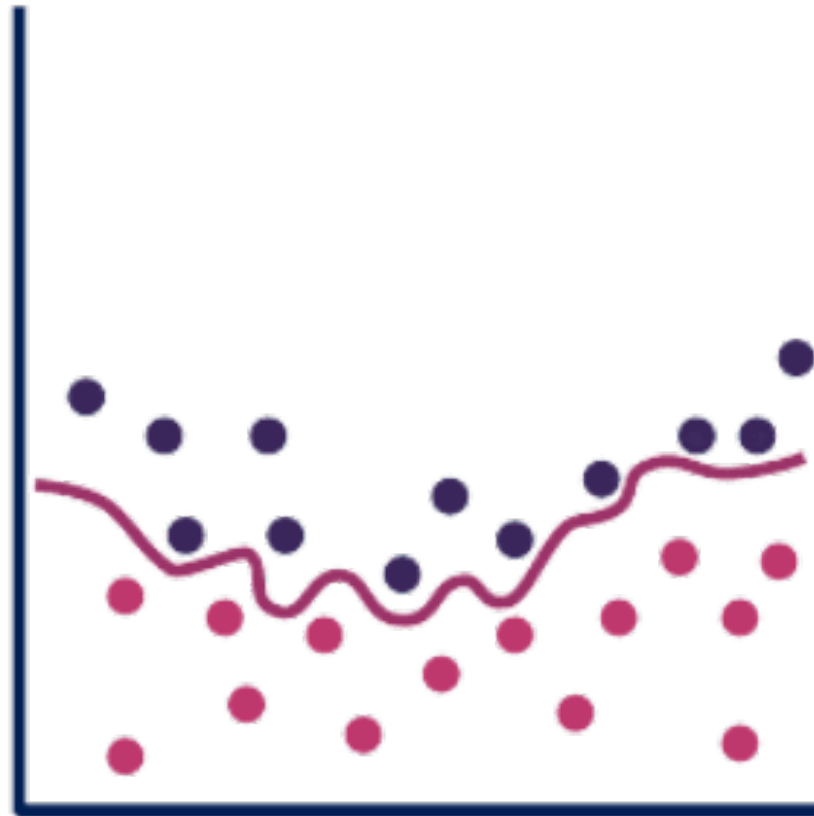
Receiver operating characteristic





Receiver operating characteristic

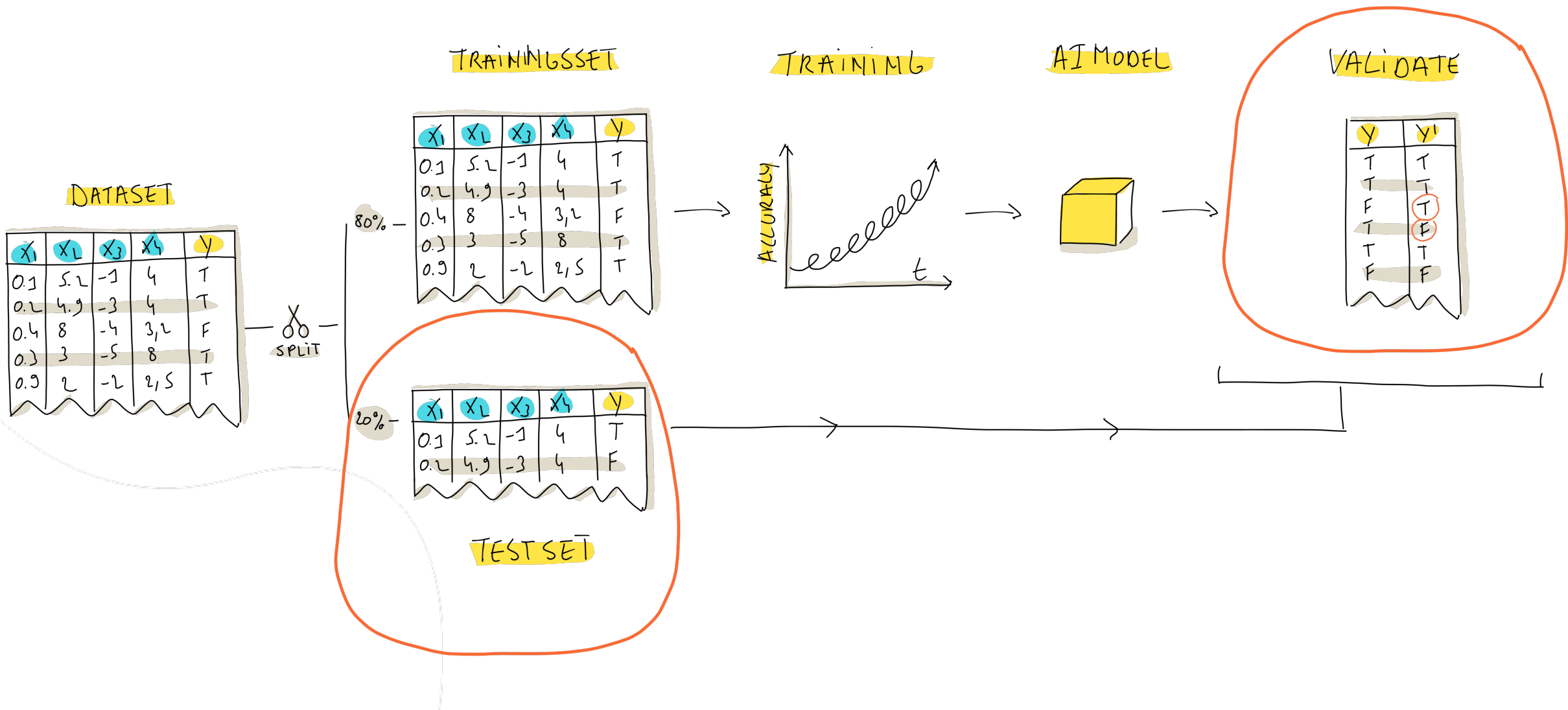


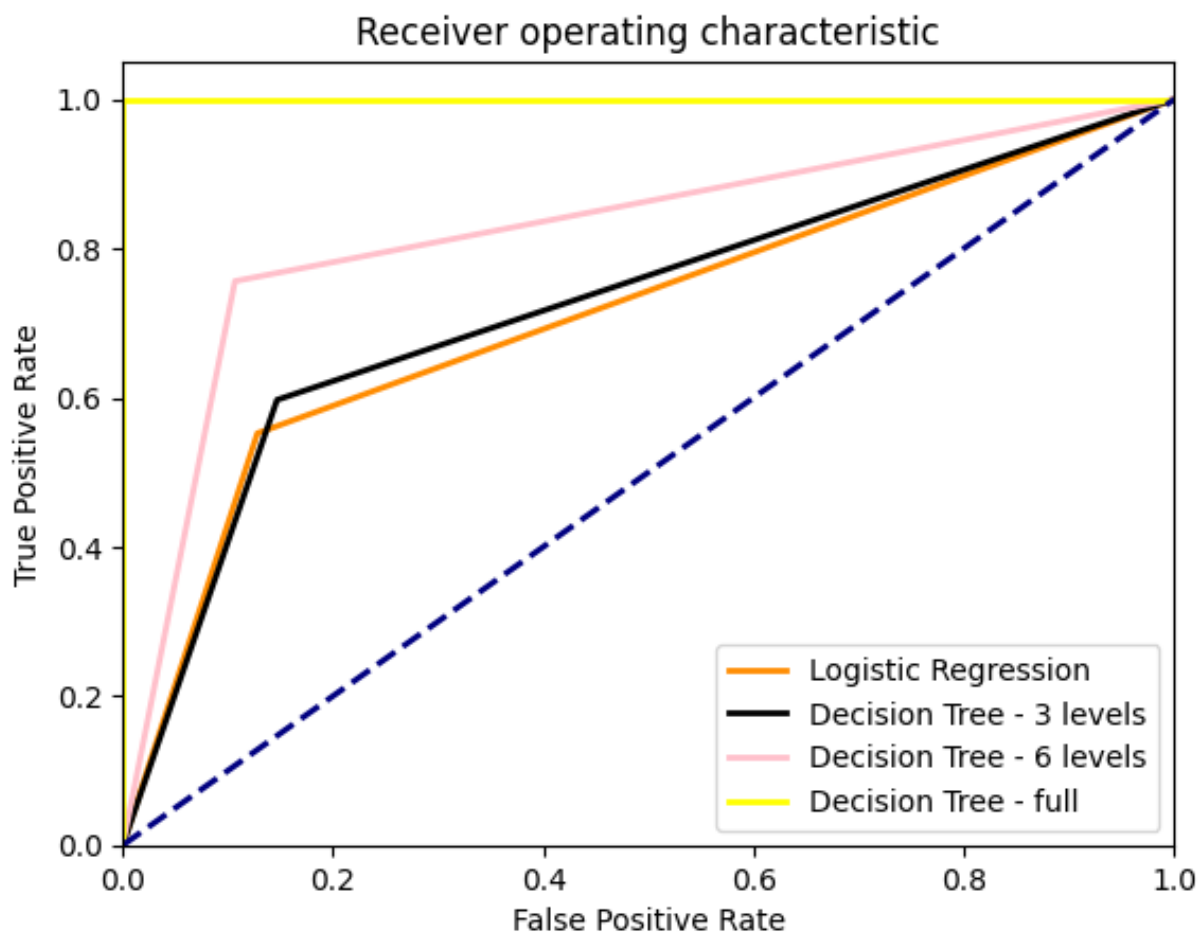


Overfitting

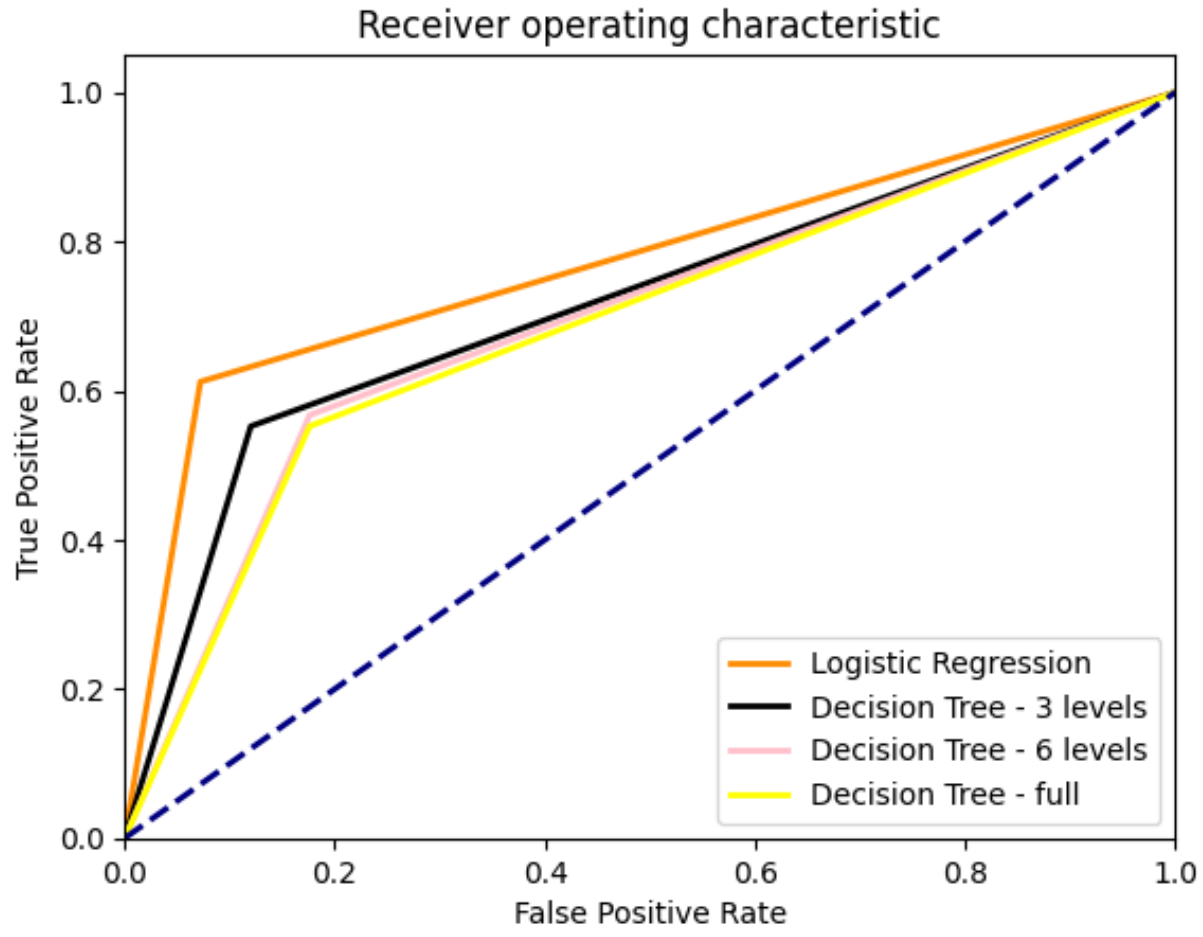


Validation?





Trainingsdata



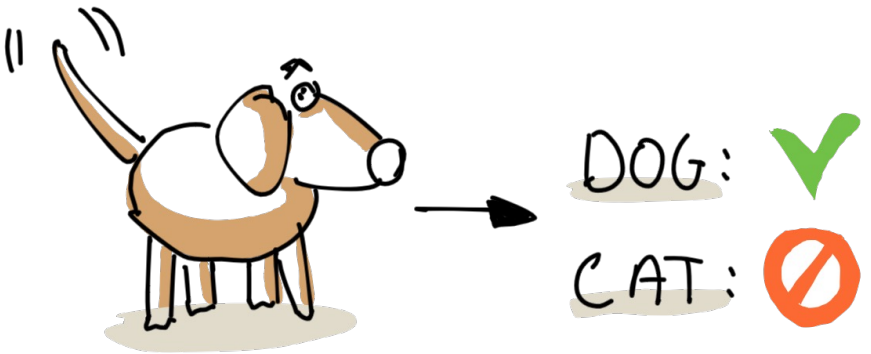
Testdata



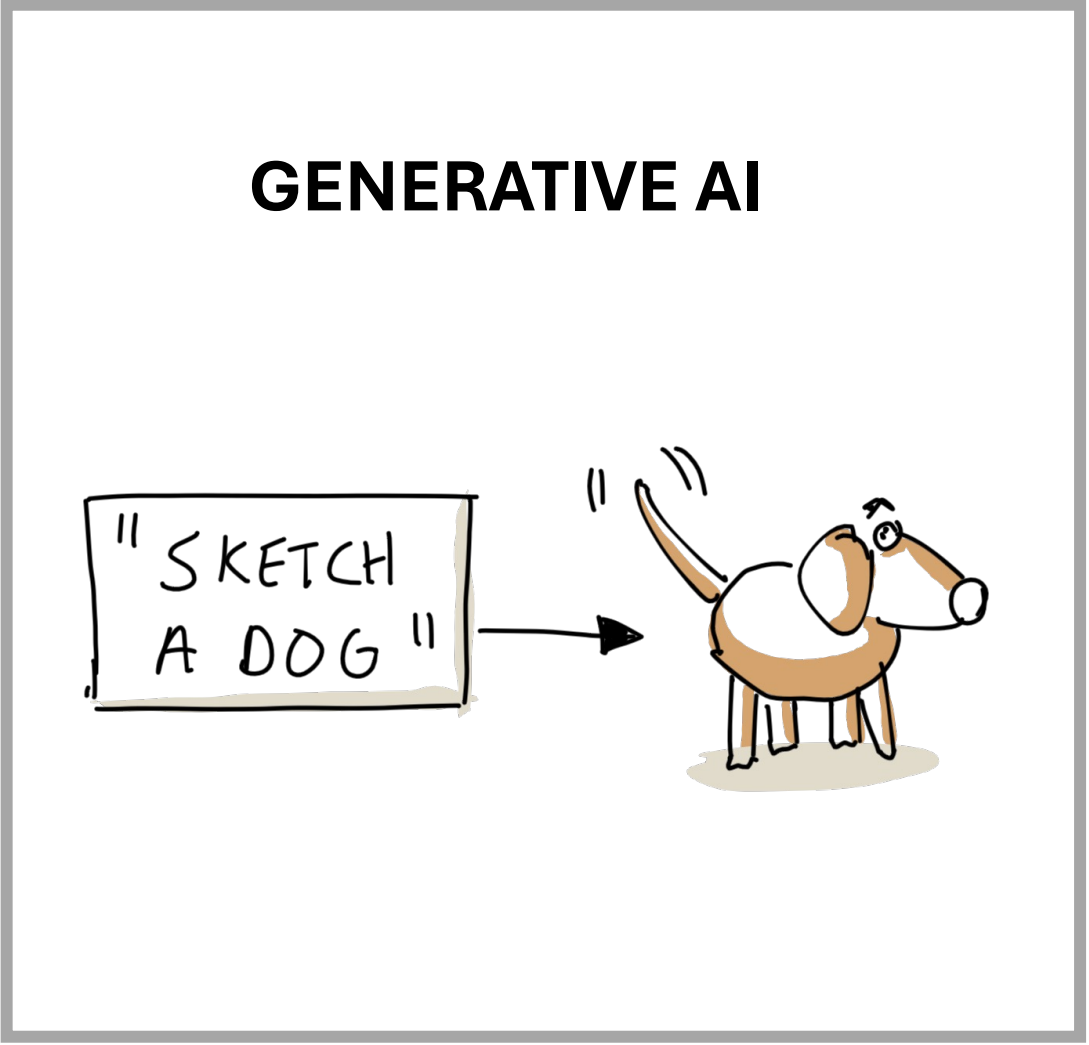
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DISCRIMINATIVE AI

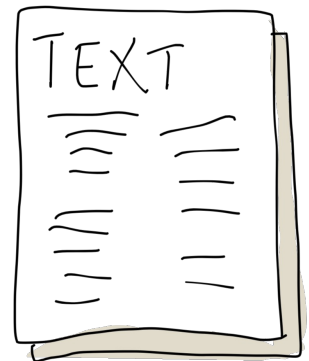


GENERATIVE AI



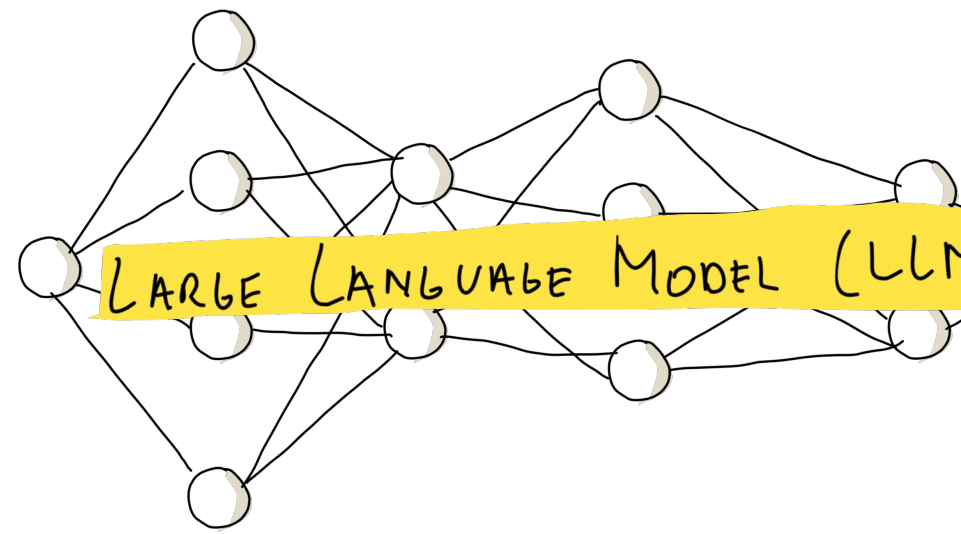


ANN



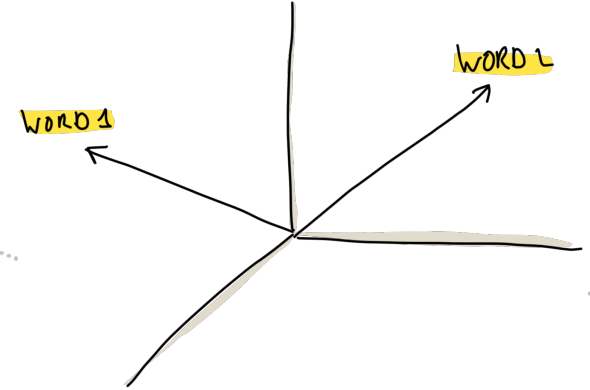
NUMBERS

$[1, 5, \dots]$



NUMBERS

$[8, 6, \dots]$



VECTOR SPACE



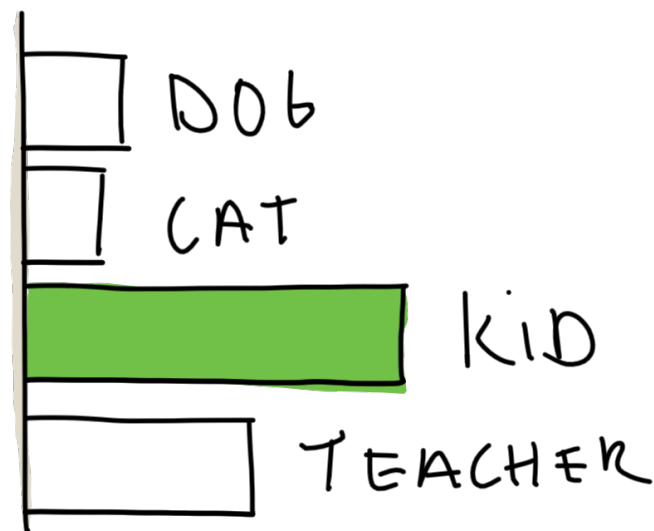
Predicting The Missing Word

THE ??
WENT TO THE
PLAYGROUND

SENTENCE



LLM

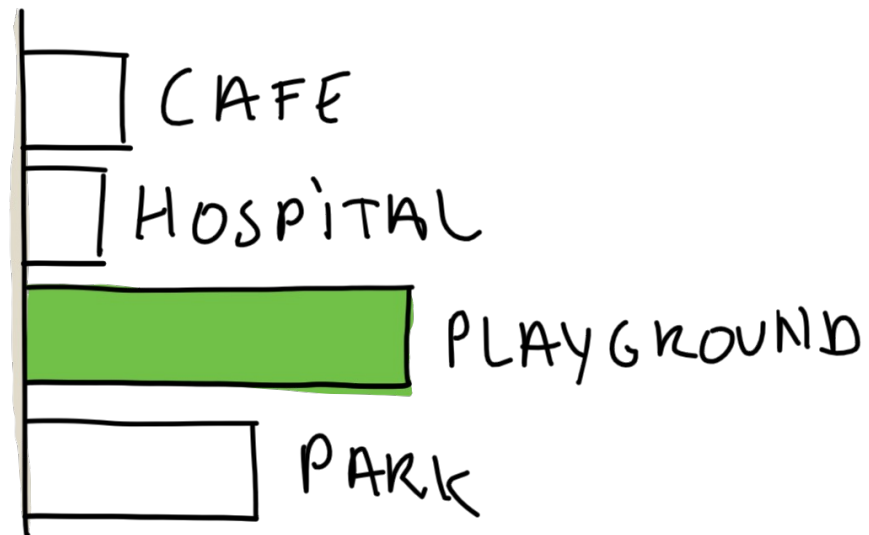
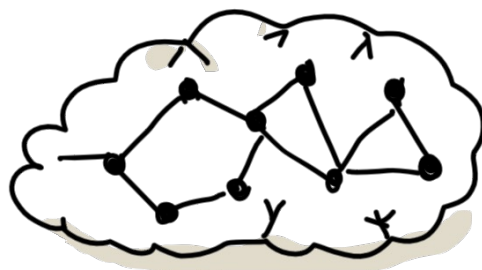


PREDICTED WORDS



Predicting The Next Word

THE KID
WENT TO THE



PREVIOUS WORDS

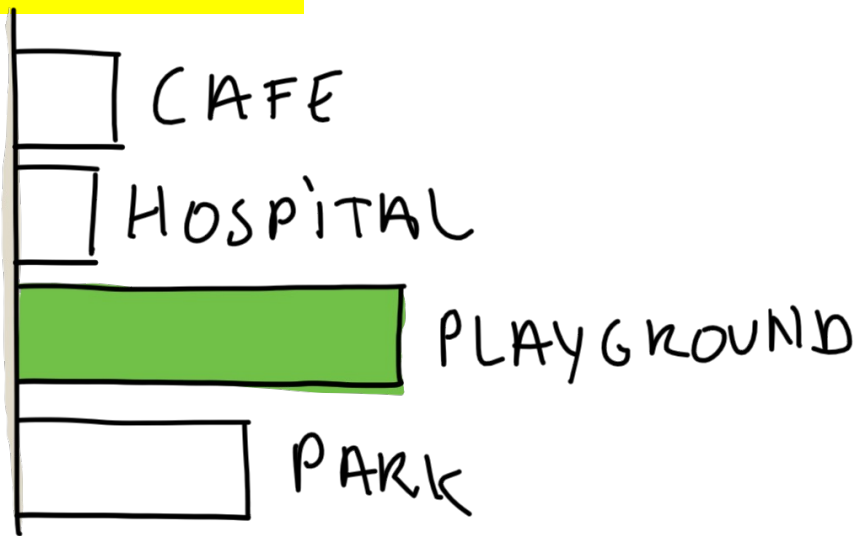
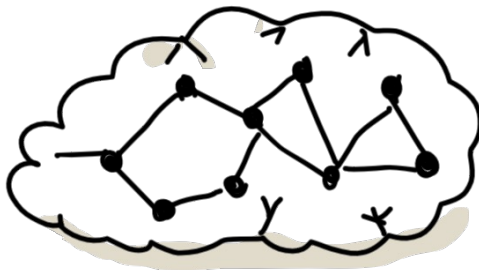
LLM

PREDICTED WORDS



Predicting The Next Word Sentence Paragraph ...

THE KID
WENT TO THE



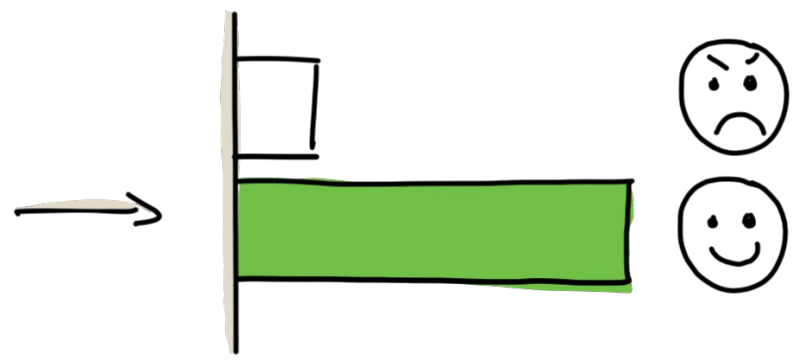
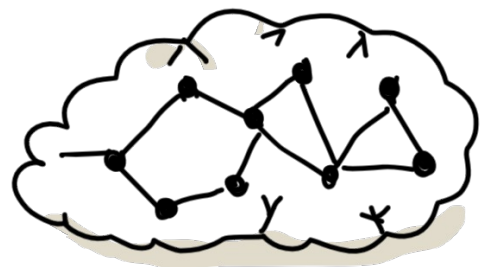
PREVIOUS WORDS

LLM

PREDICTED WORDS

Sentiment Analysis

MY EXPERIENCE
SO FAR HAS
BEEN FANTASTIC



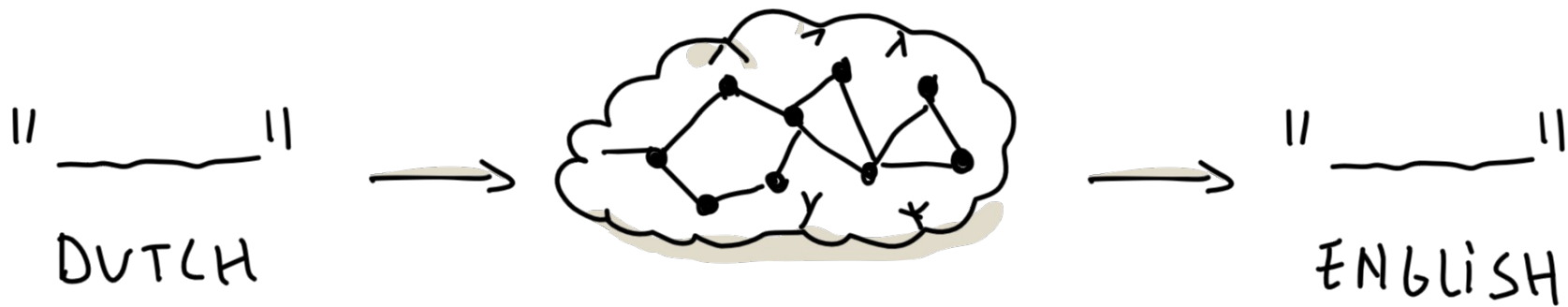
SENTENCE

LLM

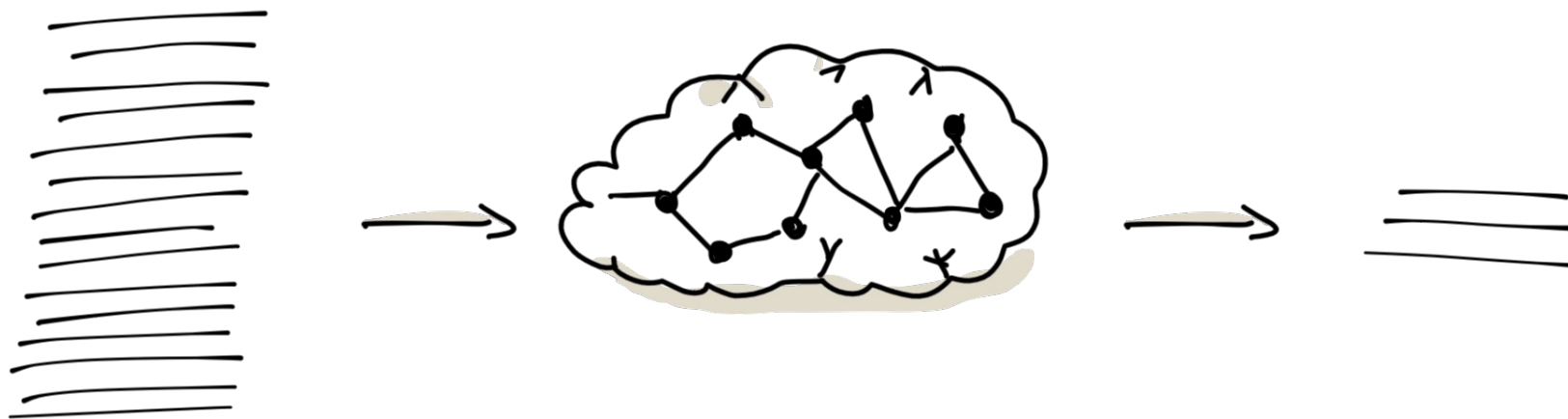
PREDICTED SENTIMENT



Translation



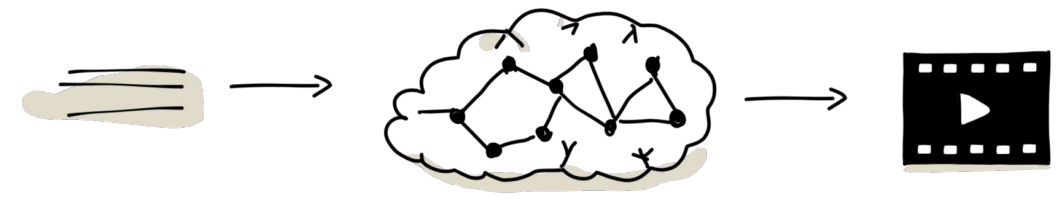
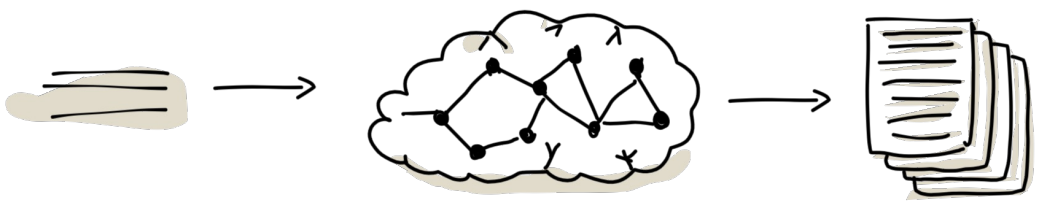
Summarization





Key Concept Behind the Scenes: **Vectorisation**

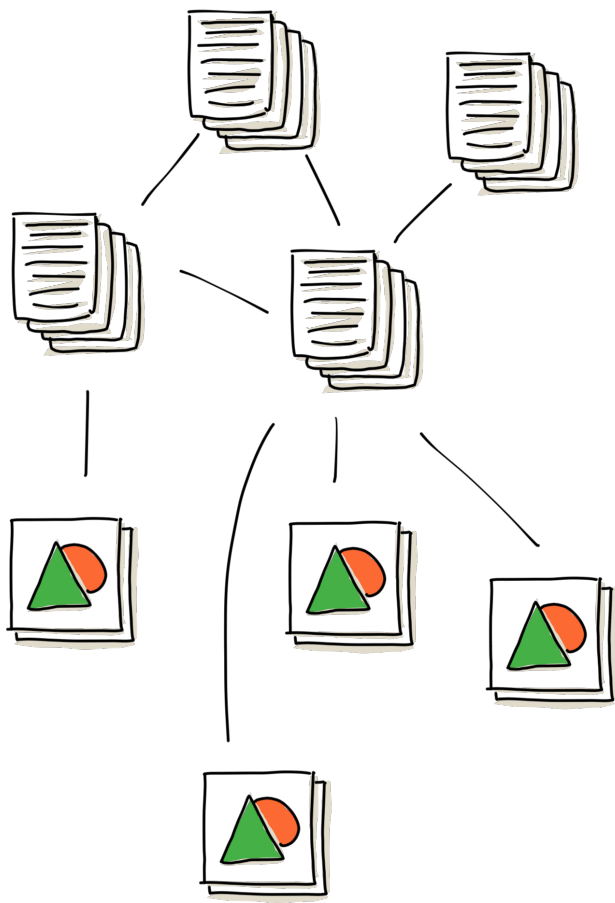




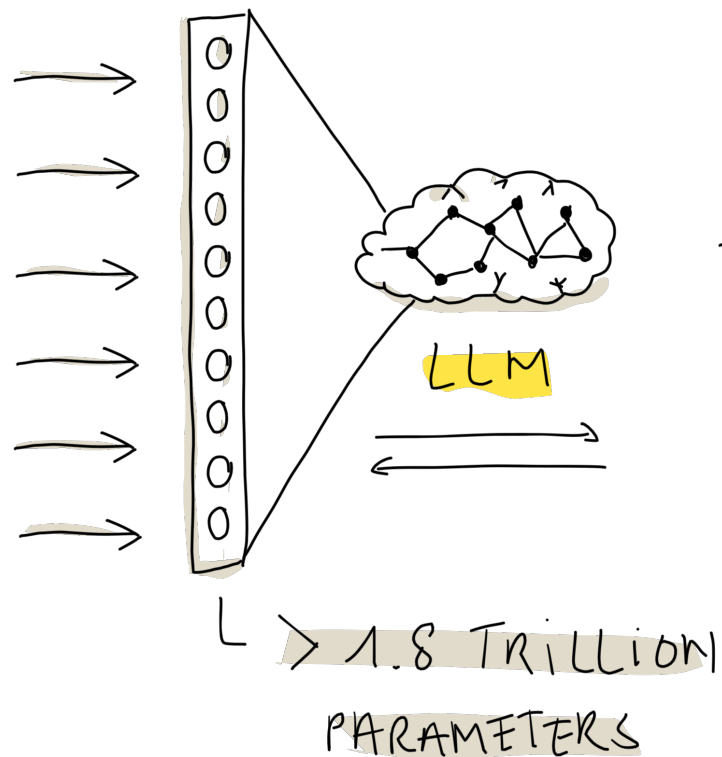


LLM Training?

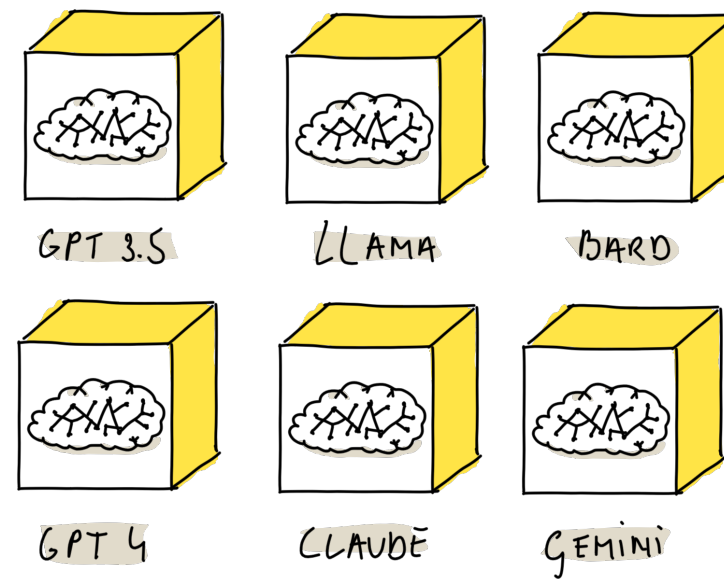
DATA



TRAINING



LLM MODEL





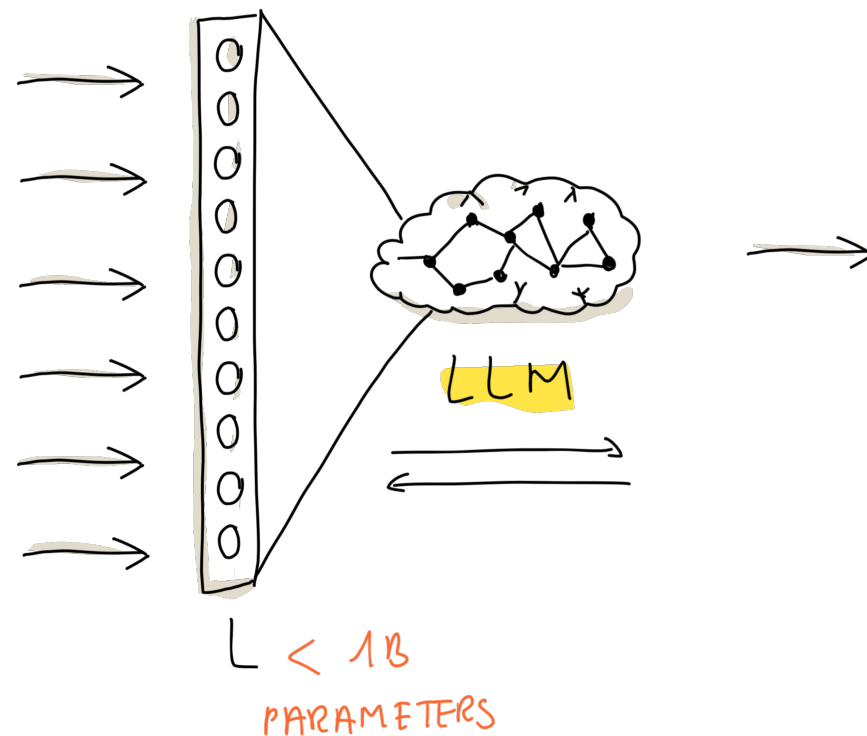
Training your own LLM (NanoGPT)

DATA

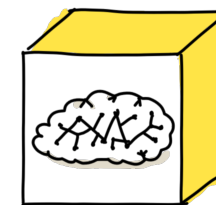


SHAKESPEARE
TEXT

TRAINING



LLM MODEL



NANO GPT-JM-0.1



Input Data: Shakespeare Text

First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
You are all resolved rather to die than to famish?

All:
Resolved. resolved.

First Citizen:
First, you know Caius Marcius is chief enemy to the people.

All:
We know't, we know't.

First Citizen:
Let us kill him, and we'll have corn at our own price.
Is't a verdict?

All:
No more talking on't; let it be done: away, away!

Second Citizen:
One word, good citizens.

First Citizen:
We are accounted poor citizens, the patricians good.
What authority surfeits on would relieve us: if they
would yield us but the superfluity, while it were
wholesome, we might guess they relieved us humanely;
but they think we are too dear: the leanness that
afflicts us, the object of our misery, is as an
inventory to particularise their abundance; our
sufferance is a gain to them Let us revenge this with
our pikes, ere we become rakes: for the gods know I
speak this in hunger for bread, not in thirst for revenge.

Second Citizen:
Would you proceed especially against Caius Marcius?

All:
Against him first: he's a very dog to the commonalty.

Second Citizen:
Consider you what services he has done for his country?

First Citizen:
Very well; and could be content to give him good
report fort, but that he pays himself with being proud.

Second Citizen:
Nay, but speak not maliciously.

First Citizen:
Well, sir, what answer made the belly?

MENENIUS:
Sir, I shall tell you. With a kind of smile,
Which ne'er came from the lungs, but even thus--
For, look you, I may make the belly smile
As well as speak--it tauntingly replied
To the discontented members, the mutinous parts
That envied his receipt; even so most fitly
As you malign our senators for that
They are not such as you.

First Citizen:
Your belly's answer? What!
The kingly-crowned head, the vigilant eye,
The counsellor heart, the arm our soldier,
Our steed the leg, the tongue our trumpeter.
With other muniments and petty helps
In this our fabric, if that they--

MENENIUS:
What then?
'Fore me, this fellow speaks! What then? what then?

First Citizen:
Should by the cormorant belly be restrain'd,
Who is the sink o' the body,--

MENENIUS:
Well, what then?

First Citizen:
The former agents, if they did complain,
What could the belly answer?

MENENIUS:
I will tell you
If you'll bestow a small--of what you have little--
Patience awhile, you'll hear the belly's answer.

First Citizen:
Ye're long about it.

BRUTUS:
Fame, at the which he aims,
In whom already he's well graced, can not
Better be held nor more attain'd than by
A place below the first: for what miscarries
Shall be the general's fault, though he perform
To the utmost of a man, and giddy censure
Will then cry out of Marcius 'O if he
Had borne the business!'

SICINIUS:
Besides, if things go well,
Opinion that so sticks on Marcius shall
Of his demerits rob Cominius.

BRUTUS:
Come:
Half all Cominius' honours are to Marcius.
Though Marcius earned them not, and all his faults
To Marcius shall be honours, though indeed
In aught he merit not.

SICINIUS:
Let's hence, and hear
How the dispatch is made, and in what fashion,
More than his singularity, he goes
Upon this present action.

BRUTUS:
Let's along.

First Senator:
So, your opinion is, Aufidius,
That they of Rome are entered in our counsels
And know how we proceed.

AUFIDIUS:
Is it not yours?
What ever have been thought on in this state,
That could be brought to bodily act ere Rome
Had circumvention? 'Tis not four days gone
Since I heard thence; these are the words: I think
I have the letter here; yes, here it is.
'They have press'd a power, but it is not known
Whether for east or west: the dearth is great;
The people mutinous; and it is rumour'd,
Cominius, Marcius your old enemy,
Who is of Rome worse hated than of you,
And Titus Lartius, a most valiant Roman,
These three lead on this preparation
Whither 'tis bent: most likely 'tis for you:
Consider of it.'



Training: After 200 iterations

```
Overriding: out_dir = out-shakespeare-char  
Overriding: device = mps  
number of parameters: 0.80M  
Loading meta from data/shakespeare_char/meta.pkl...
```

```
Upastat don to che withe be upornie hid.  
  
HUke CORCHe tage to to she ear or cund to of havr  
The kncoous of in prey wall, the ous,  
Thas inds beke aflh-hices it of woul see awile,  
Is le strel with shem of to the live;  
I mor ther toon he muse and's of son yeret f,  
She gien your, to your and to heur is lat rukin  
ike your mad, with thour my thoun yougme,  
ear thou that frown the ling, have all won im to,  
The man wee dap to hin and strreatan thous lath's wert yere,  
Non to of son, Kame torr ear it to f  
-----
```



Training: After 3000 iterations

```
Overriding: out_dir = out-shakespeare-char  
number of parameters: 10.65M  
Loading meta from data/shakespeare_char/meta.pkl...
```

DUKE VINCENTIO:

```
I prove thy hands as a villain,  
And nor I am nod nurse! I was be so with  
him. A prison Padua abroad is the poor and soon a cursed buckle,  
The flesh of it were not so longer have bless, and what you shall be  
Swear that. What having is him the lask of our blood  
Private and late, that e'er earling strange compassion  
Her blood, where he had would be her comfort of the ward  
with form her man.
```

First Servingman:

```
Marry, sir, where's the people, which you were he of the bosoms.
```

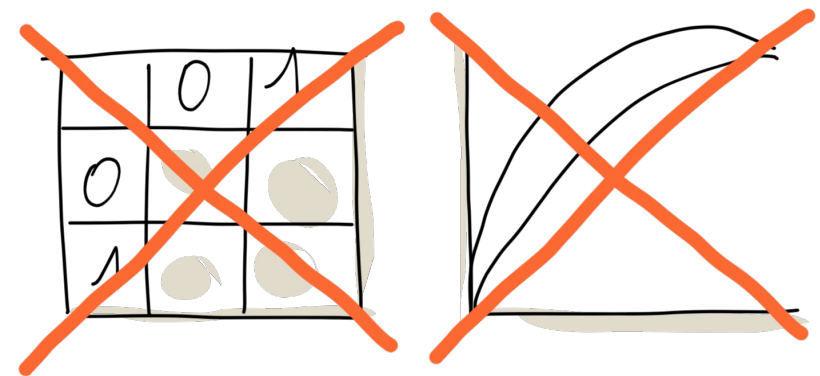
Third Se

First Servingman:

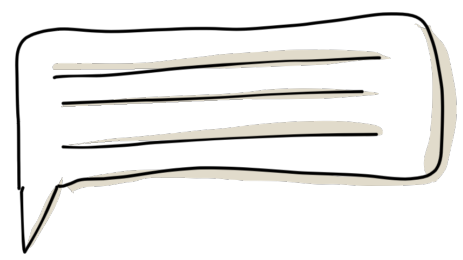
```
When we have done second it been,  
And the benefit of the people to the care  
And hate rescret her for her is true.
```

Training LLMs is only for the **Big Tech firms**

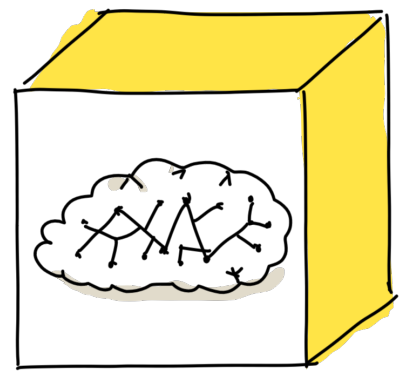




WHAT'S THE QUALITY?



PROMPT



LLM



OUTPUT

LLM Failures

What was the average price of my health insurance over the last three years?

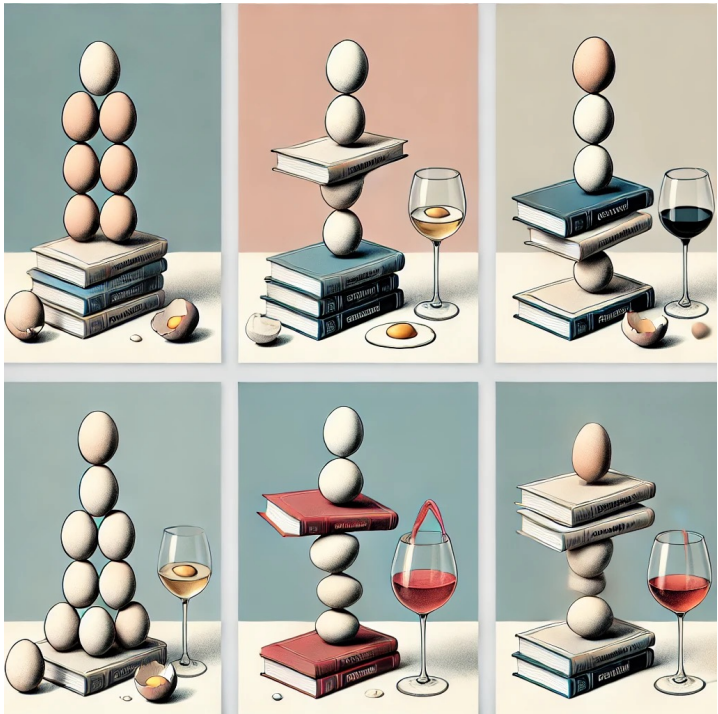


Could you provide the annual prices of your health insurance over the last three years? Then I can calculate the average for you.



Outdated / No Data

How would you construct the highest possible tower with only three eggs, a book and a glass of wine?



Hallucination

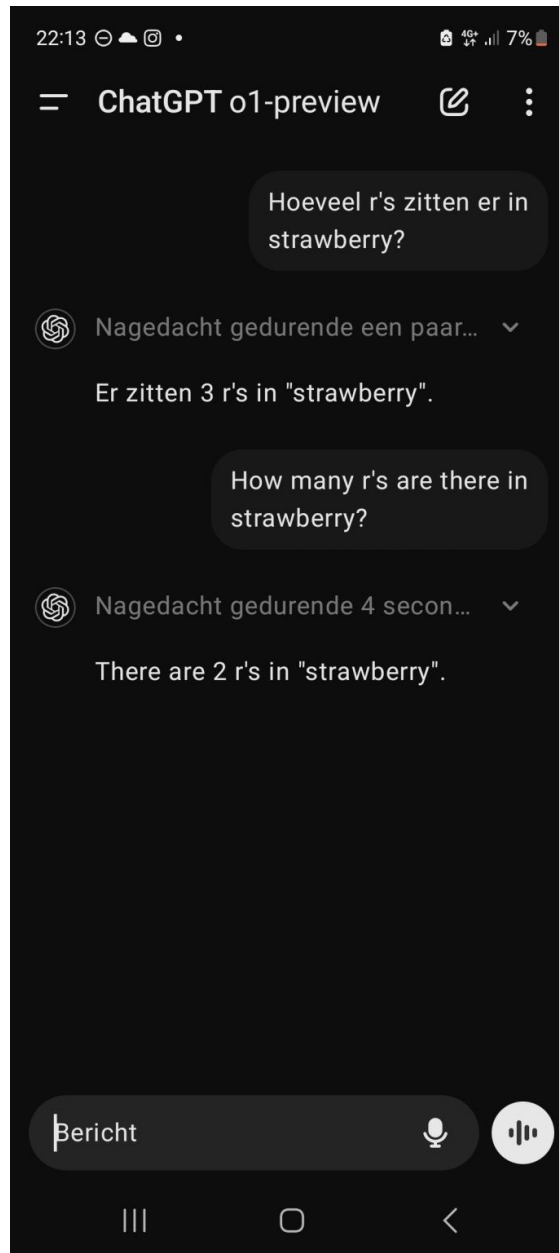


Can you detect dogs and muffins in this image?



- | Row 1: | Row 2: | Row 3: |
|----------------------|----------------------|----------------------|
| 1. Dog | 1. Dog | 1. Dog |
| 2. Dog | 2. Muffin | 2. Muffin |
| 3. Muffin | 3. Dog | 3. Dog |
| 4. Muffin | 4. Dog | 4. Dog |
| 5. Dog | 5. Dog | 5. Muffin |
| 6. Muffin | 6. Dog | 6. Muffin |
| 7. Dog | 7. Muffin | 7. Dog |
| 8. Muffin | 8. Muffin | 8. Muffin |

Hallucination



Hallucination

LLM Failures

What was the average price of my health insurance over the last three years?

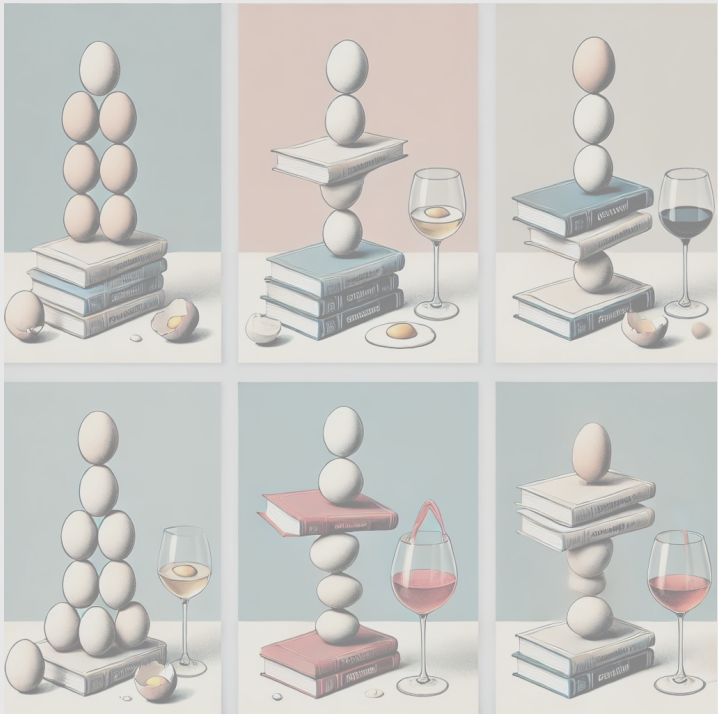


Could you provide the annual prices of your health insurance over the last three years? Then I can calculate the average for you.



Outdated / No Data

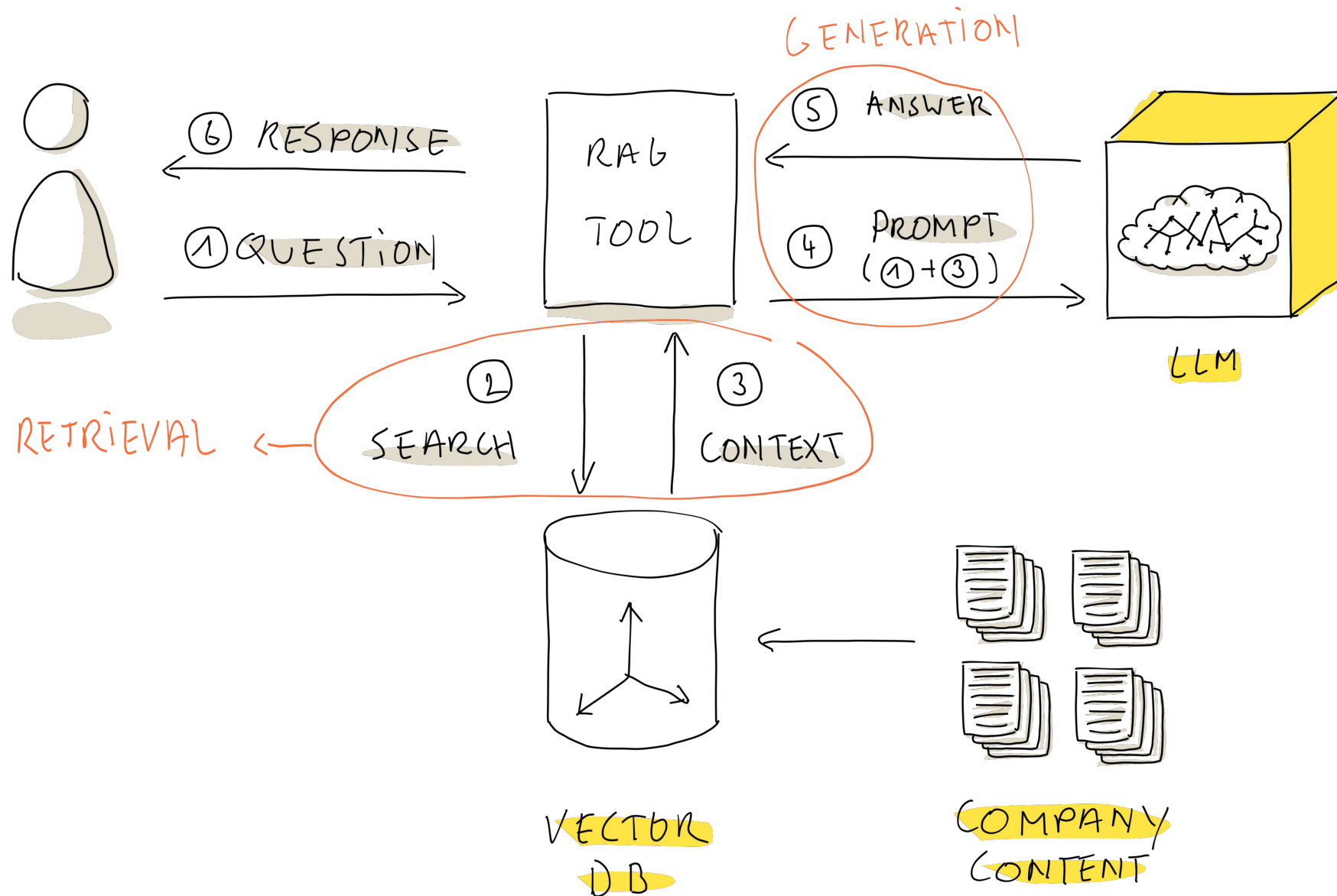
How would you construct the highest possible tower with only three eggs, a book and a glass of wine?



Hallucination



Retrieval Augmented Generation (RAG)



LLM Failures

What was the average price of my health insurance over the last three years?



Could you provide the annual prices of your health insurance over the last three years? Then I can calculate the average for you.



Outdated / No Data

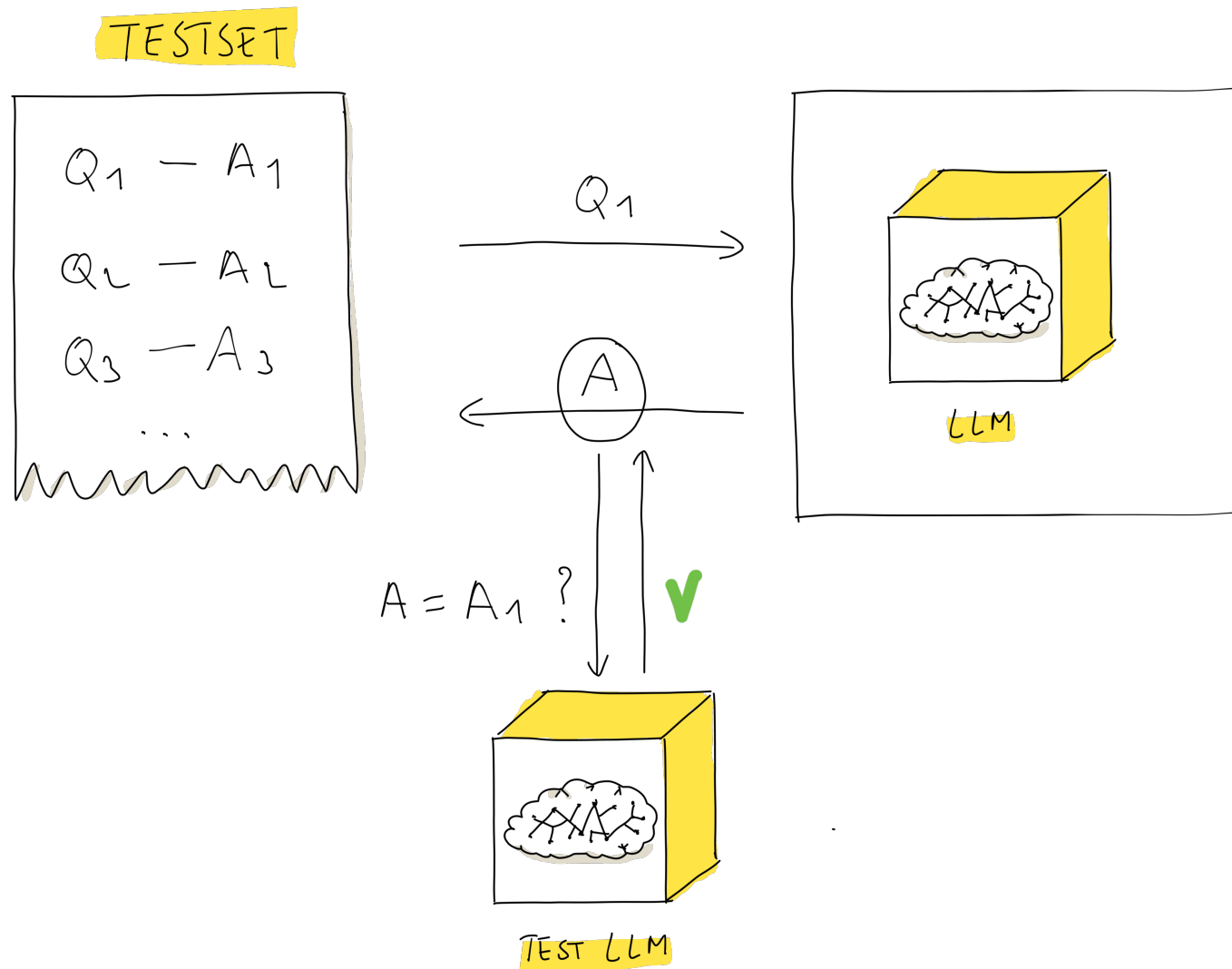
How would you construct the highest possible tower with only three eggs, a book and a glass of wine?



Hallucination



Testset-Based LLM Evaluation





More advanced : RAGAS

generation

faithfulness

how factually accurate is the generated answer

answer relevancy

how relevant is the generated answer to the question

retrieval

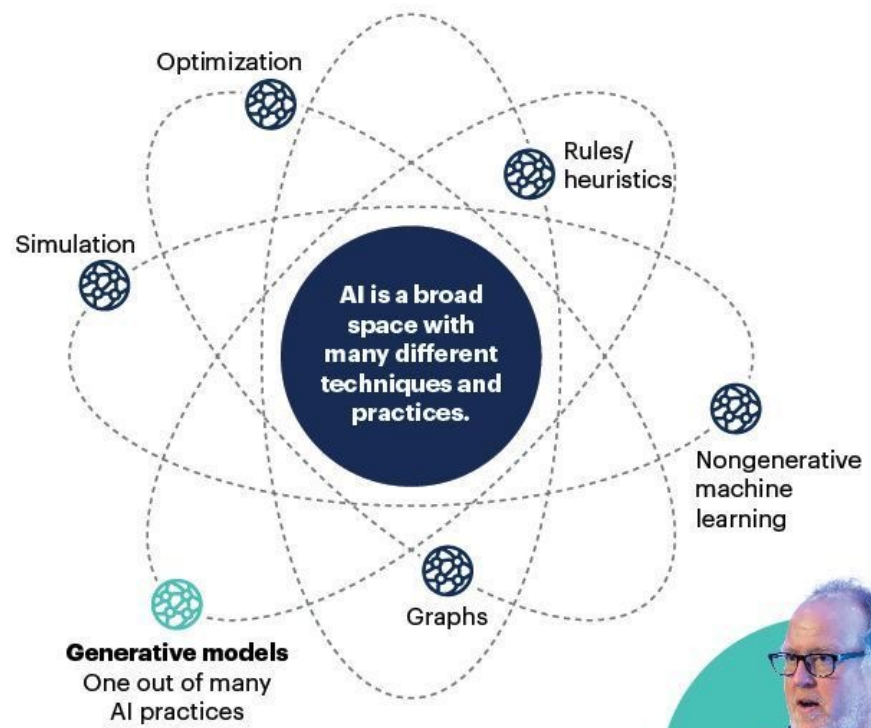
context precision

the signal to noise ratio of retrieved context

context recall

can it retrieve all the relevant information required to answer the question

	question	contexts	answer	ground_truths	context_precision	context_recall
0	What is the approach used in BLIP-2 for vision...	[BLIP-2: Bootstrapping Language-Image Pre-trai...	BLIP-2 uses a two-stage approach for vision-la...	[The approach used in BLIP-2 for vision-langua...	0.222222	1.0
1	How do frozen image encoders and large languag...	[BLIP-2: Bootstrapping Language-Image Pre-trai...	Frozen image encoders and large language model...	[Frozen image encoders and large language mode...	0.333333	1.0
2	What experimental design is used to study scal...	[On these tasks, we find that human participan...	The experimental design used to study scalable...	[The experimental design used to study scalabl...	0.250000	1.0
3	What are the two aspects of language use that ...	[Understanding the Capabilities, Limitations, ...	The two aspects of language use that are consi...	[The two aspects of language use that are cons...	0.000000	0.0
4	How does combining pretrained language models'...	[Large Language Models Can Self-Improve Large ...	Combining pretrained language models' in-conte...	[Combining pretrained language models' in-cont...	0.000000	1.0



“Generative AI, which is super dominant as the leading trend here, is being misapplied. There is an idea that generative AI can do things that classical AI is actually better at doing. This dissonance happens, and you ask, ‘Well, why aren’t I getting the results that I expected?’ **It’s probably because you’re applying GenAI in the wrong way.**”

Chris Howard
Gartner Global Chief of Research

Deloitte.

**Trust in
Generative AI**
A Belgian Perspective

October 2024

JUST RELEASED



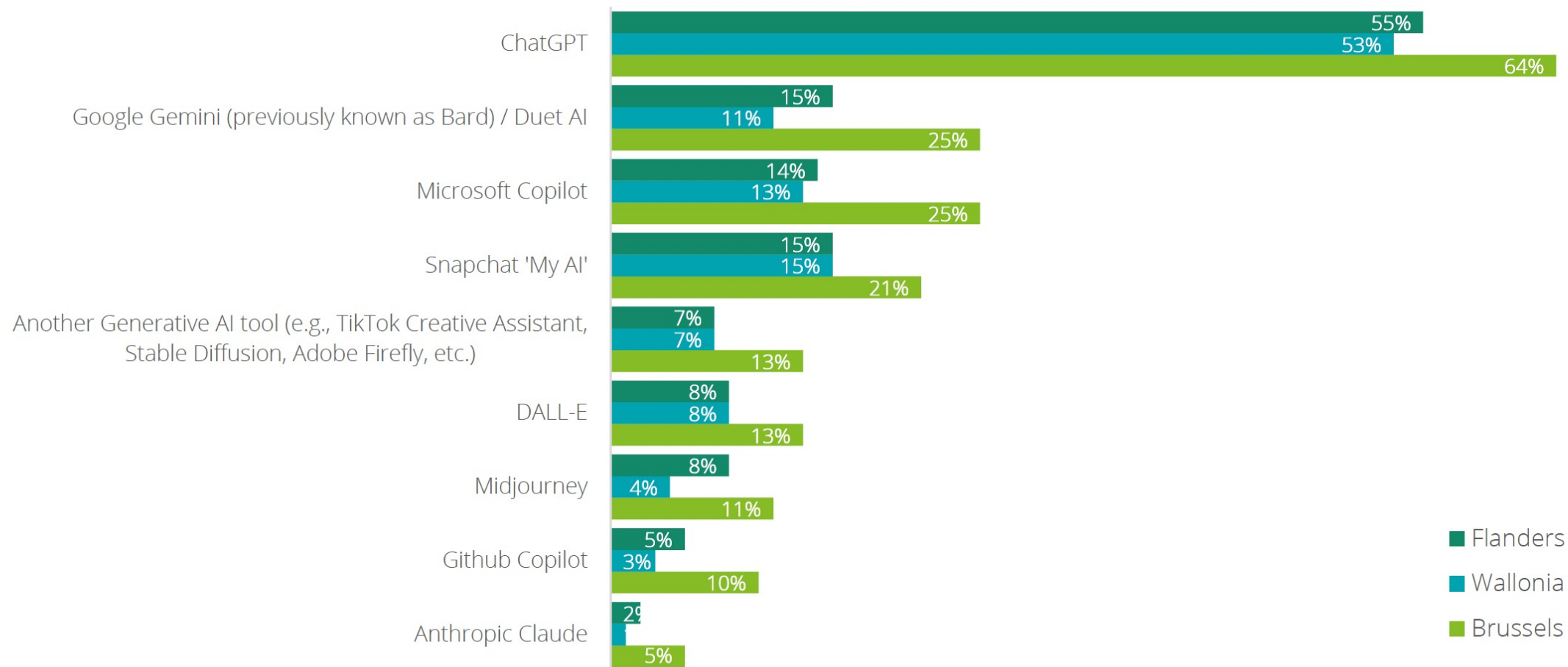


Awareness of Generative AI tools per region in Belgium

Among respondents aware of Gen AI tools, more than 5 out of 10 report being familiar with Chat GPT

Base: All adults aged 16-75 in Belgium (N = 2714)

Q1. Which, if any, of the following generative AI tools are you aware of?



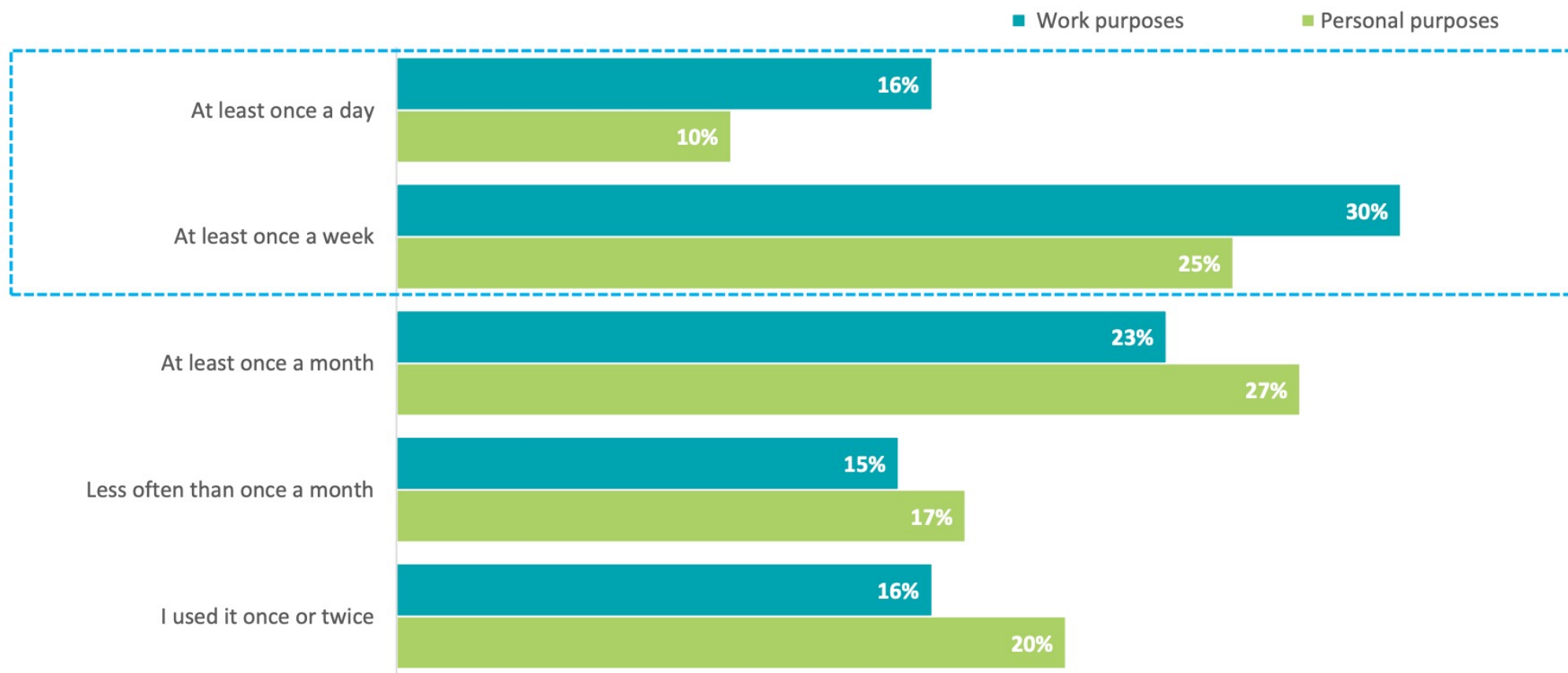


Frequency of Generative AI use in Belgium

Of those who use Gen AI, more than one-third of Belgians use Gen AI at least once a week for both personal (36%) and work purposes (46%)

Base: Aware and use Gen AI (N=912 - Personal purposes | N=884 - Work purposes)

Q4. You mentioned that you have used Generative AI tools. Which of the following describes how often you typically use it for...?



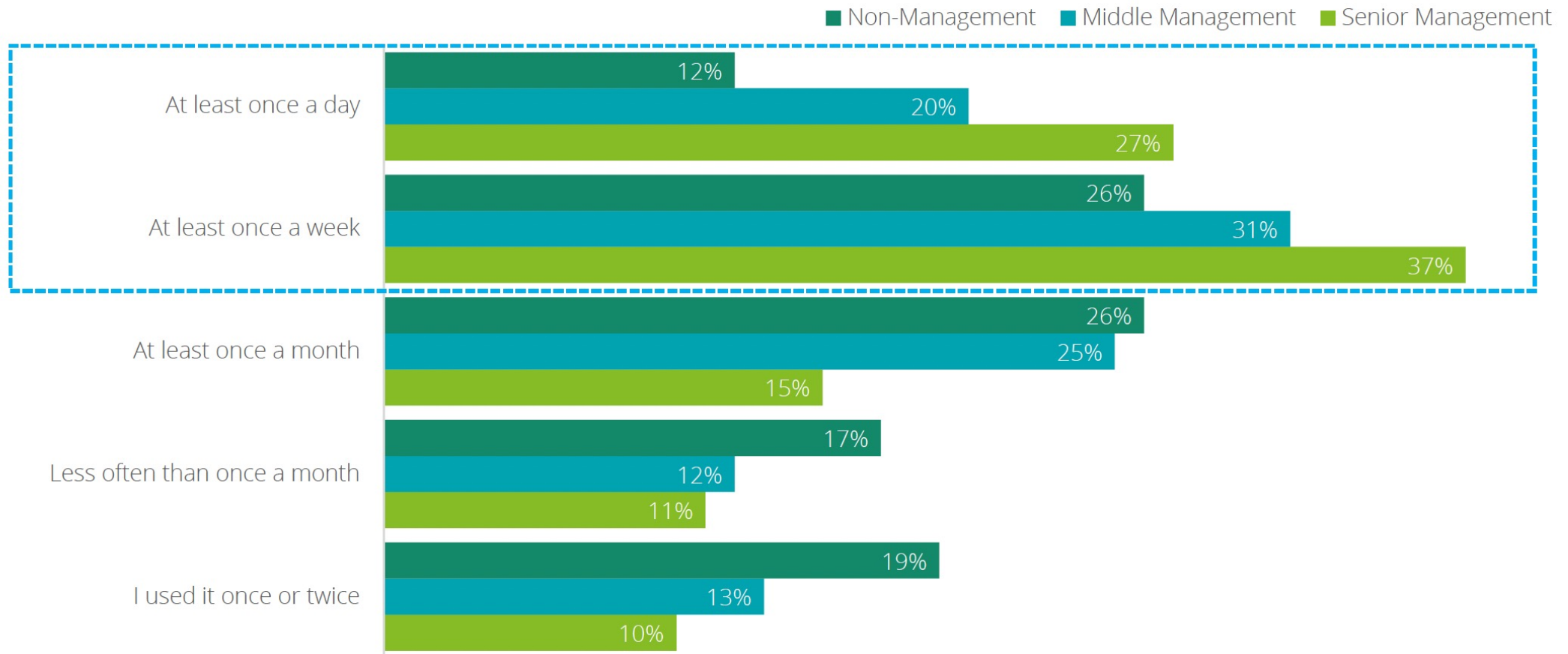


Frequency of Generative AI use per job level

Of Belgians who use Gen AI for work purposes, it appears that those in Senior Management use Gen AI considerably more often (64% at least weekly) compared to Middle Management (51% at least weekly) and Non-Management levels (39% at least weekly)

Base: All who have used a Generative AI tool for work purposes (N=884)

Q4. You mentioned that you have used Generative AI tools. Which of the following describes how often you typically use it for...work purposes?

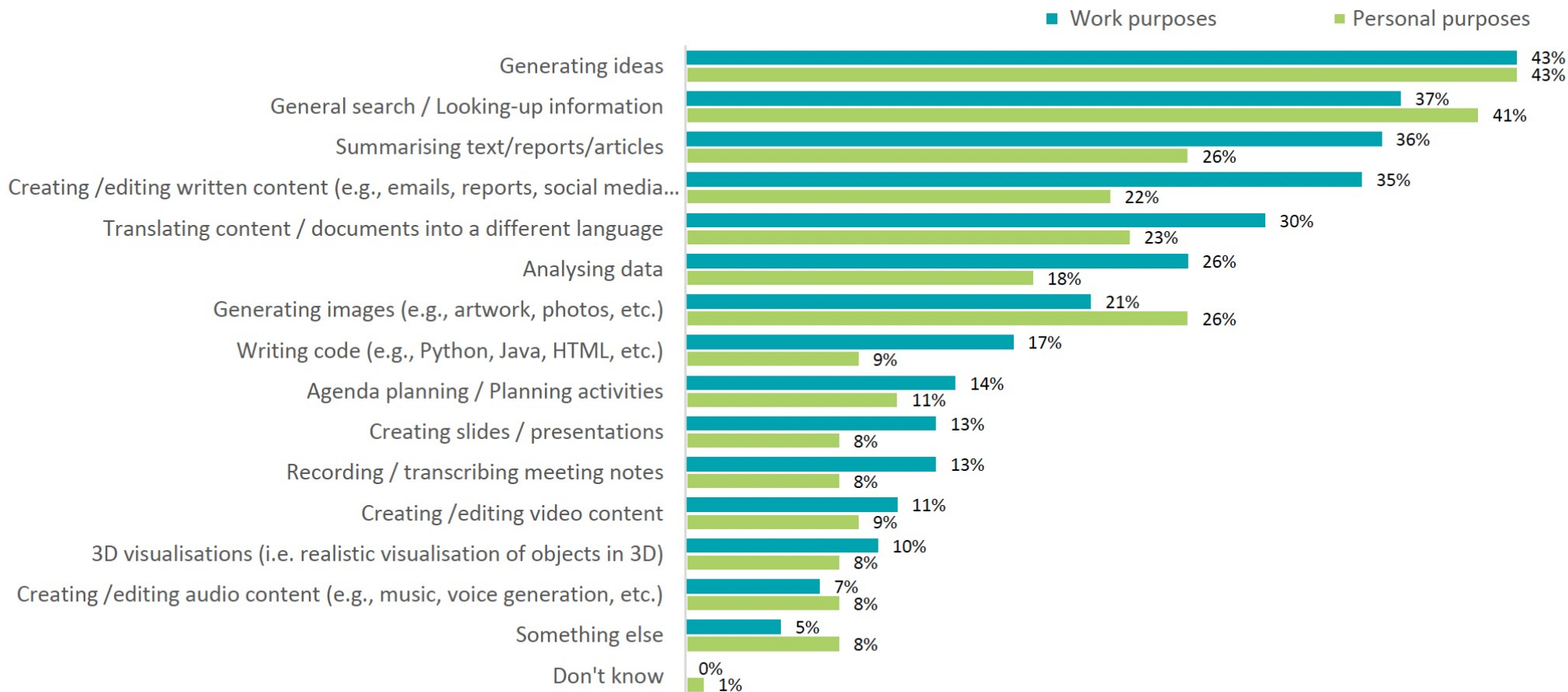




Use cases of Generative AI

Generating ideas is the primary use of GenAI for both work & personal activities (43%), while general searches or looking up information dominate personal use (41%)

Base: Aware and use Gen AI (N=912 - Personal purposes | N=884 - Work purposes)
Q5. For which of the following tasks do you typically use Generative AI tool(s)?



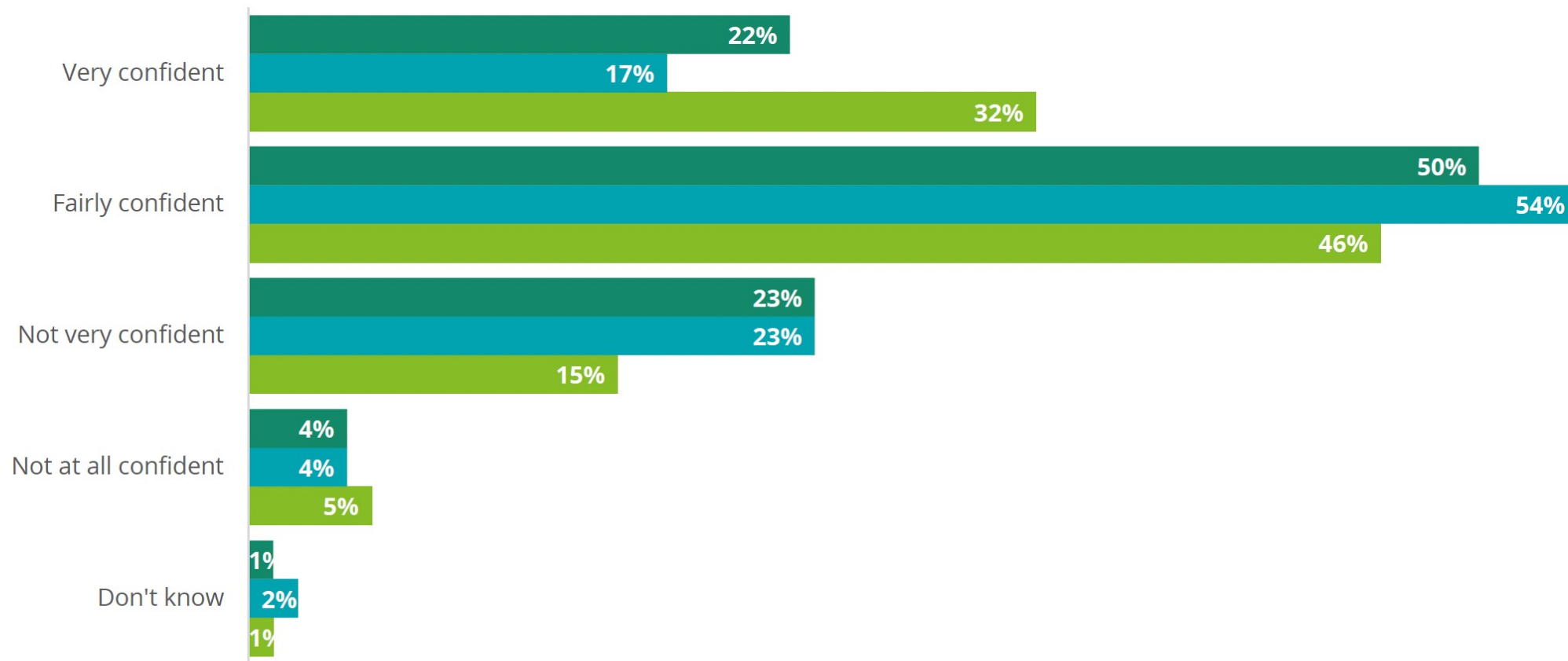


Confidence in using Generative AI

3 out of 4 Belgian respondents report being very or fairly confident in using Gen AI tools. Research highlighted though a significant confidence from men (78%), compared to women (63%)

Base: All who have used a Generative AI tool (N = 1406)

Q6. On balance, how confident, or not, are you in using Generative AI tool(s)?



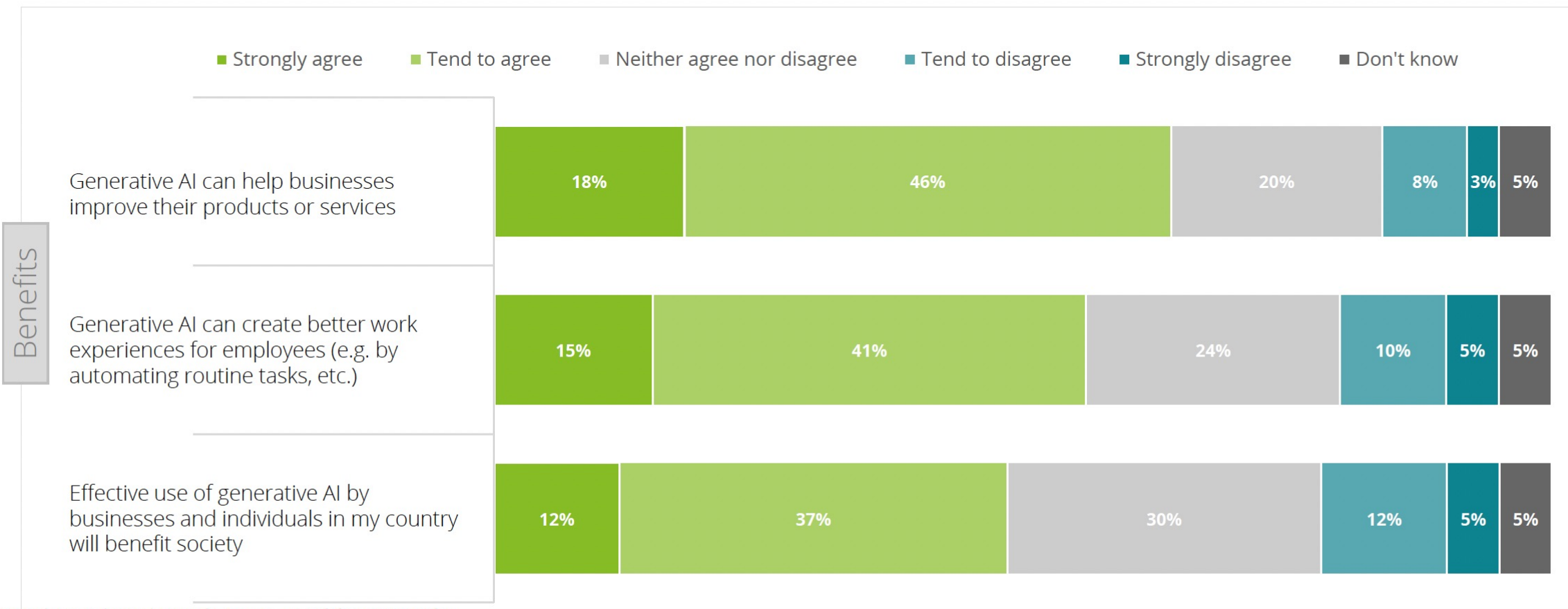


Potential & Trust in Generative AI

64% of Belgians aware of generative AI tools, say that generative AI can help businesses improve their products or services, while 56% say it can create better working experiences for employees. Population from both Brussels, Flanders & Wallonia equally agree with the above statements.

Base: Aware and use Gen AI (N = 1970)

Q7. To what extent do you agree, or disagree, with each of the following statements?



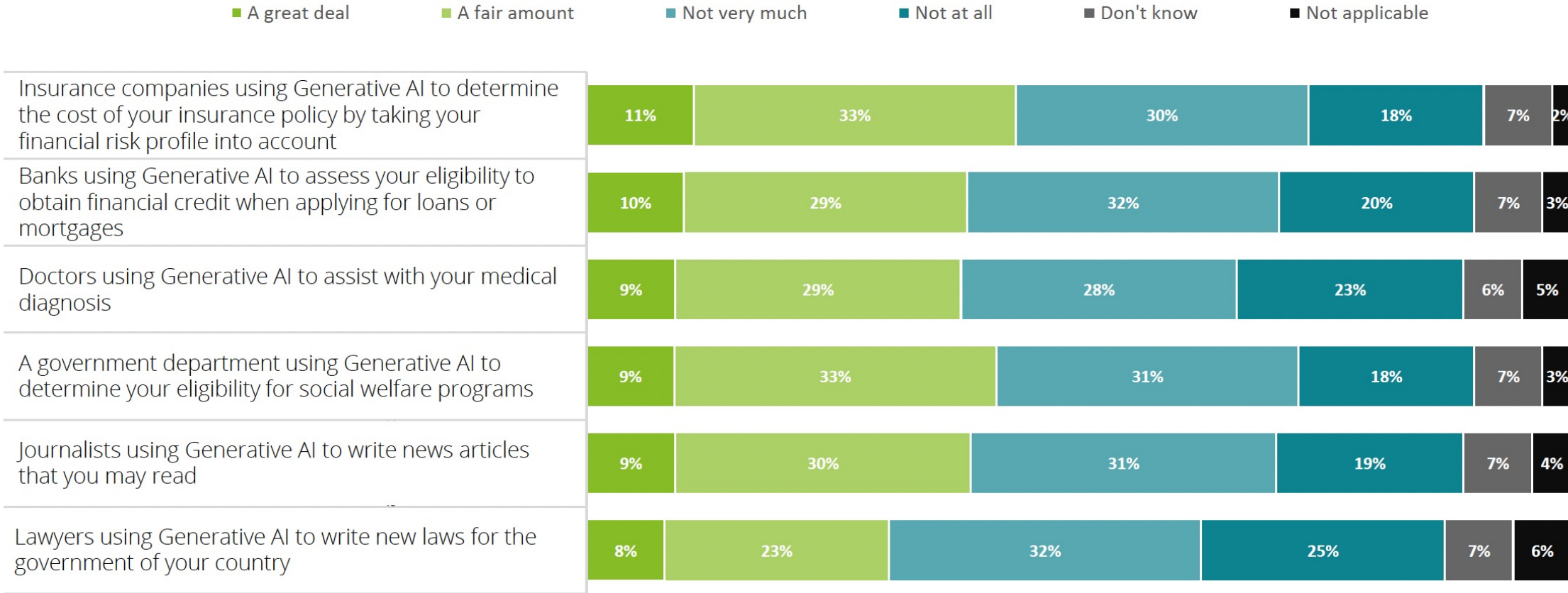


Trust in Generative AI for specific business use scenarios

Generative AI Belgian users trust its results for business (*higher-risk*) use cases to a lower extent than personal use cases

Base: Aware and use Gen AI (N = 1970)

Q10b. Now thinking about how businesses and organisations could potentially use Generative AI. To what extent, if at all, would you personally trust the results produced by Generative AI in each of the following scenarios?



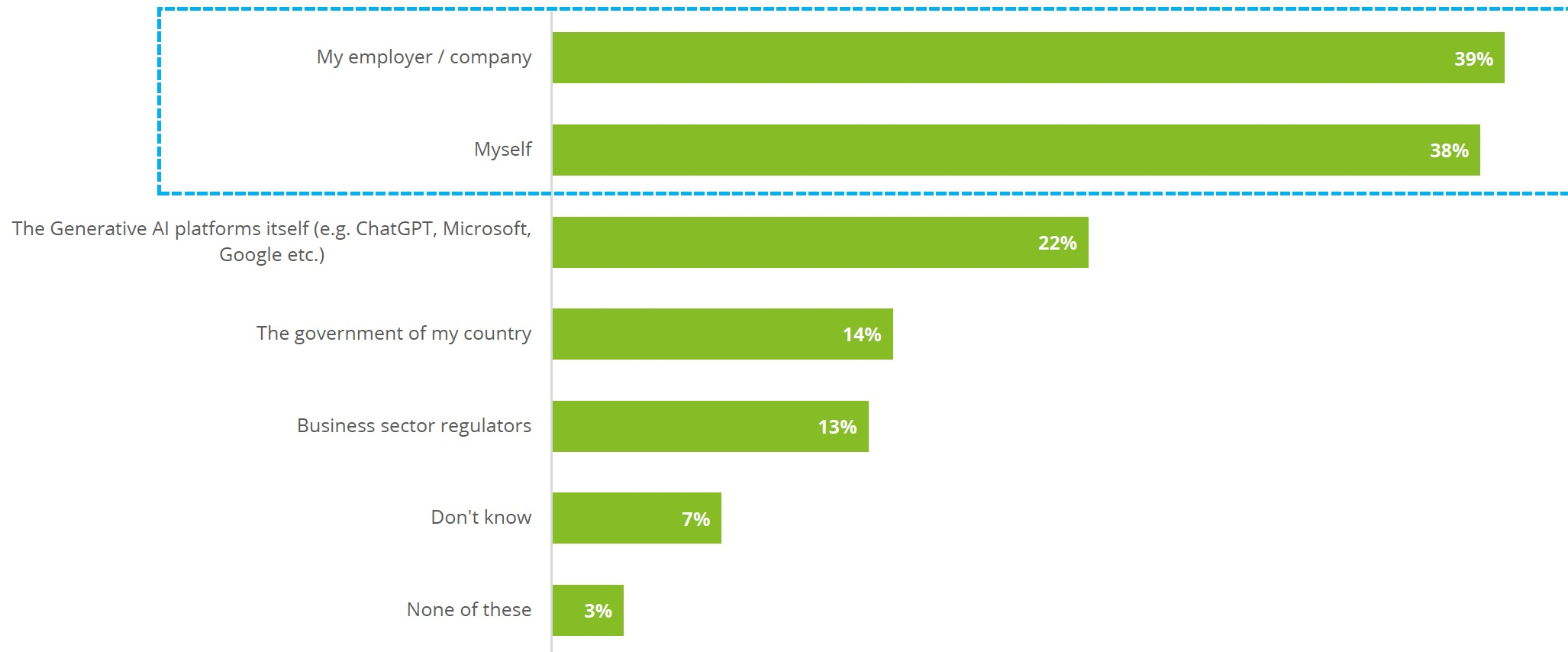


Responsibility for developing Generative AI skills

Above one-third of Gen AI users in Belgium view upskilling as a shared duty, with 39% seeing it as a personal responsibility and 38% as the employer's responsibility. Significant amount of Belgians also shares the view that it is up to the Gen AI platforms itself.

Base: Aware and use Gen AI (N = 791)

Q22. Who, if anyone, do you think should be responsible for developing your skills to use Generative AI tools for work purposes in the following scenarios?

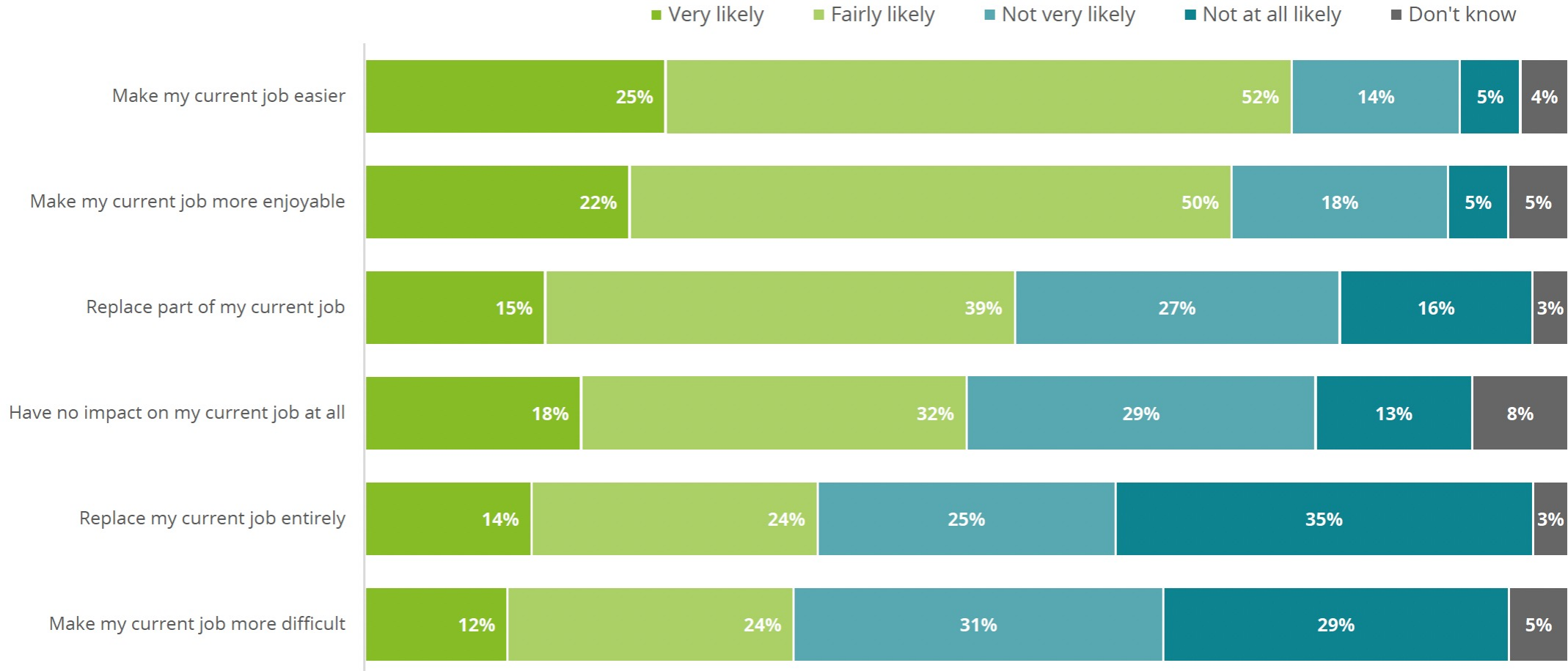




Impact of Generative AI in next 2 years

Most Gen AI users believe that in the next two years, Gen AI will make their jobs easier (77%) and more enjoyable (72%), and may automate some tasks (53%), but a majority do not believe it will replace their jobs entirely (60%) or increase job difficulty (60%)

Base: Aware and use Gen AI (N = 791)
Q21. In the next 2 years, how likely, or not, do you think it is that Generative AI will...?





Organisational policy around Generative AI

40% of Belgian employees report that their company actively encourages the use of generative AI for work purposes

Base: All employed who have used a Generative AI tool for work purposes (N = 791)
Q16. Thinking about the use of Gen AI tools for work purposes, which, if any, of the following statements applies to your company about the use of Generative AI tools for work purposes?

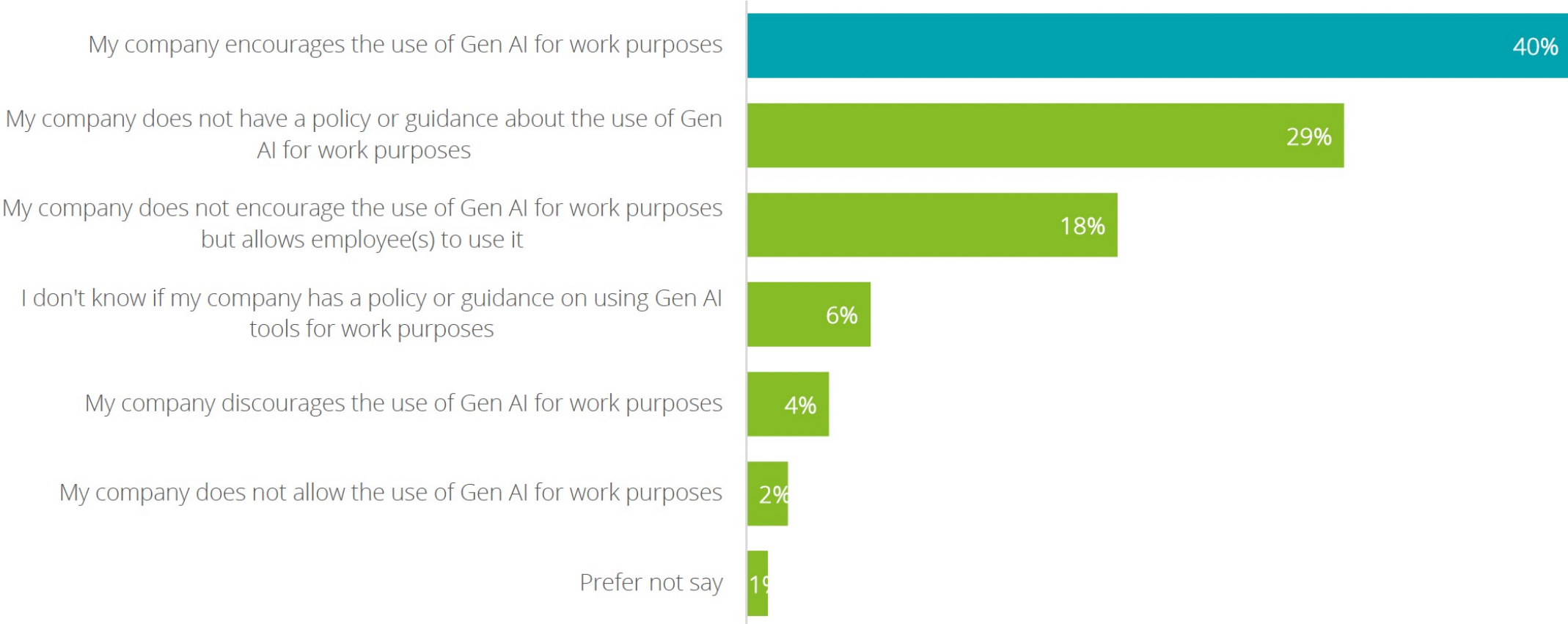




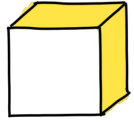
Table of Contents – Day 1

- Introduction
- History of AI
- AI Capabilities
- AI Models
- Quality of AI Models
- Generative AI
- **Use Cases**
- AI Breakthroughs and Trends
- Agenda for Day 2

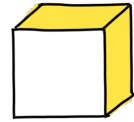
↑ FLOW

AI CAPABILITIES

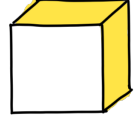
FORECASTING



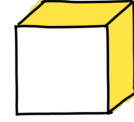
RECOMMENDATION



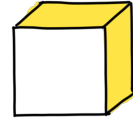
CLUSTERING



CLASSIFICATION

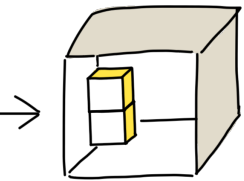


GENERATION

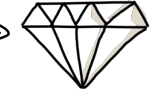


"USE"

USE CASE



AI PRODUCT



VALUE

DEPLOY / SERVE

ALGORITHMS



ARIMA



RANDOM FOREST



XG BOOST



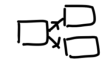
HIERARCH. CLUSTERING



DEEP LEARNING



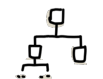
LLM



RECOMMENDATION ENGINE



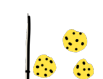
LIN. REGRESSION



DECISION TREES



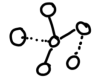
LOG. REGRESSION



K-MEANS



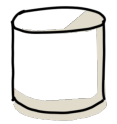
ANN



ASSOCIATION RULES

PREPROCESSING

DATA



DATABASES



DOCUMENTS



IMAGES



VIDEO



SOUND



CHURN DETECTION



EMAIL TRIAGE



FLOATING WASTE



FRAUD DETECTION



RETAIL



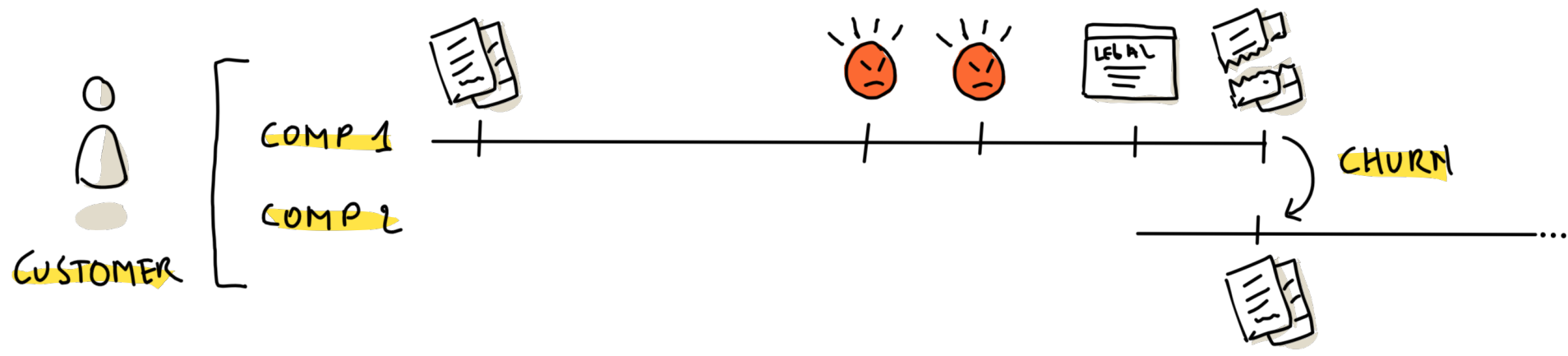
Production Planning

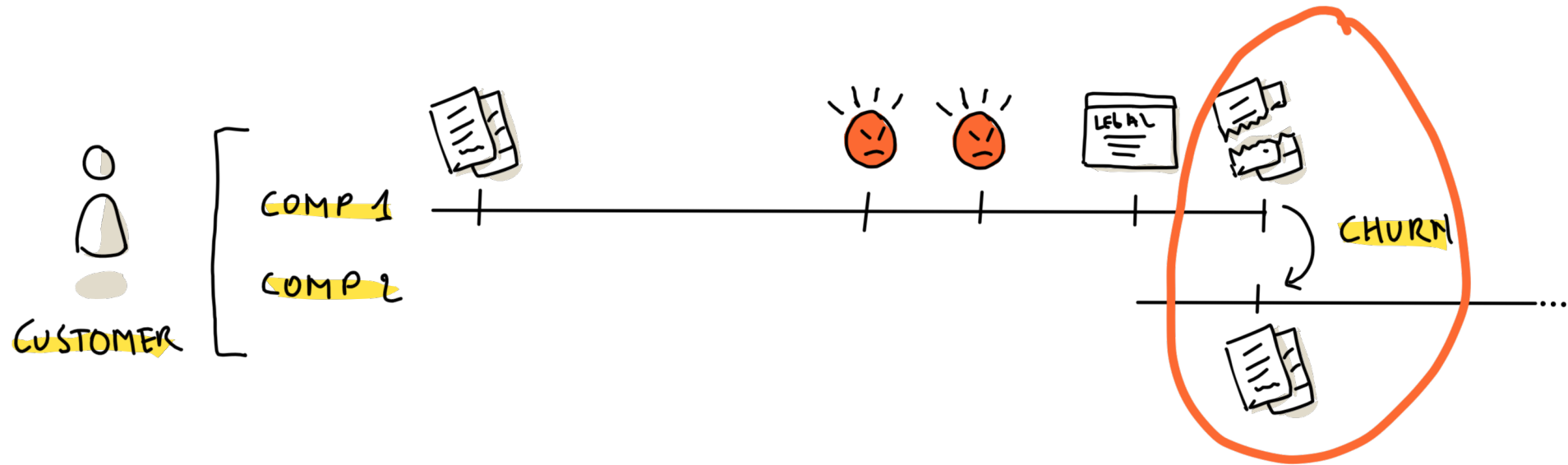


Stimulate Innovation

The image features two identical glass fishbowls on a light-colored surface. The bowl on the left is filled with water and has a goldfish jumping out, creating a large splash of water droplets and bubbles. The bowl on the right is empty and contains no water or fish. A blue horizontal bar is positioned at the bottom of the image, containing the text 'CHURN DETECTION' in white, bold, uppercase letters.

CHURN DETECTION

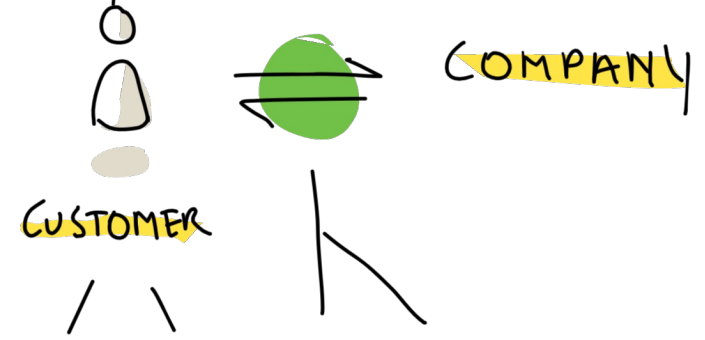




**Q: Can we detect Churn
before the customer effectively churns?**

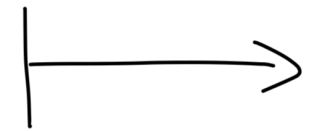


AUTO DISCOUNT



				CHURN
-	-	-	-	1
-	-	-	-	0
-	-	-	-	1
-	-	-	-	1
-	-	-	-	0
-	-	-	-	1

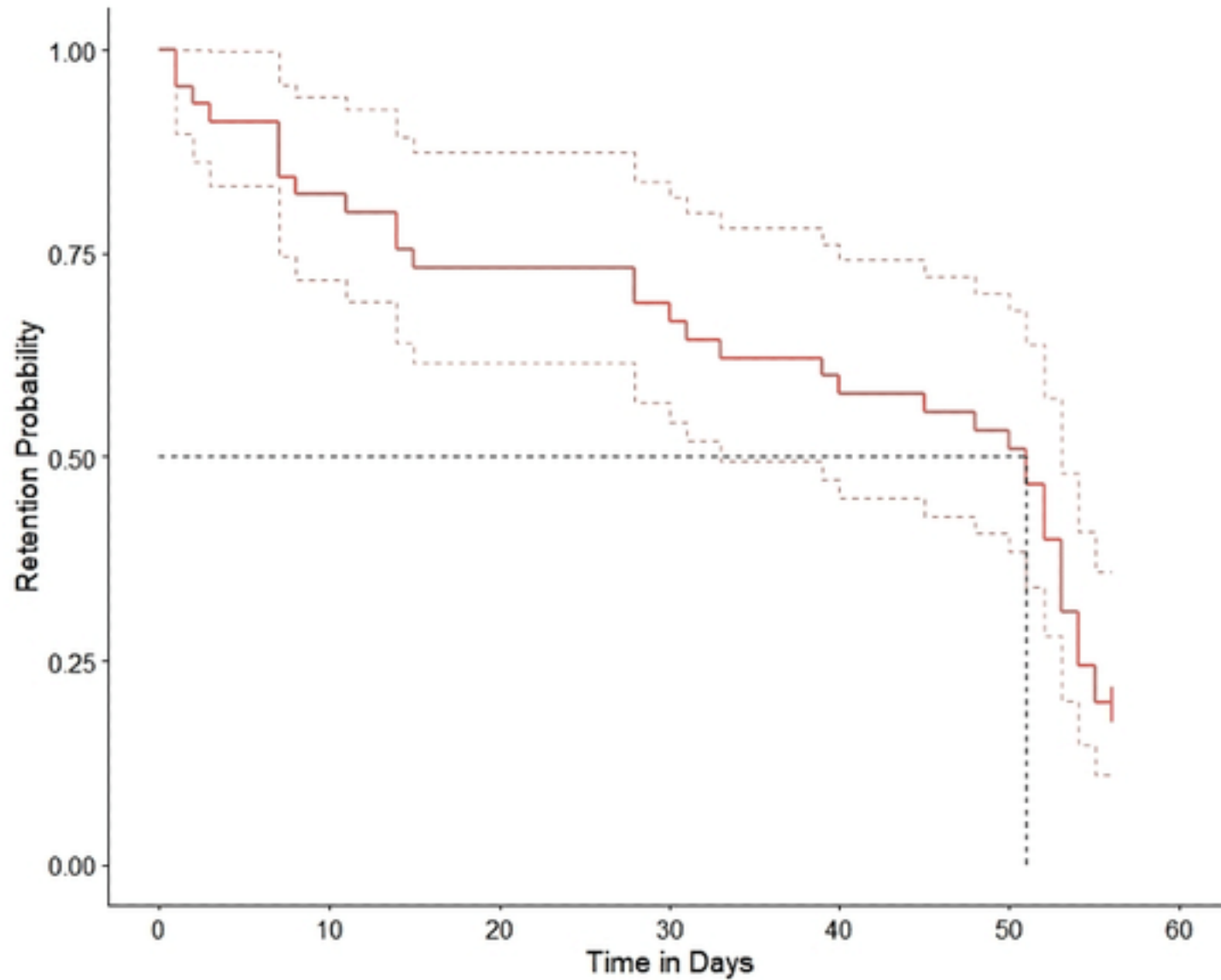
$$F(\text{pink oval}, \text{green oval}) = \% \text{ CHANGE TO CHURN}$$



$> 80\% \ \& \ \text{VALUE} > X$

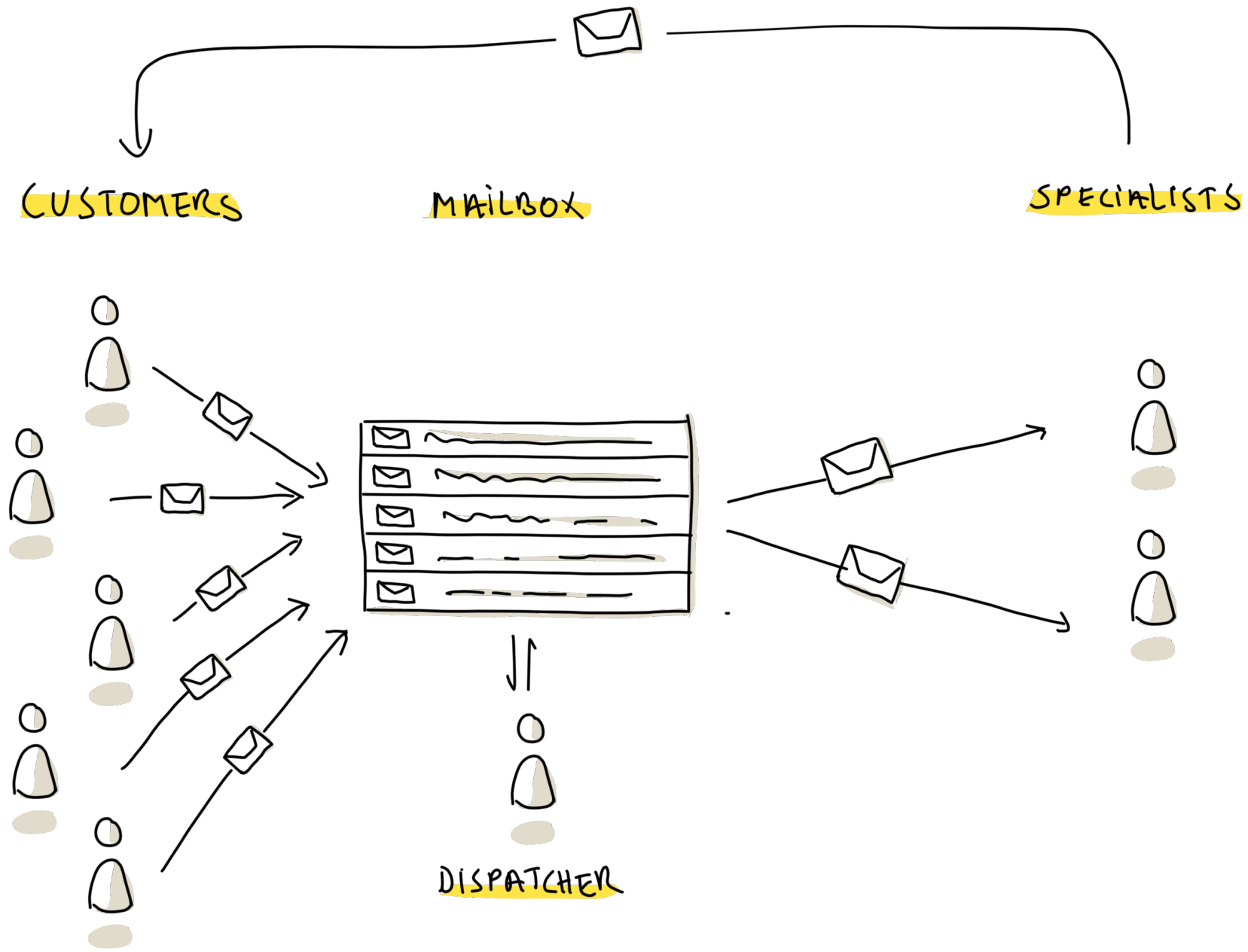


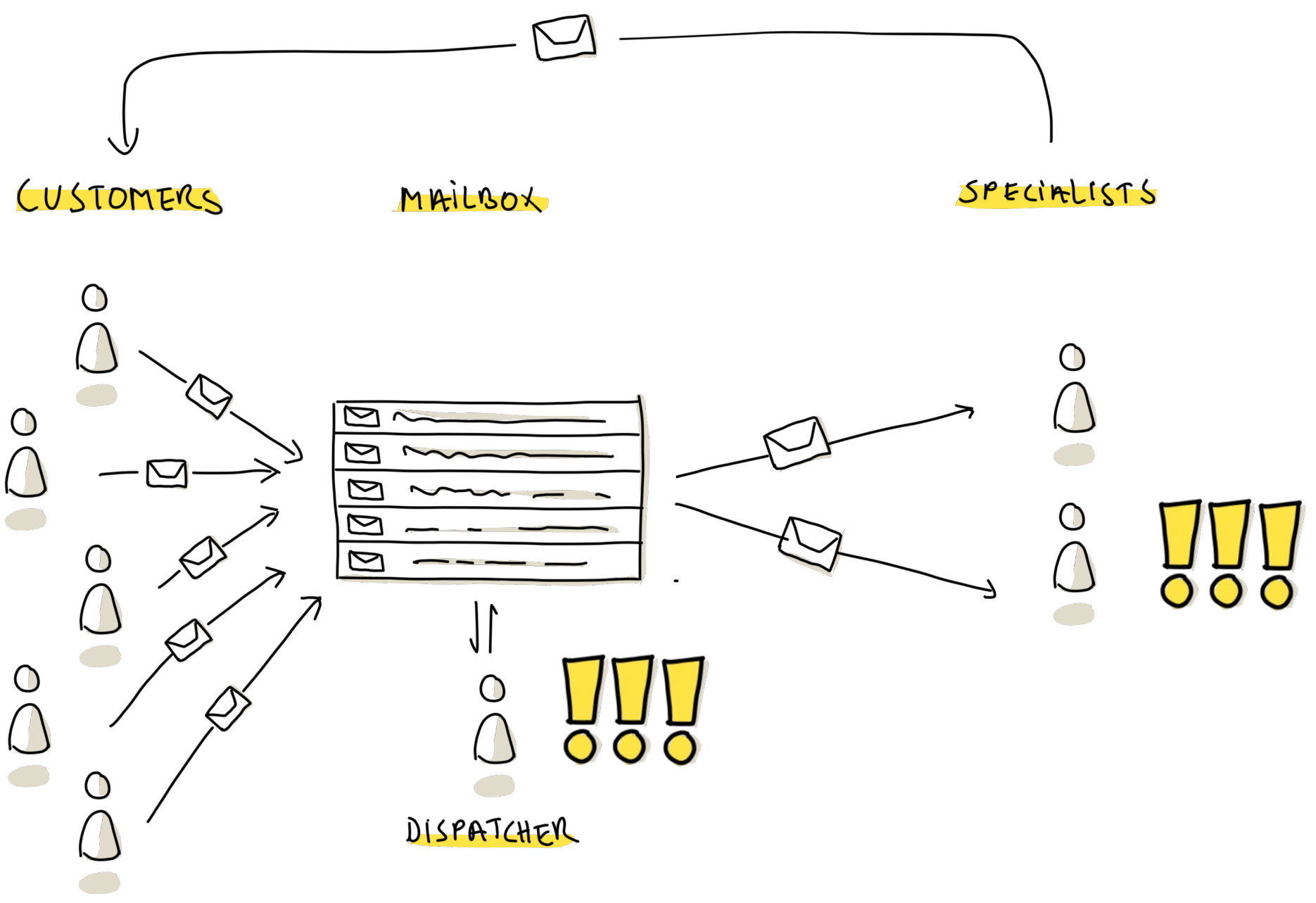
Survival Analysis (Customer Retention)

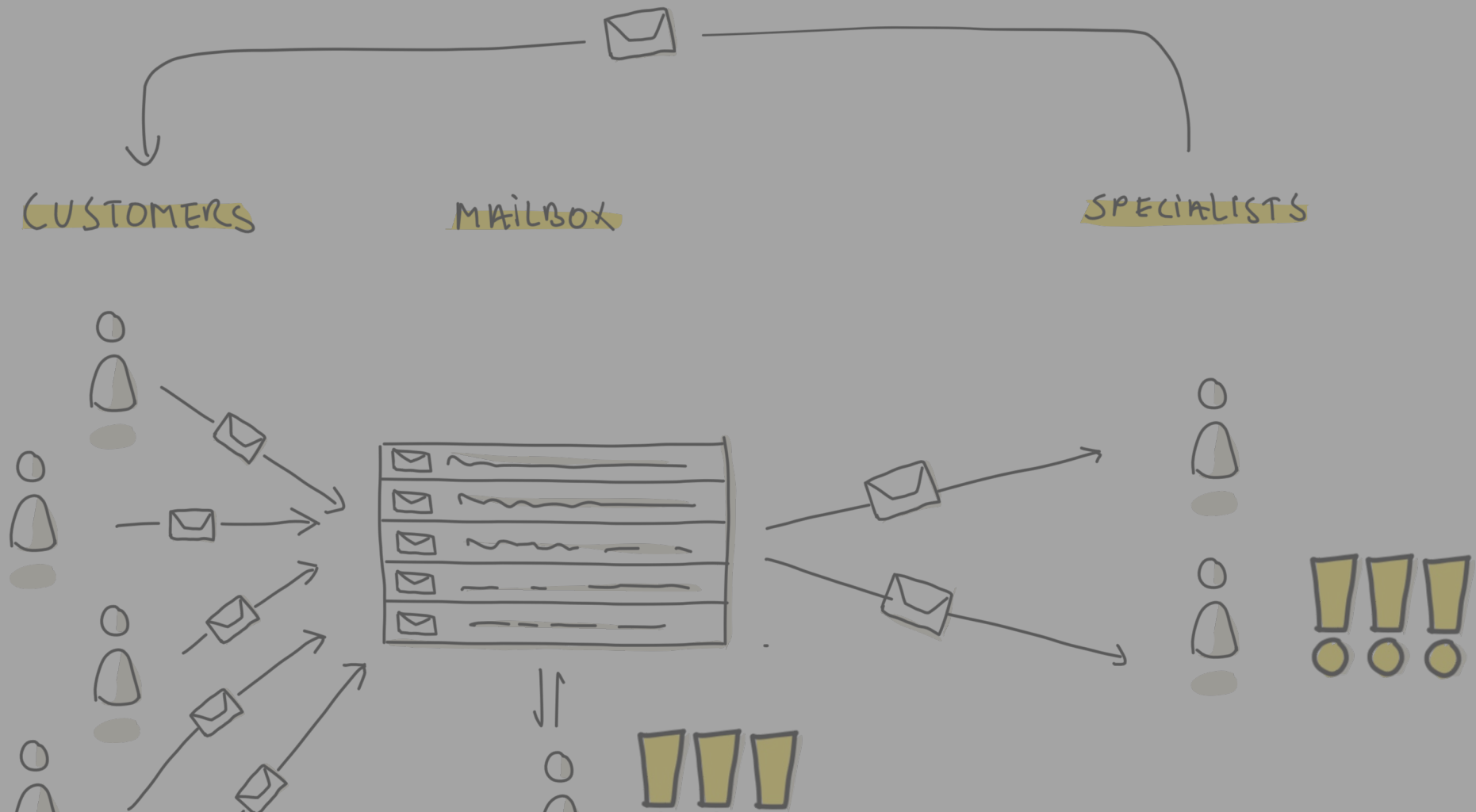




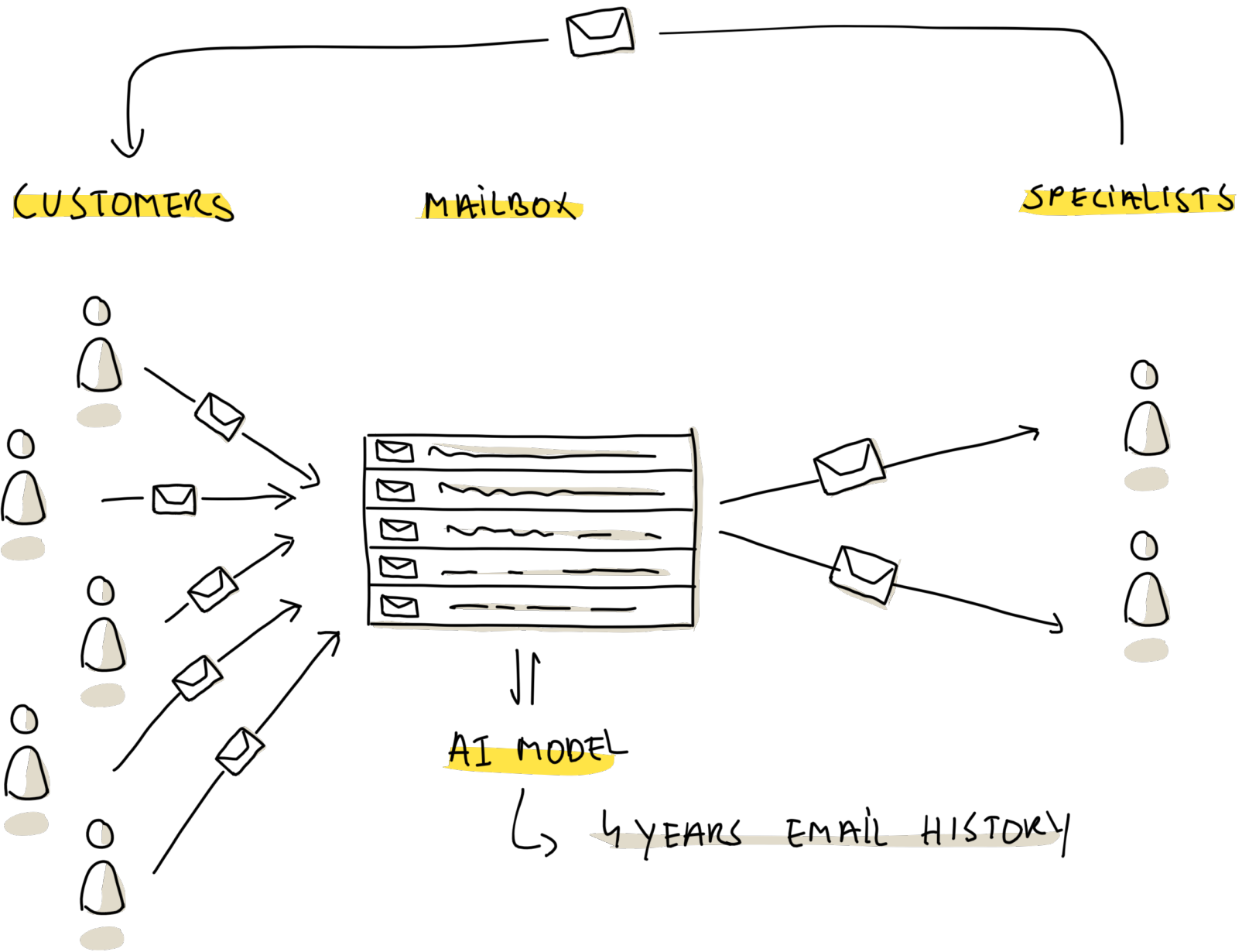
EMAIL TRIAGE





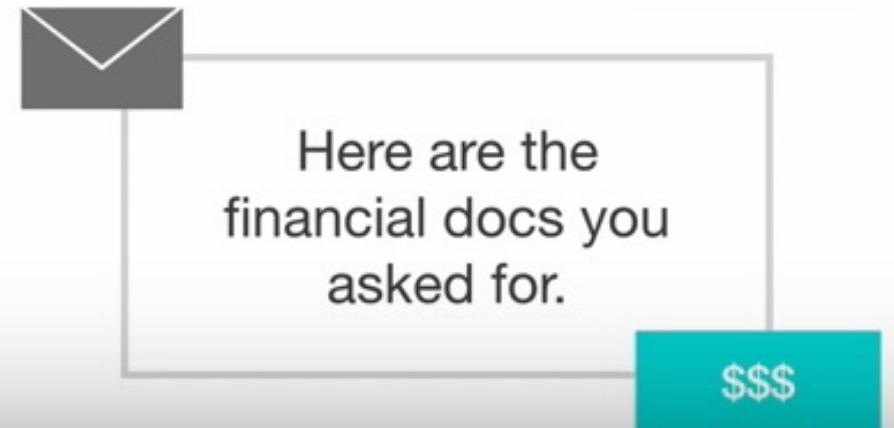
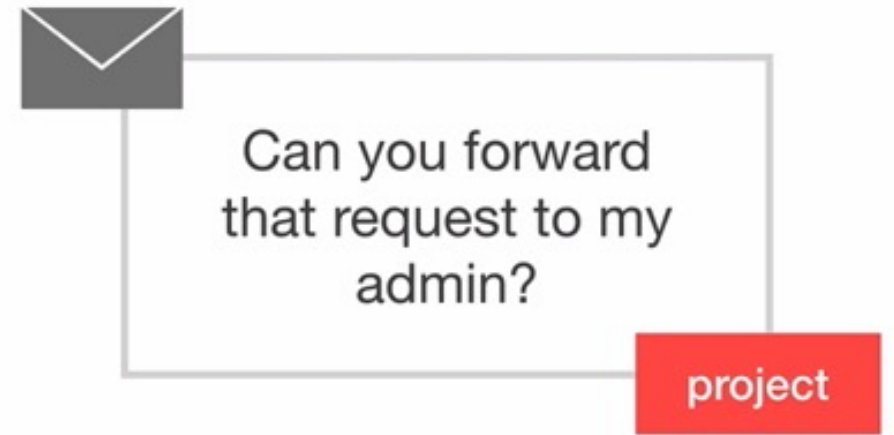
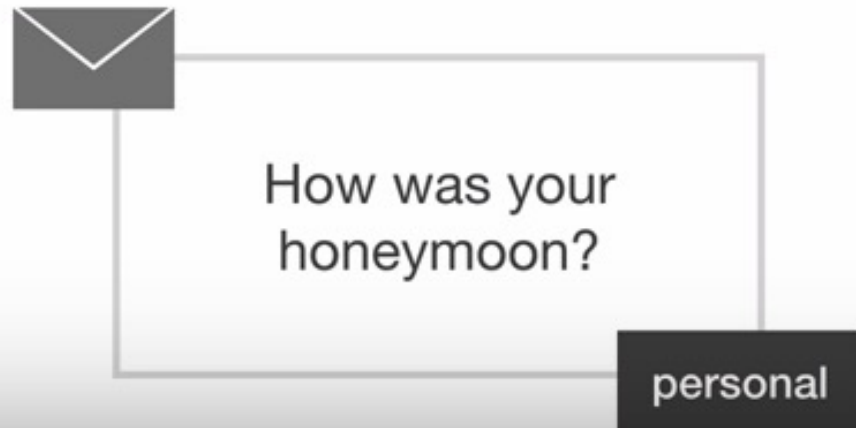
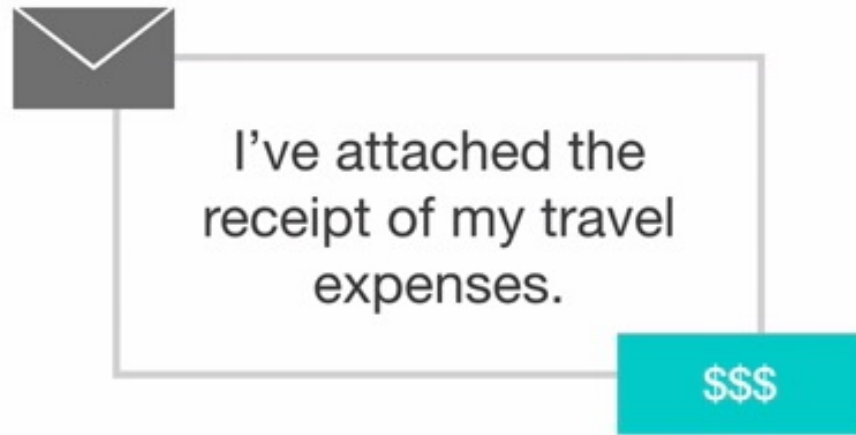
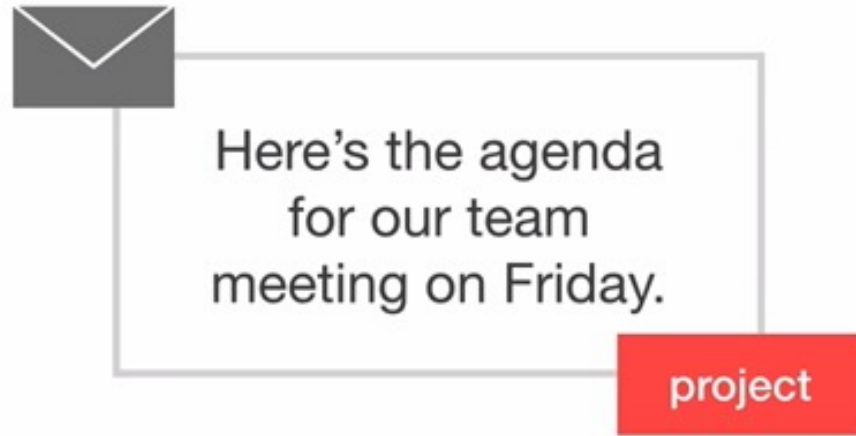


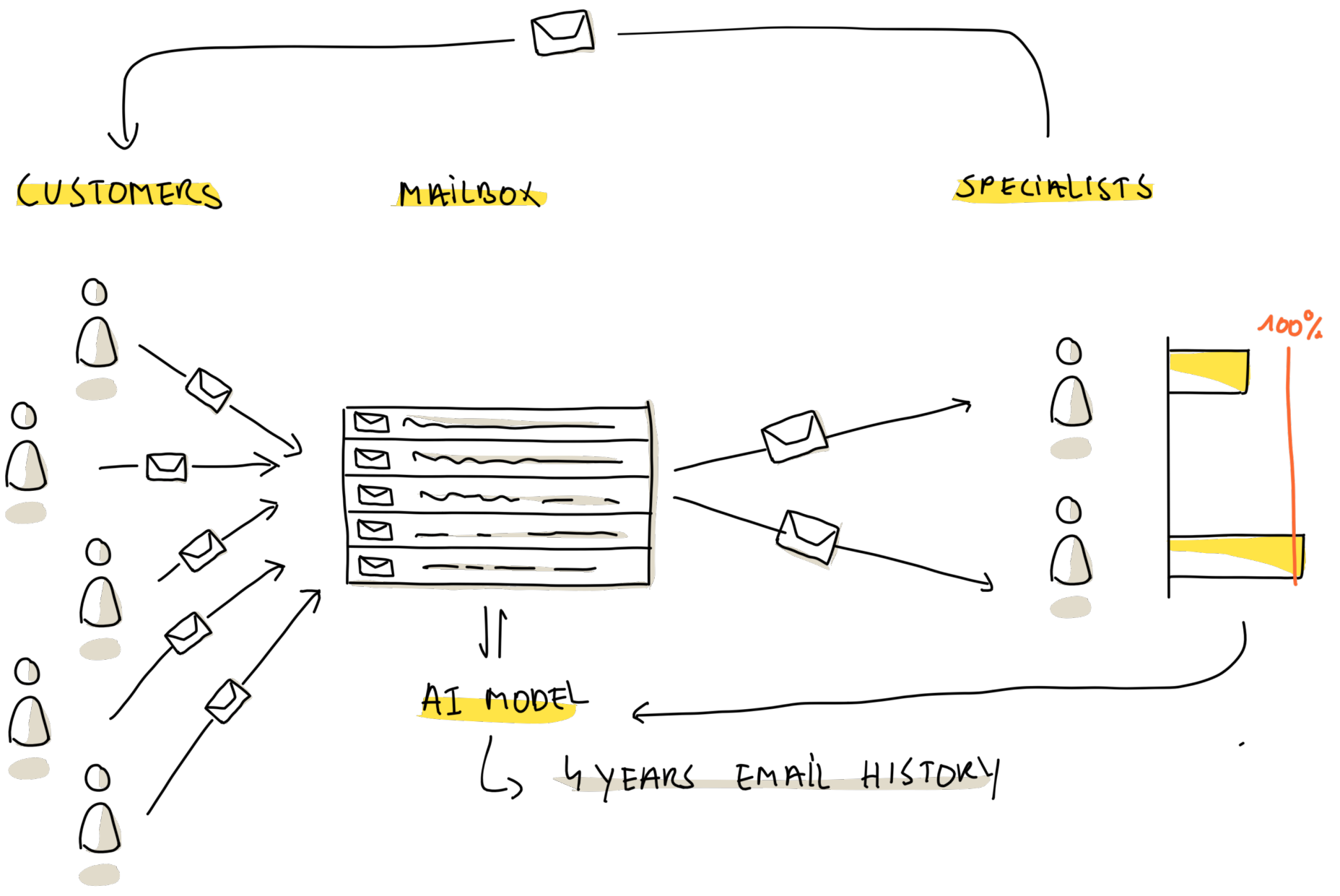
Q: Can we run this process more Efficiently





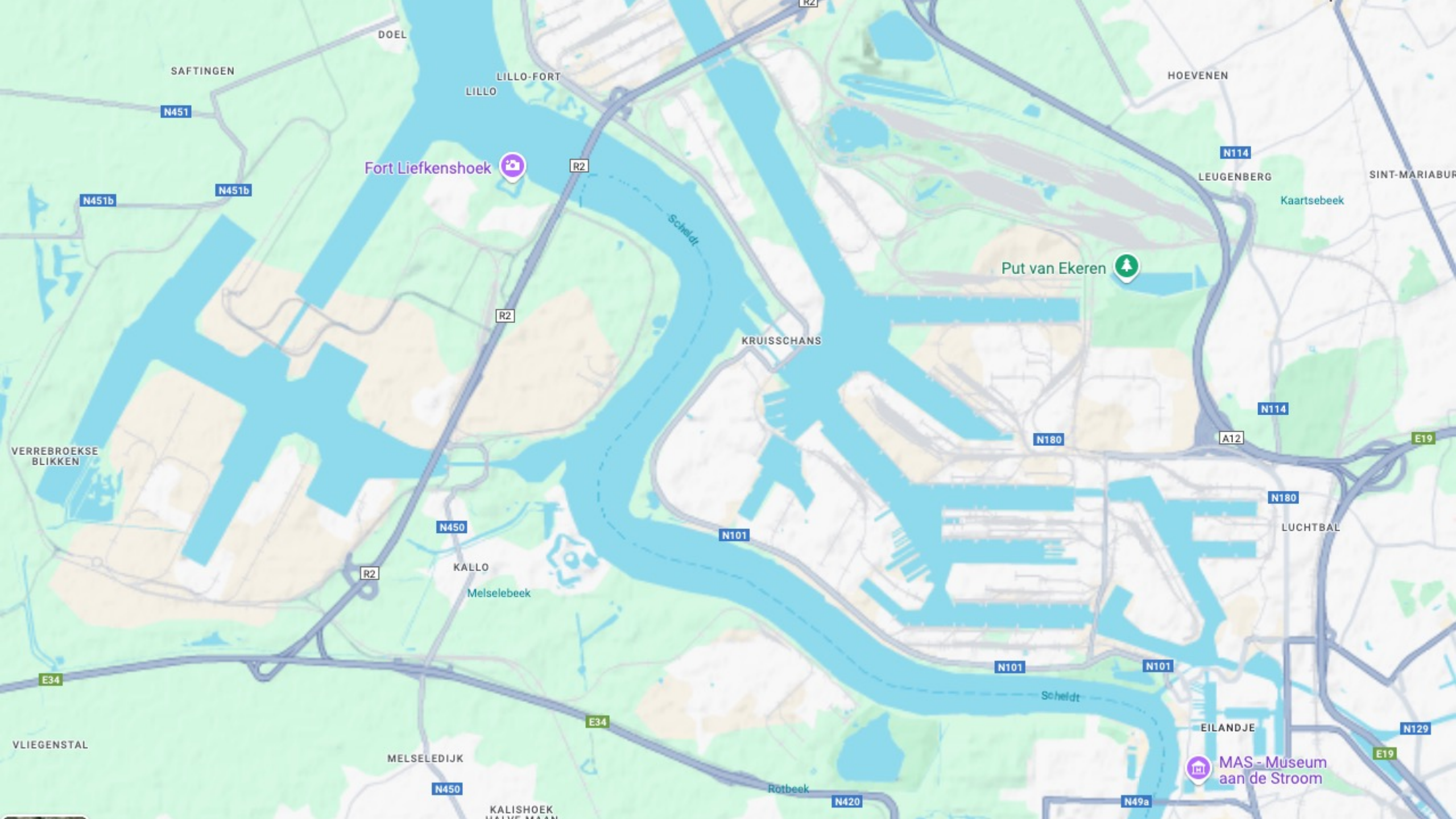
Topic Modeling







FLOATING WASTE



Fort Liefkenshoek

Put van Ekeren

MAS - Museum aan de Stroom



Fort Liefkenshoek

Put van Ekeren

MAS - Museum aan de Stroom

SAFTINGEN

DOEL

LILLO-FORT
LILLO

HOEVENEN

LEUGENBERG

SINT-MARIABUR

Kaartsebeek

N451b

N451b

R2

R2

KRUISSCHANS

N114

A12

E19

VERREBROEKSE
BLIKKEN

N180

N180

LUCHTBAL

R2

N450

KALLO

Melselebeek

N101

N180

N180

N101

N101

E34

E34

Scheldt

VLIEGENSTAL

MELSELEDIJK

Rotbeek

N420

N49a

KALISHOEK
HALVE MAAN

E19

N129



Fort Liefkenshoek

Put van Ekeren

KRUISSCHANS

VERREBROEKSE BLIKKEN

KALLO

Melselebeek

MELSELEDIJK

KALISHOEK

MAS - Museum aan de Stroom

SAFTINGEN

DOEL

LILLO-FORT
LILLO

HOEVENEN

LEUGENBERG

Kaartsebeek

SINT-MARIABUR

N451b

N451b

N451

R2

R2

N114

N114

A12

E19

N180

N180

LUCHTBAL

R2

N450

N101

N101

N101

E34

E34

VLIEGENSTAL

N450

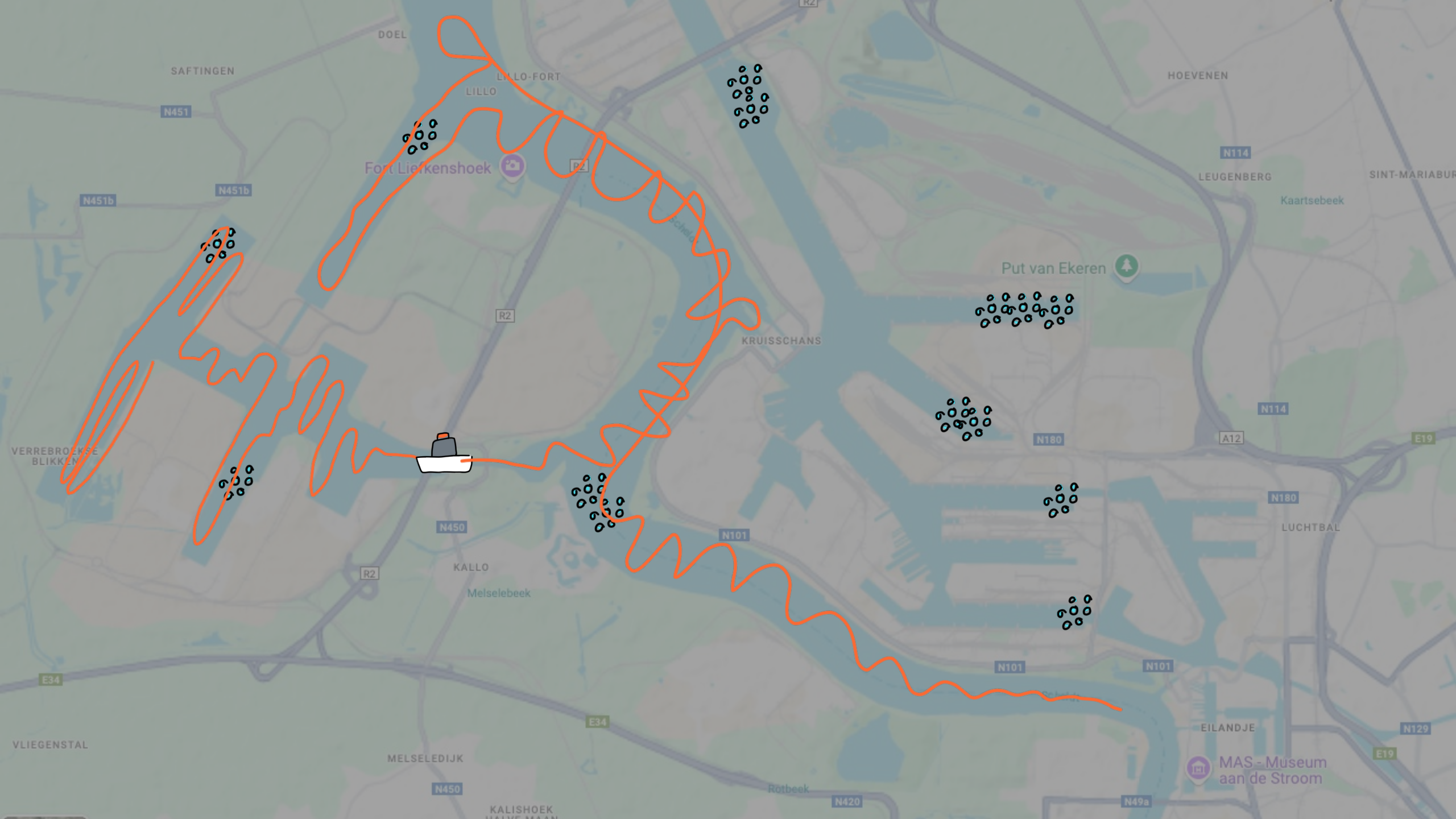
Rotbeek

N420

N49a

E19

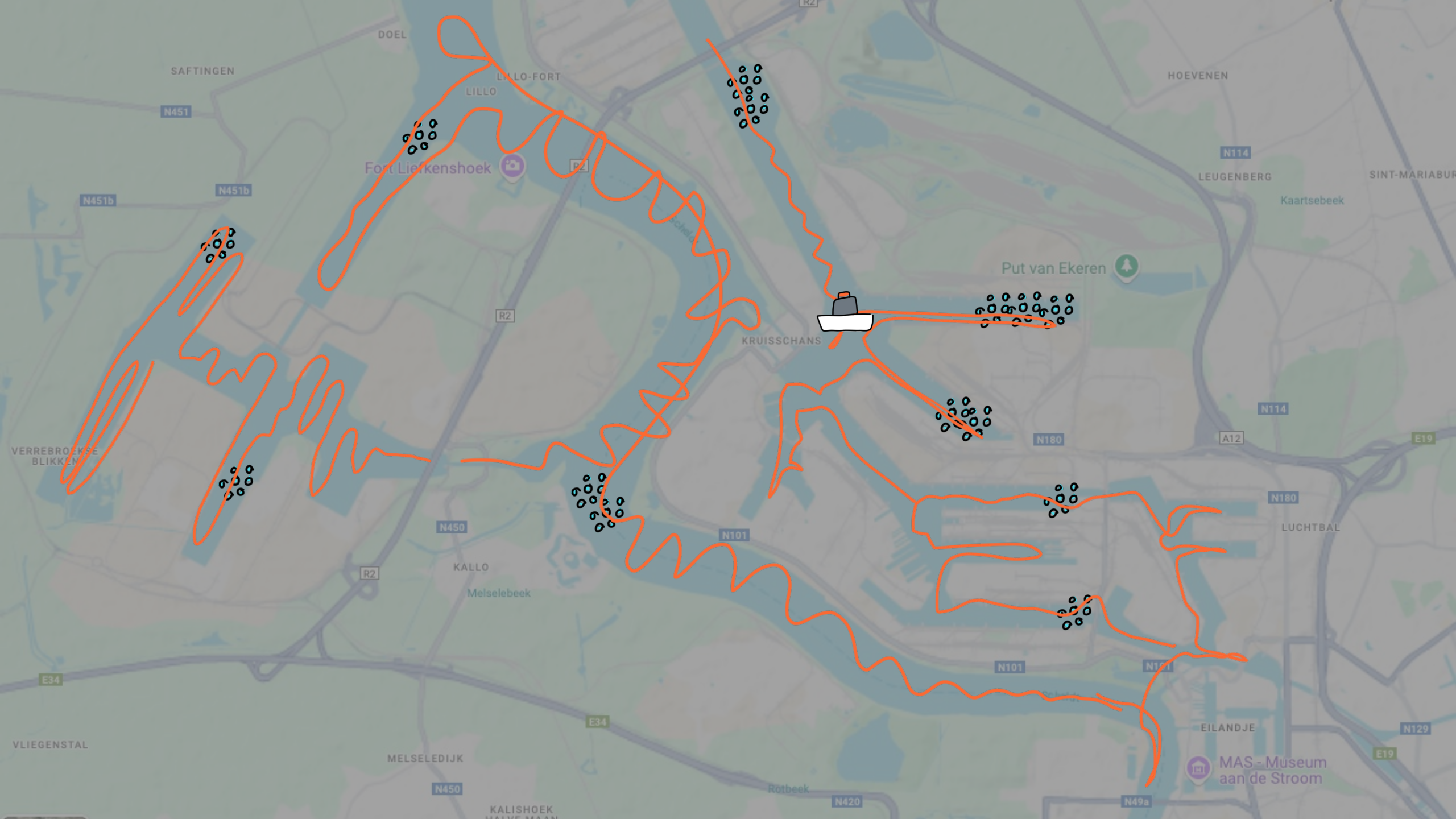
N129



Fort Liefkenshoek



MAS - Museum aan de Stroom



Fort Liefkenshoek

KRUISSCHANS

Put van Ekeren

MAS - Museum aan de Stroom

SAFTINGEN

DOEL

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N451b

N451b

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N180

LUCHTBAL

R2

KALLO

Melselebeek

N101

N101

N101

E34

E34

VLIEGENSTAL

MELSELEDIJK

EILANDJE

N129

N450

Rotbeek

N420

N49a

KALISHOEK HALVE MAAN



**Q: Clean Floating Waste
more Efficiently**

reCAPTCHA

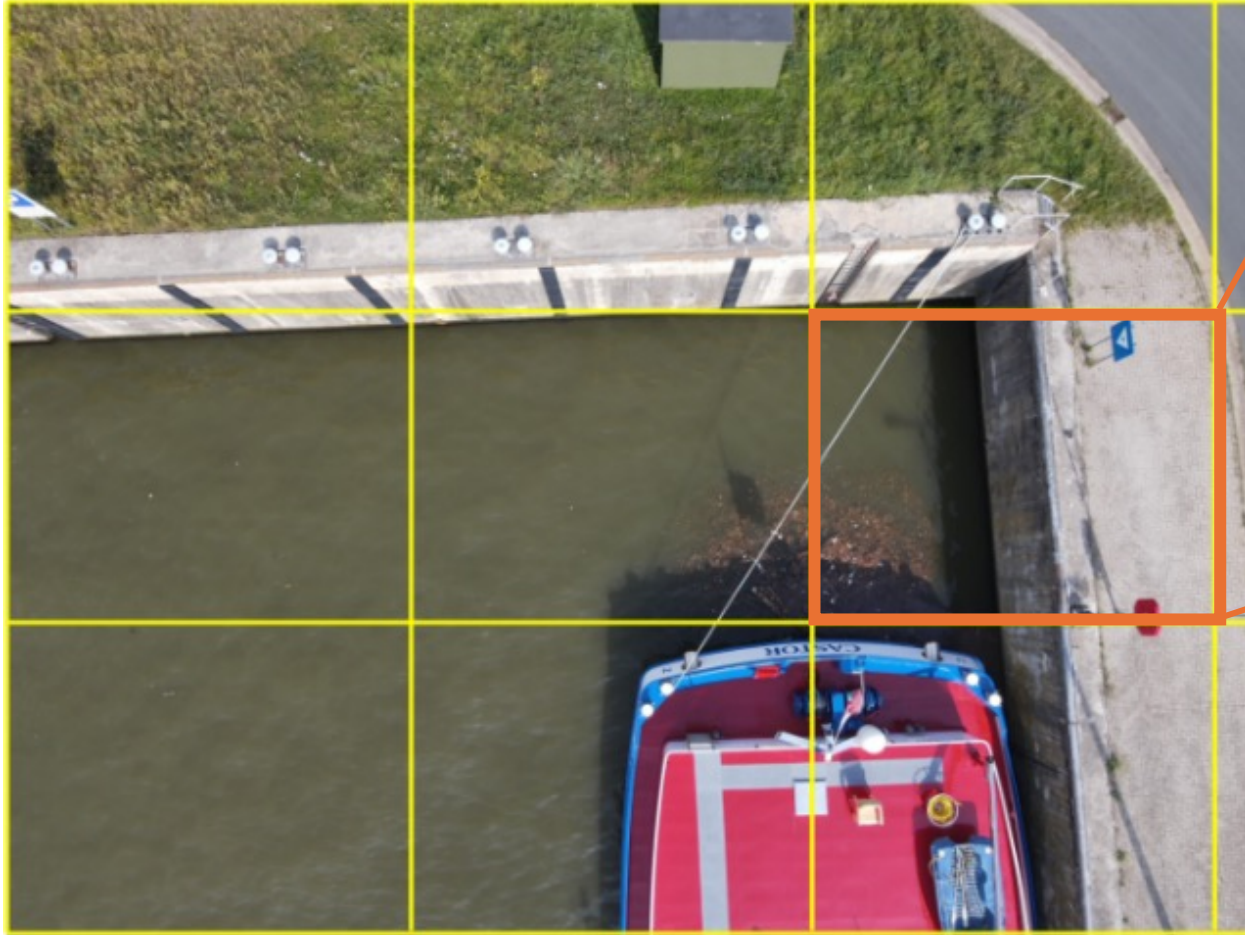


Select all squares with **traffic lights**

A 3x4 grid of image tiles showing a street intersection. The top row shows traffic lights on a pole. The middle row shows a street with cars and a building in the background. The bottom row shows the street surface and a white pickup truck. The task is to select all squares containing traffic lights.

⌂ 🎧 ⓘ [VERIFY](#)

reCAPTCHA



AI Failure : AI-powered ball-tracking technology

- Inverness Caledonian Thistle F.C.

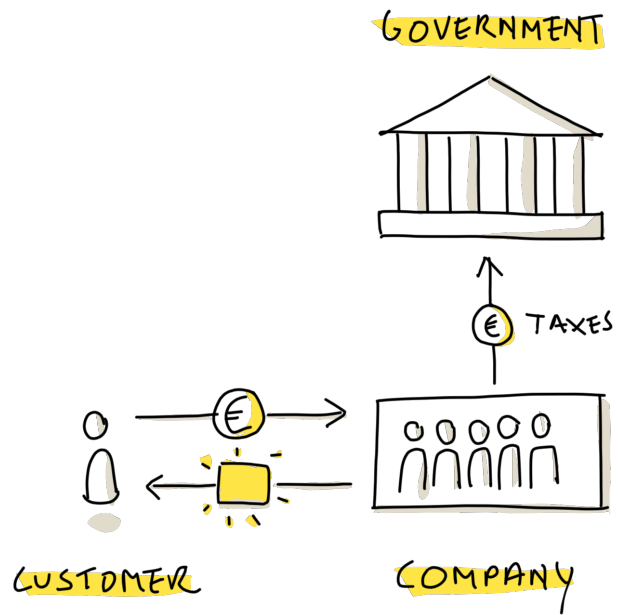




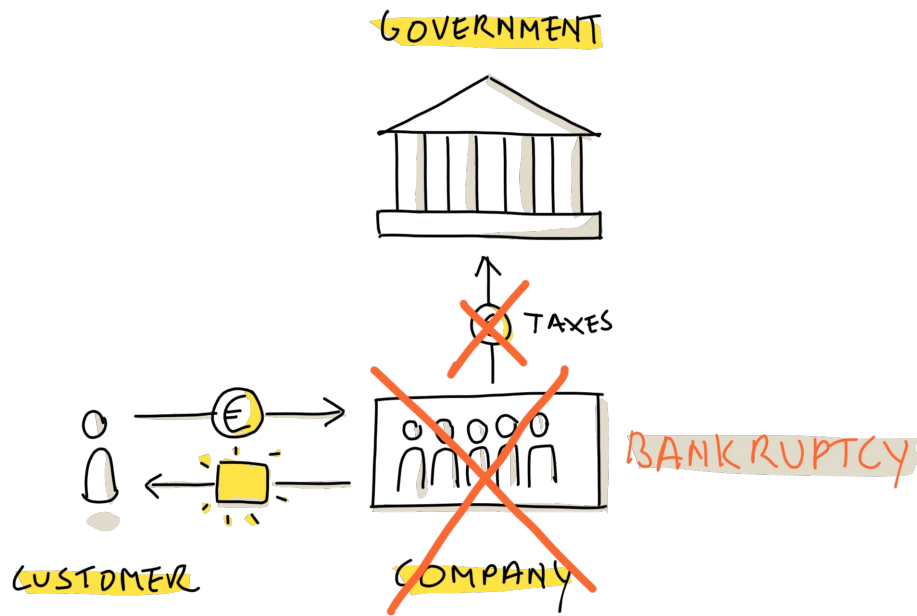
FRAUD DETECTION



NORMAL SITUATION

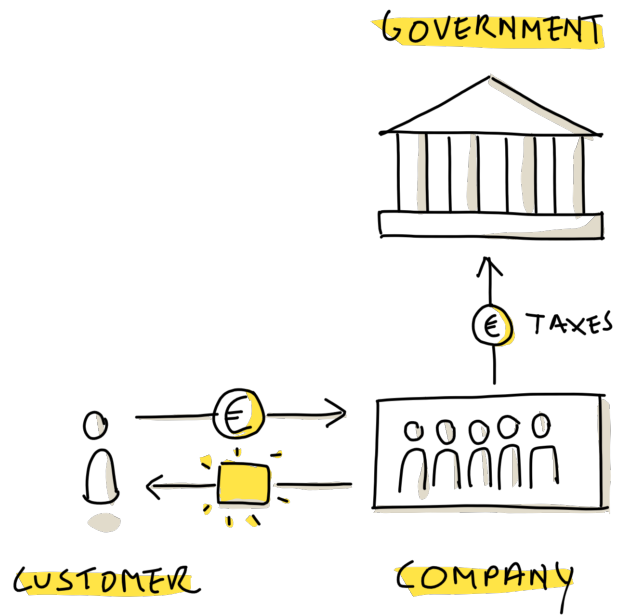


FRAUD

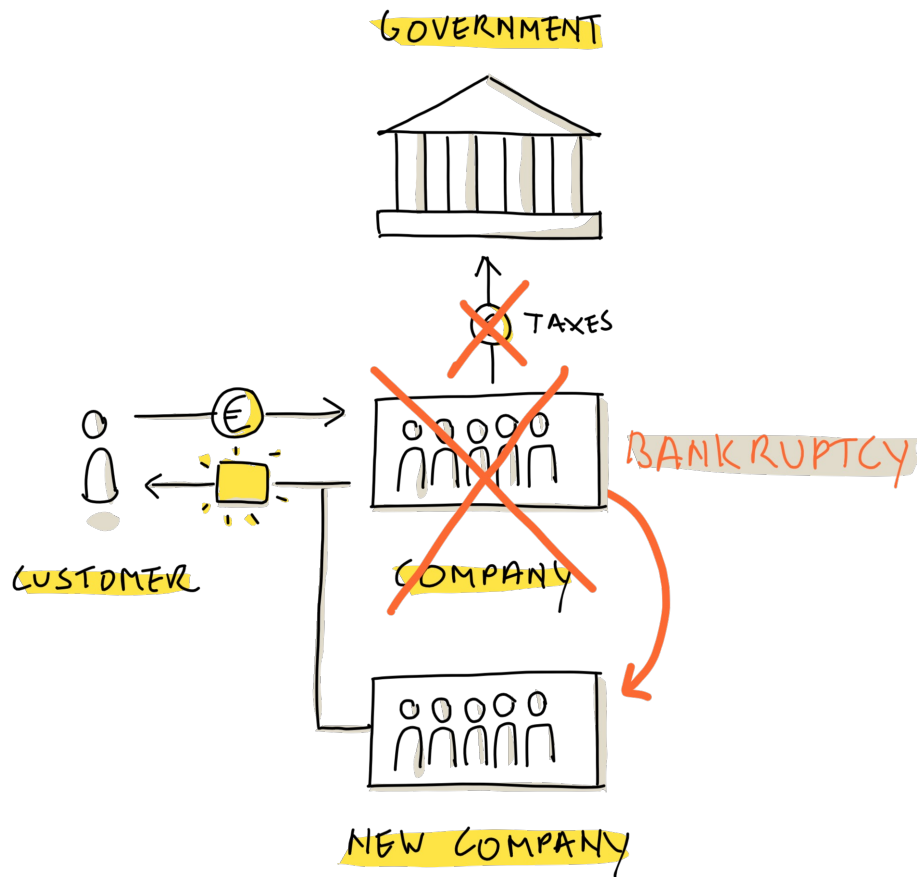




NORMAL SITUATION

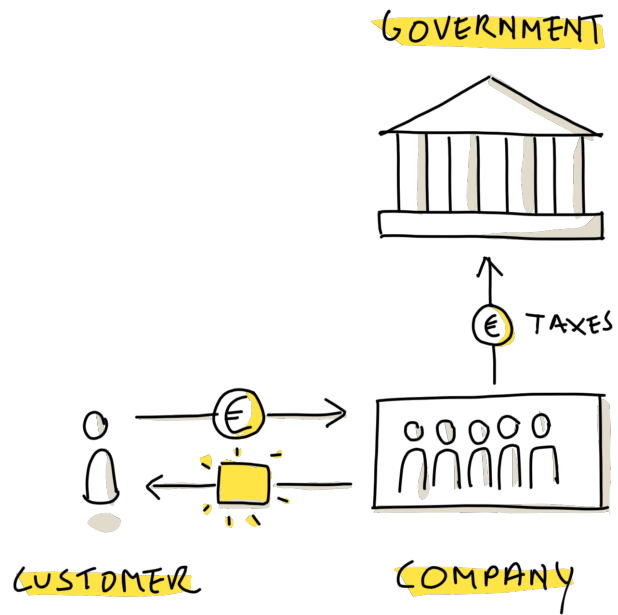


FRAUD

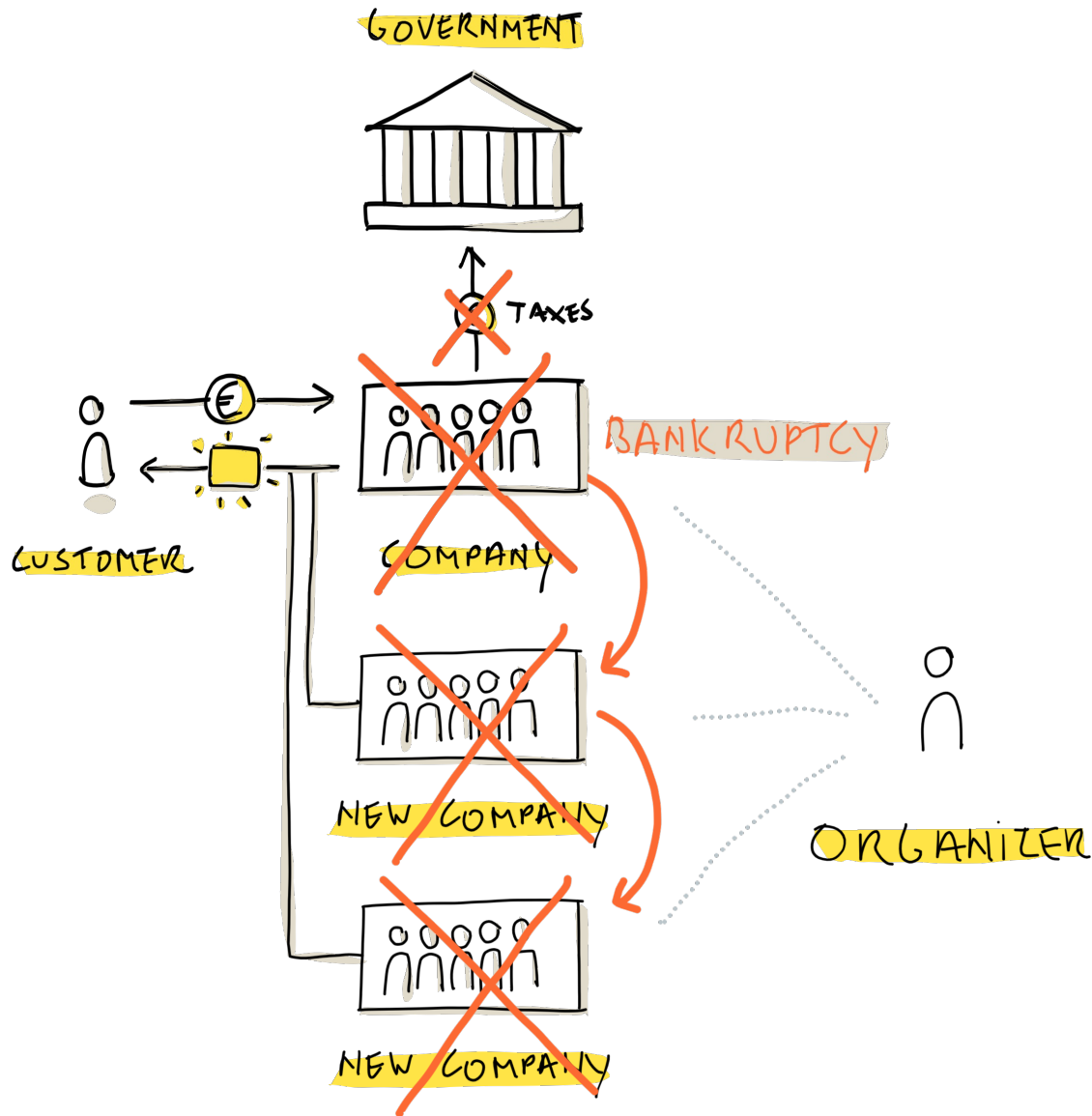




NORMAL SITUATION

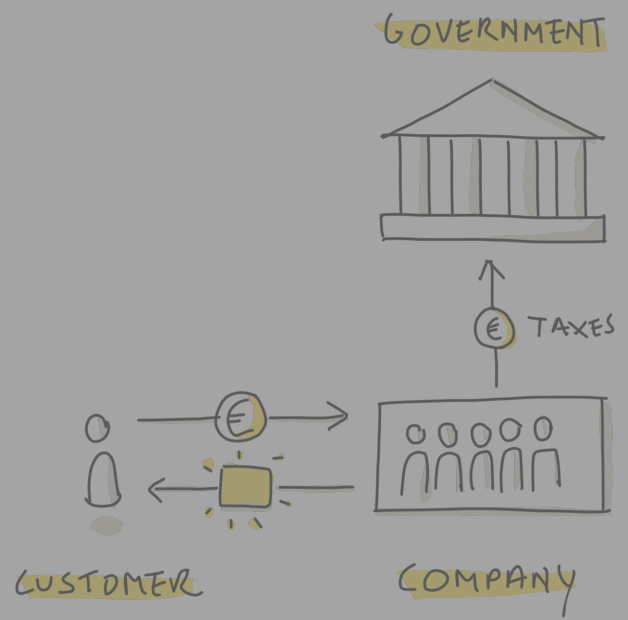


FRAUD

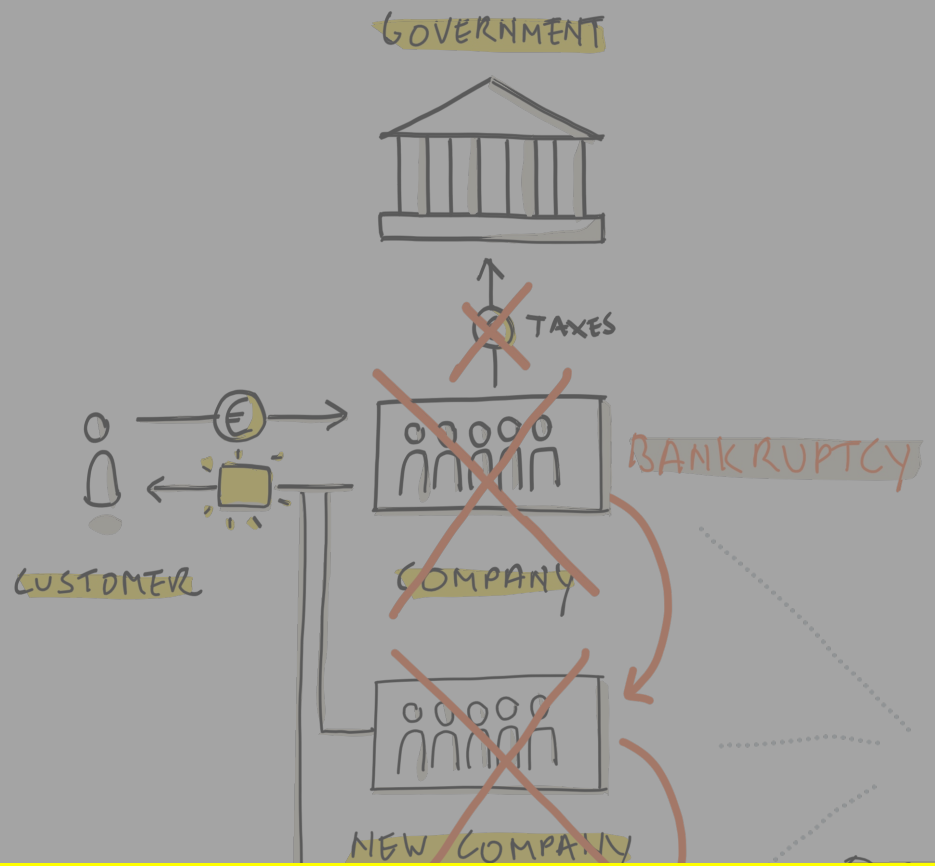




NORMAL SITUATION



FRAUD

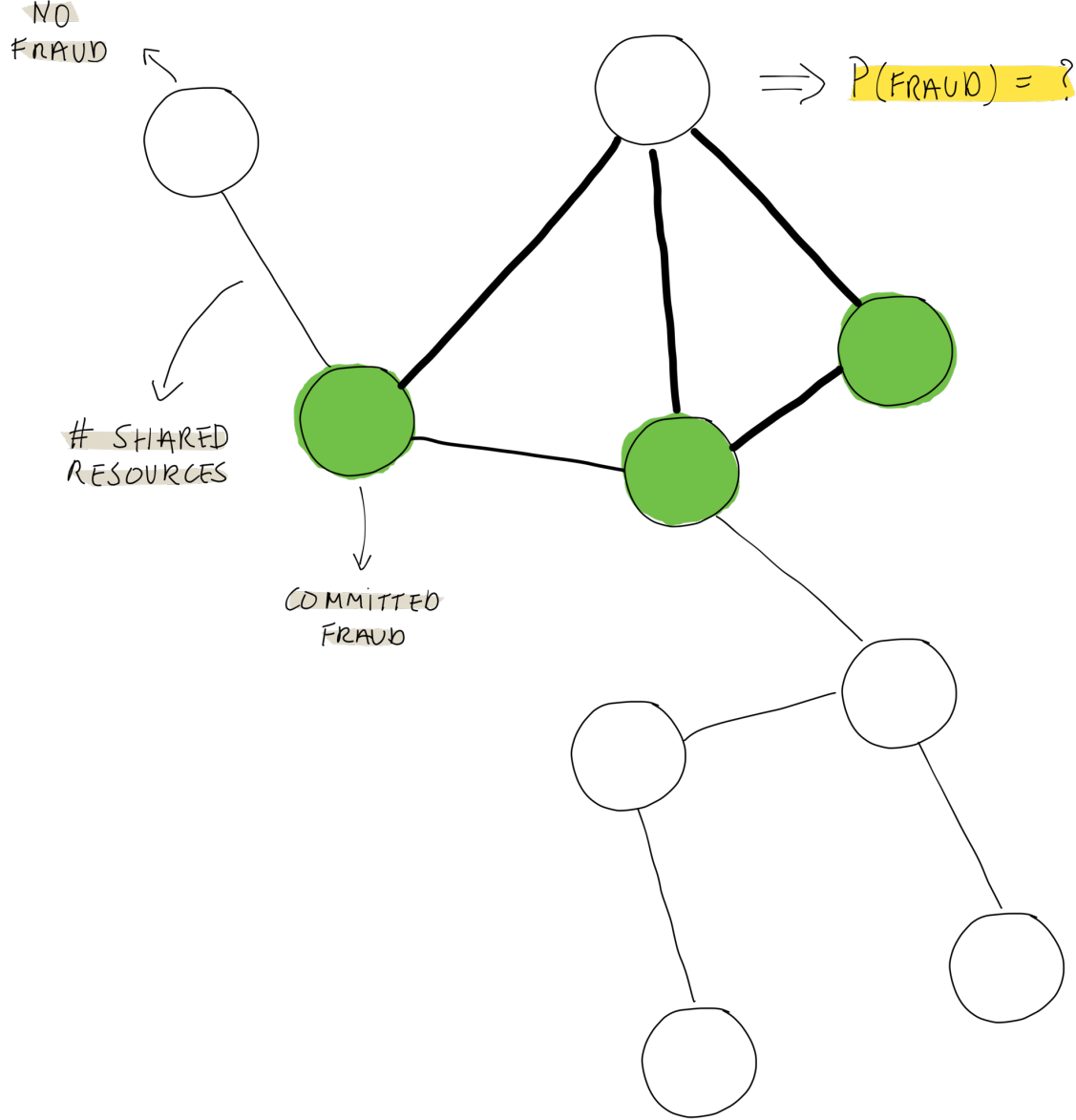


Q: Identify this Fraud Pattern Faster

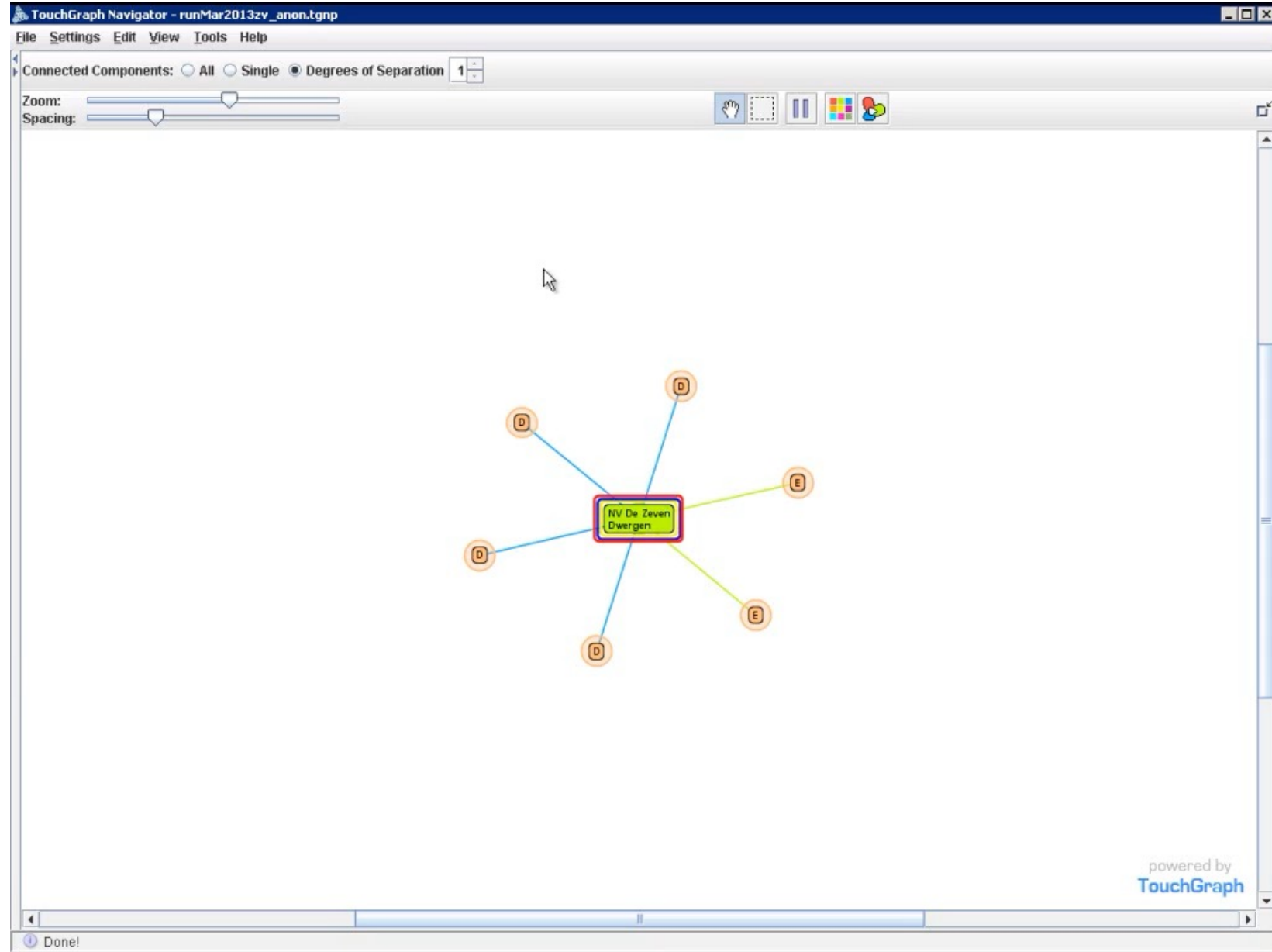
~~NEW COMPANY~~



NETWORK ANALYTICS

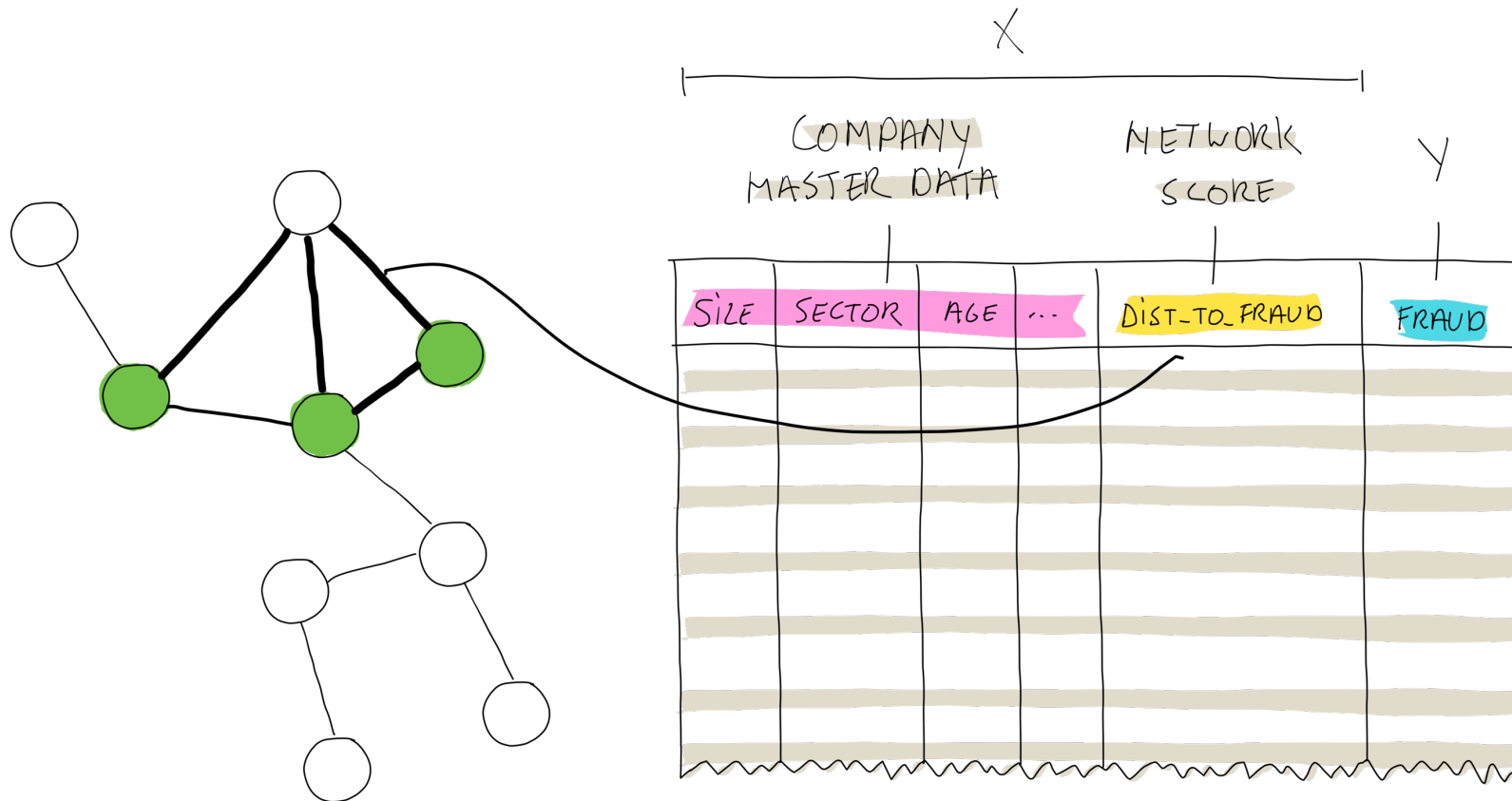


NETWORK EXPLORATION TOOL





NETWORK ANALYTICS



$$\text{RANDOMFOREST}(X) = Y$$



RETAIL



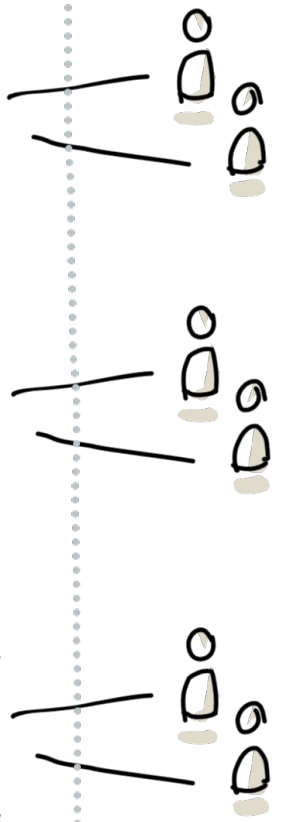
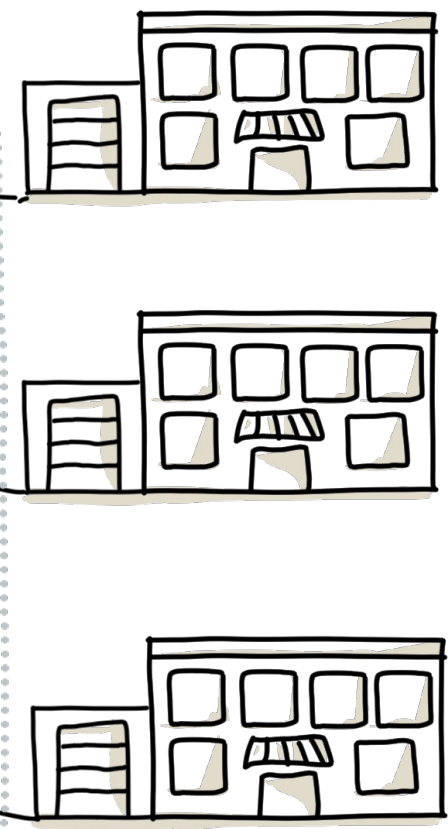
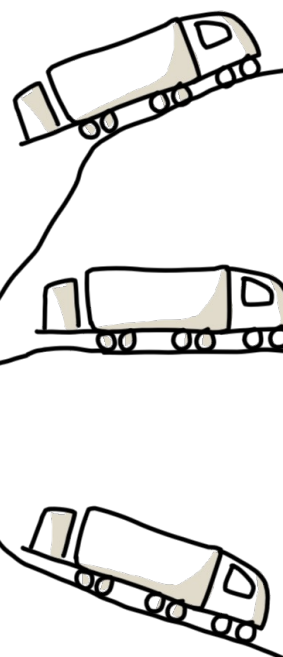
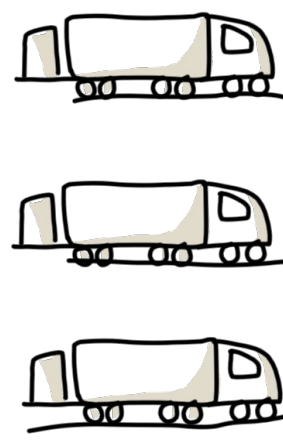
DELIVERY

HUBS

TRANSPORT

SHOP

CUSTOMERS





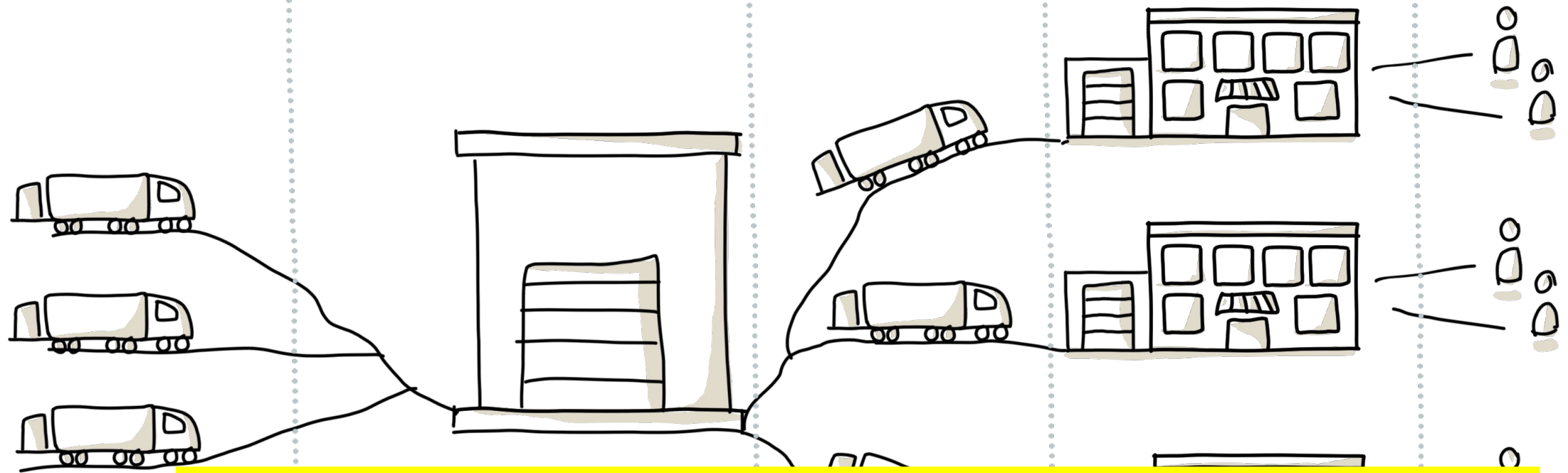
DELIVERY

HUBS

TRANSPORT

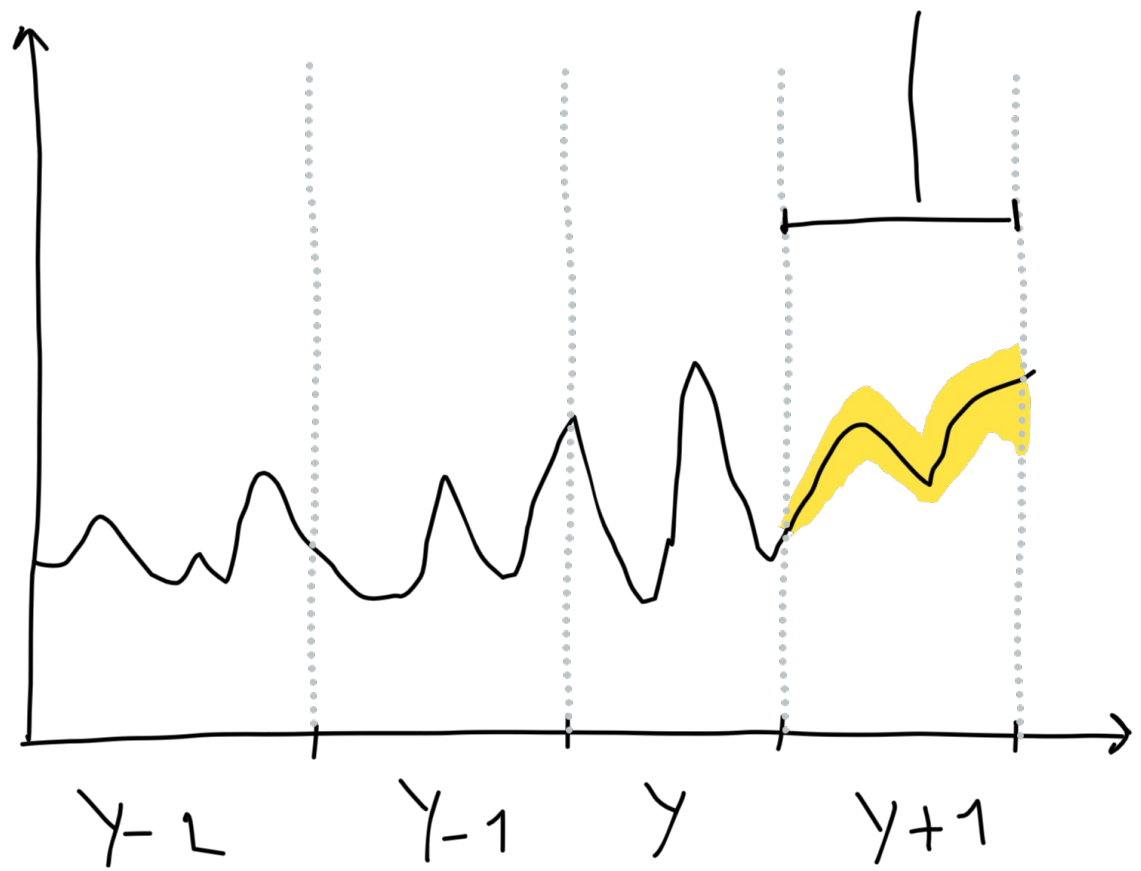
SHOP

CUSTOMERS



Q: Buy Cheaper Products from Whole Sale?

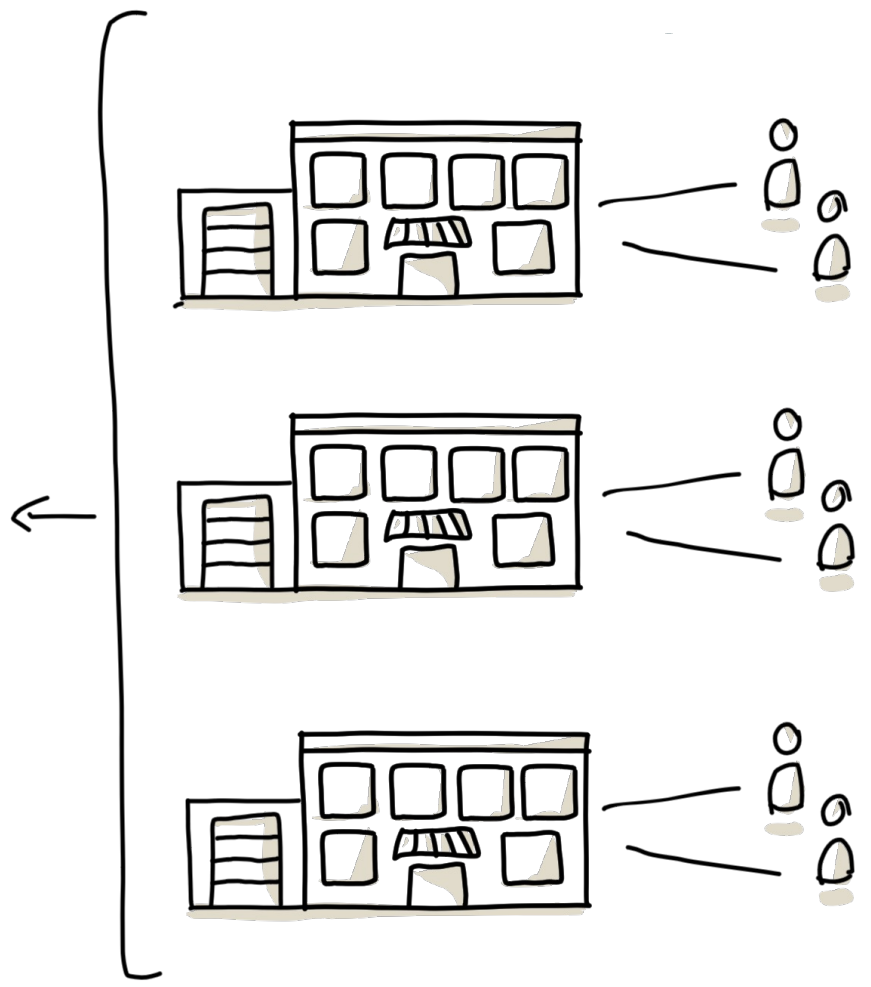
Σ = VOLUME PURCHASE



FORECAST PRODUCT X

SHOP

CUSTOMERS





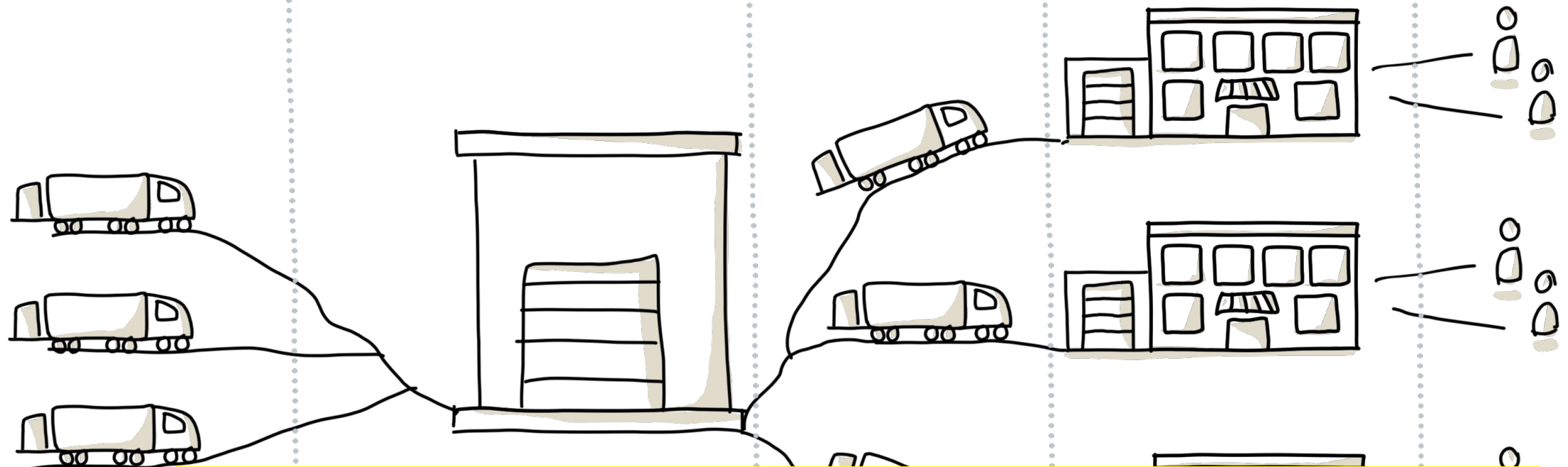
DELIVERY

HUBS

TRANSPORT

SHOP

CUSTOMERS

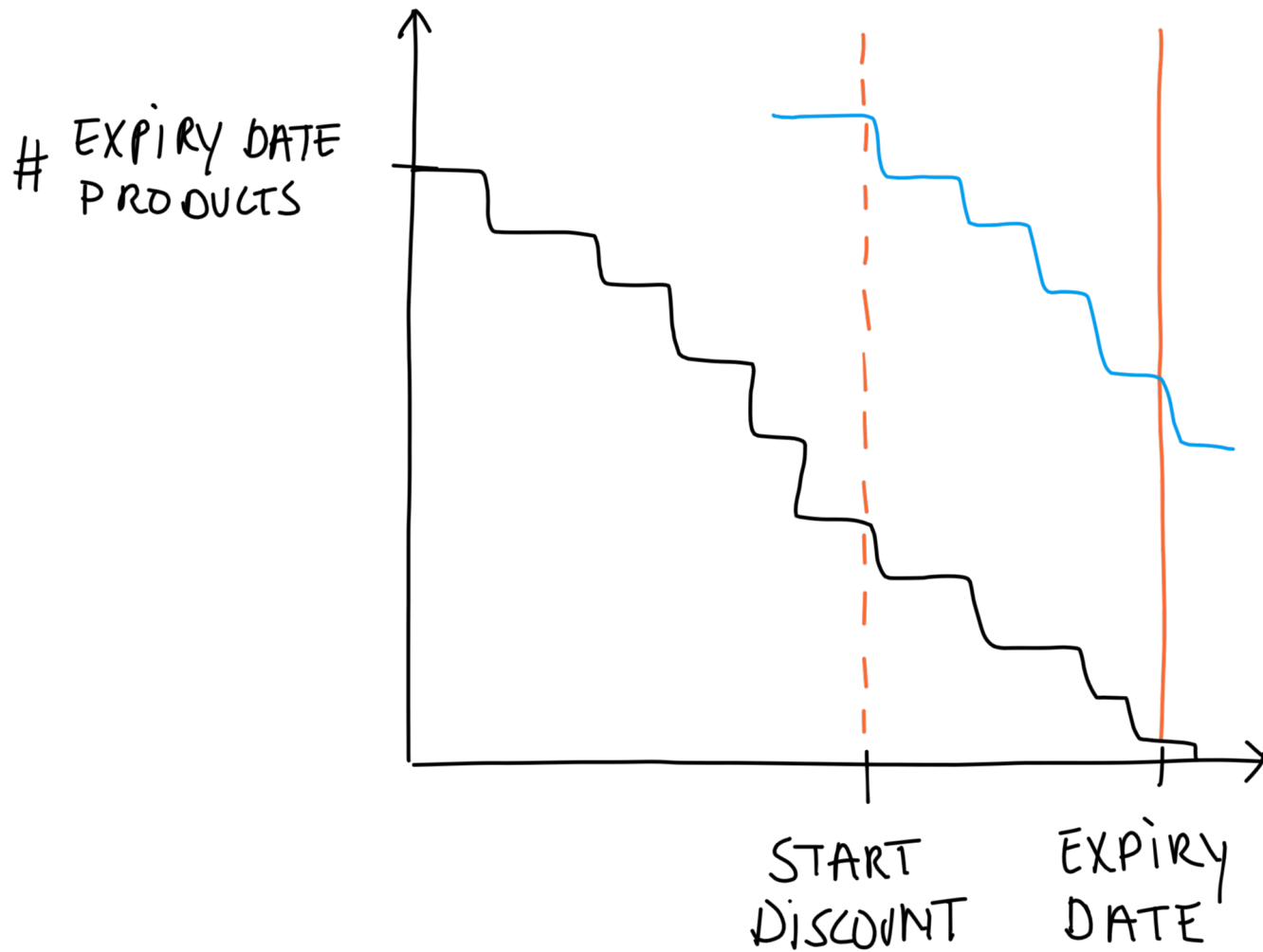


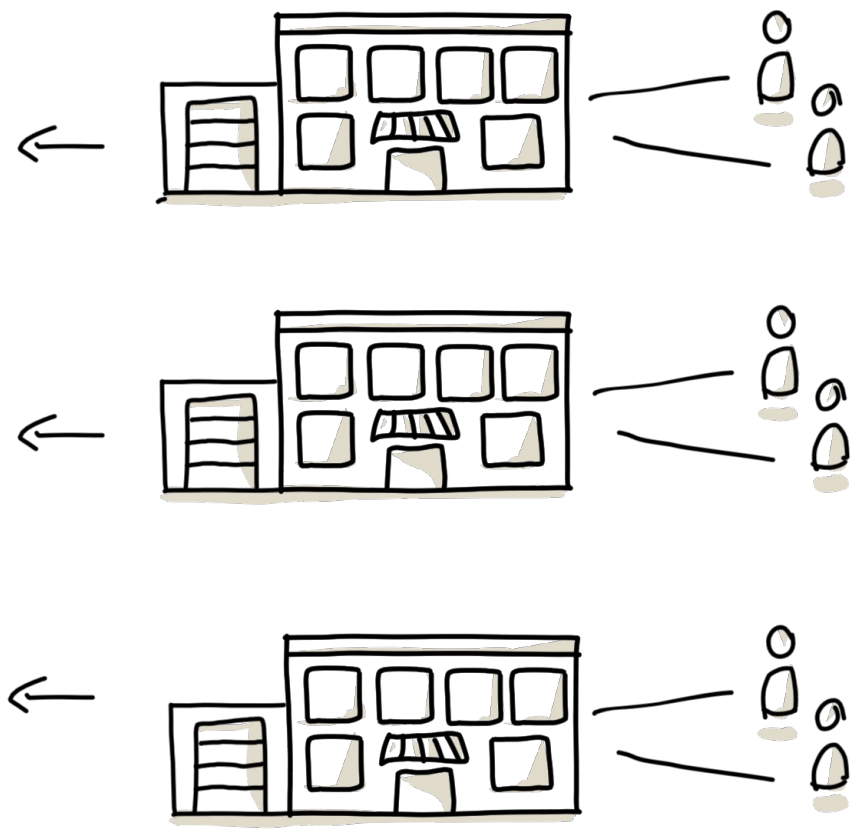
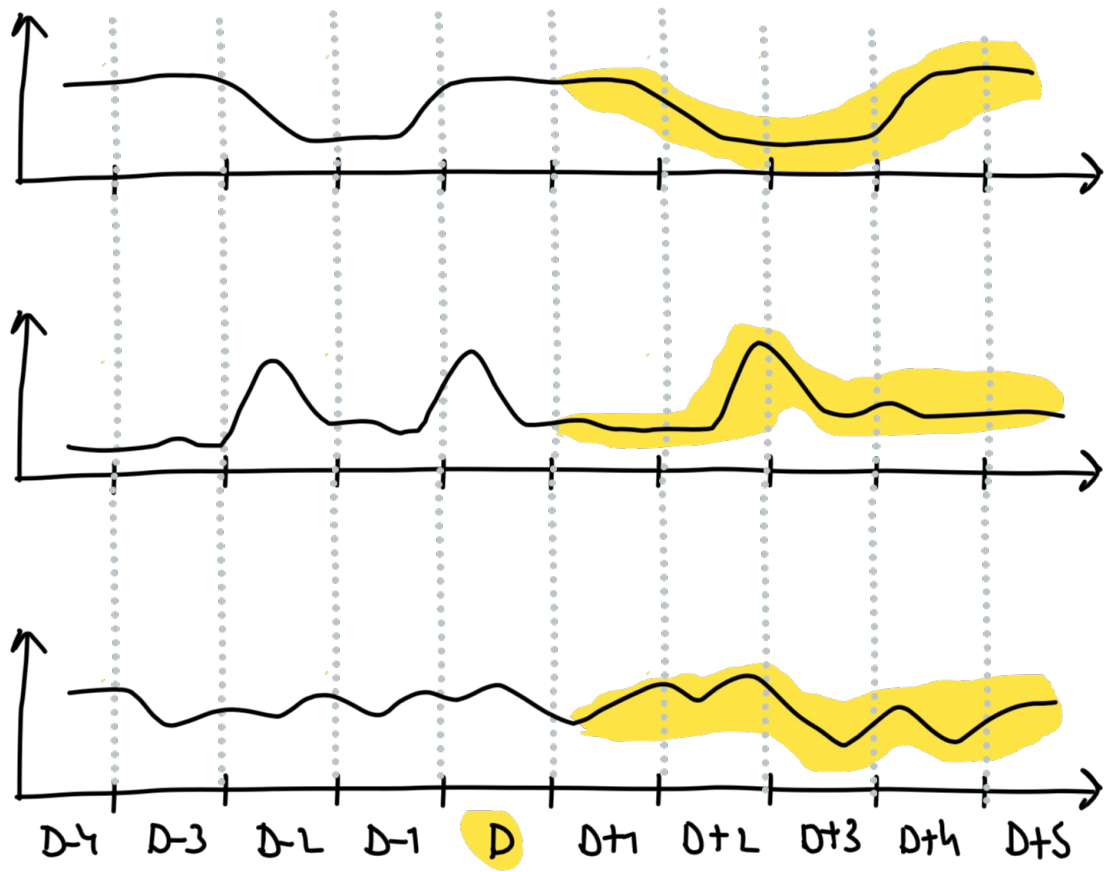
Q: Optimize the Expiry Date Stock in the Shops



EXPIRY DATE

STOCK MANAGEMENT

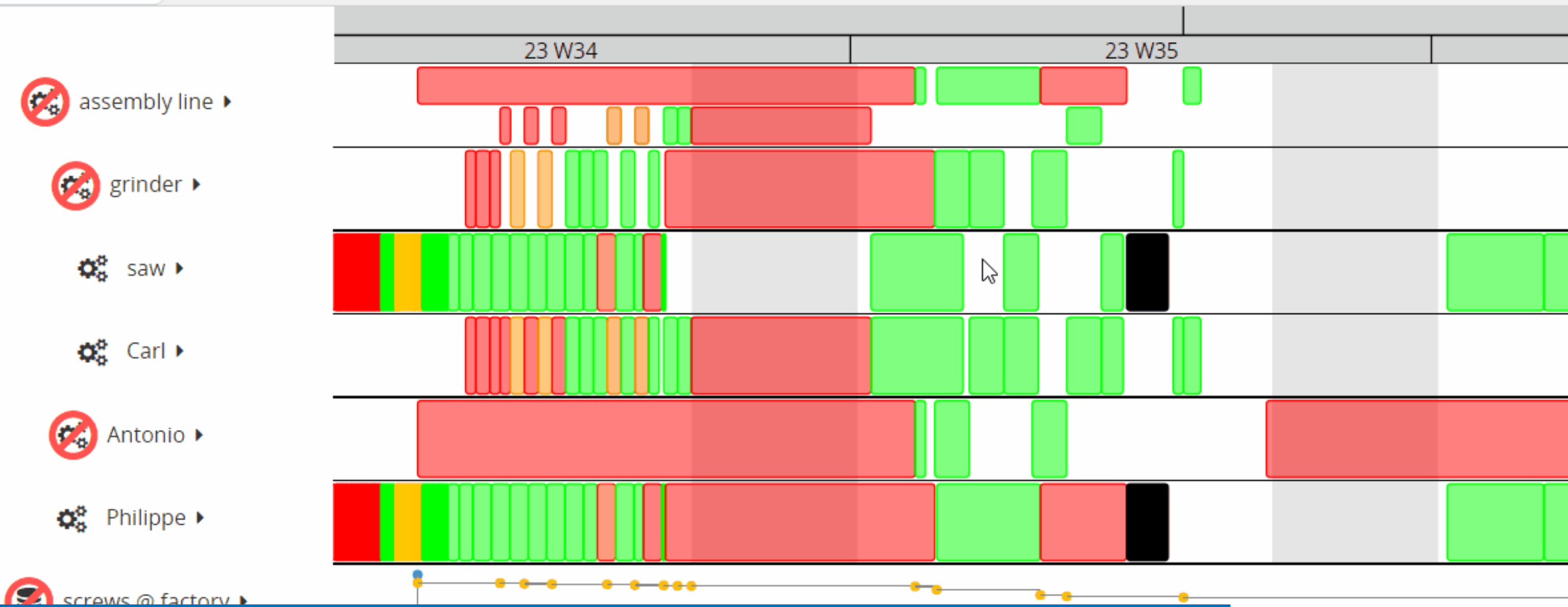




FORECAST PRODUCT X



Color By Delay ▾



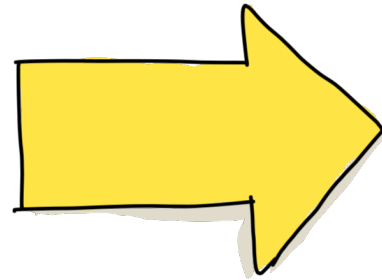
Production Planning

screws @ factory ▶

Demand 02 ▶



INPUT



OUTPUT



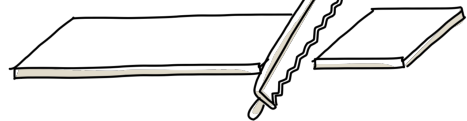
DOORHINGE



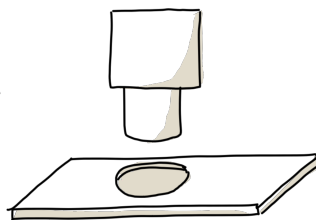
DOORHANDLE



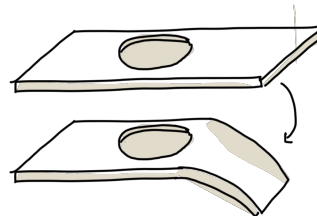
HOOD



SAWING

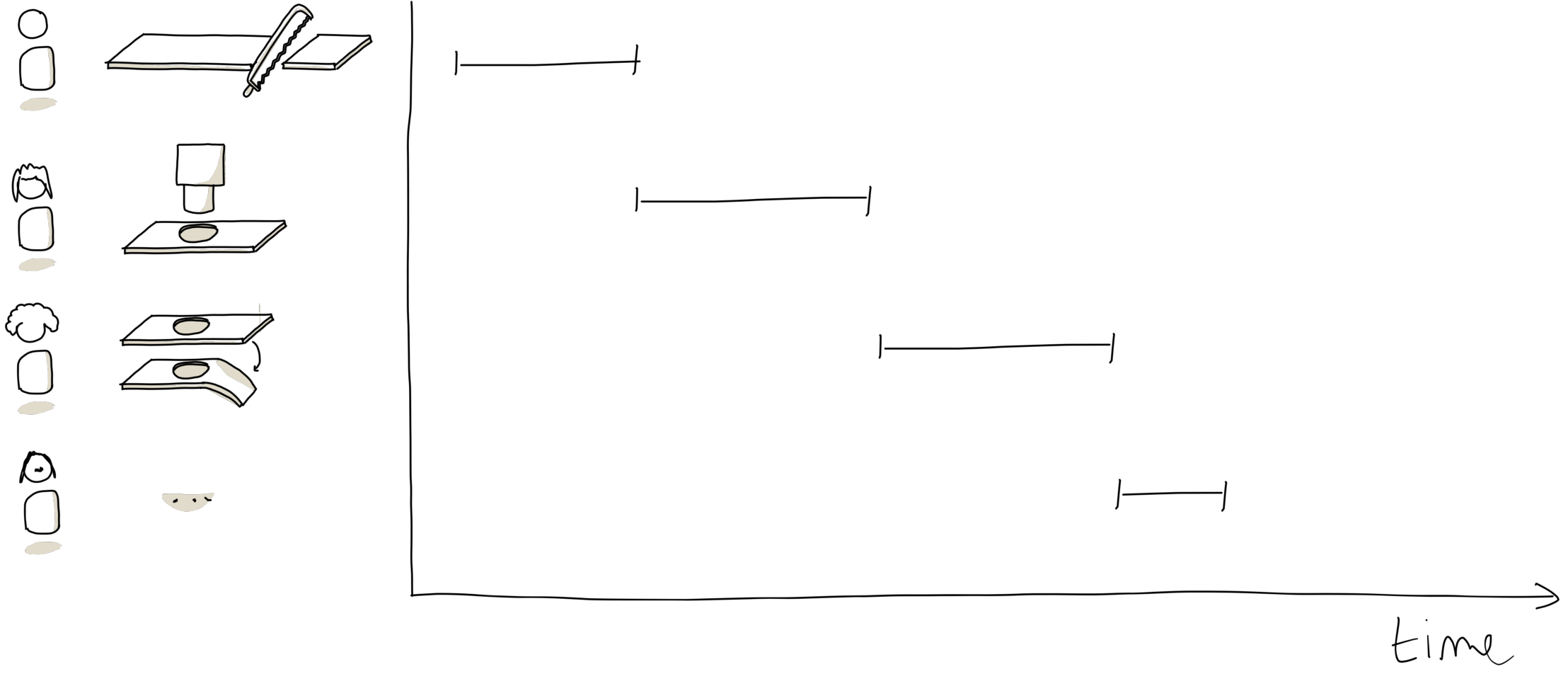


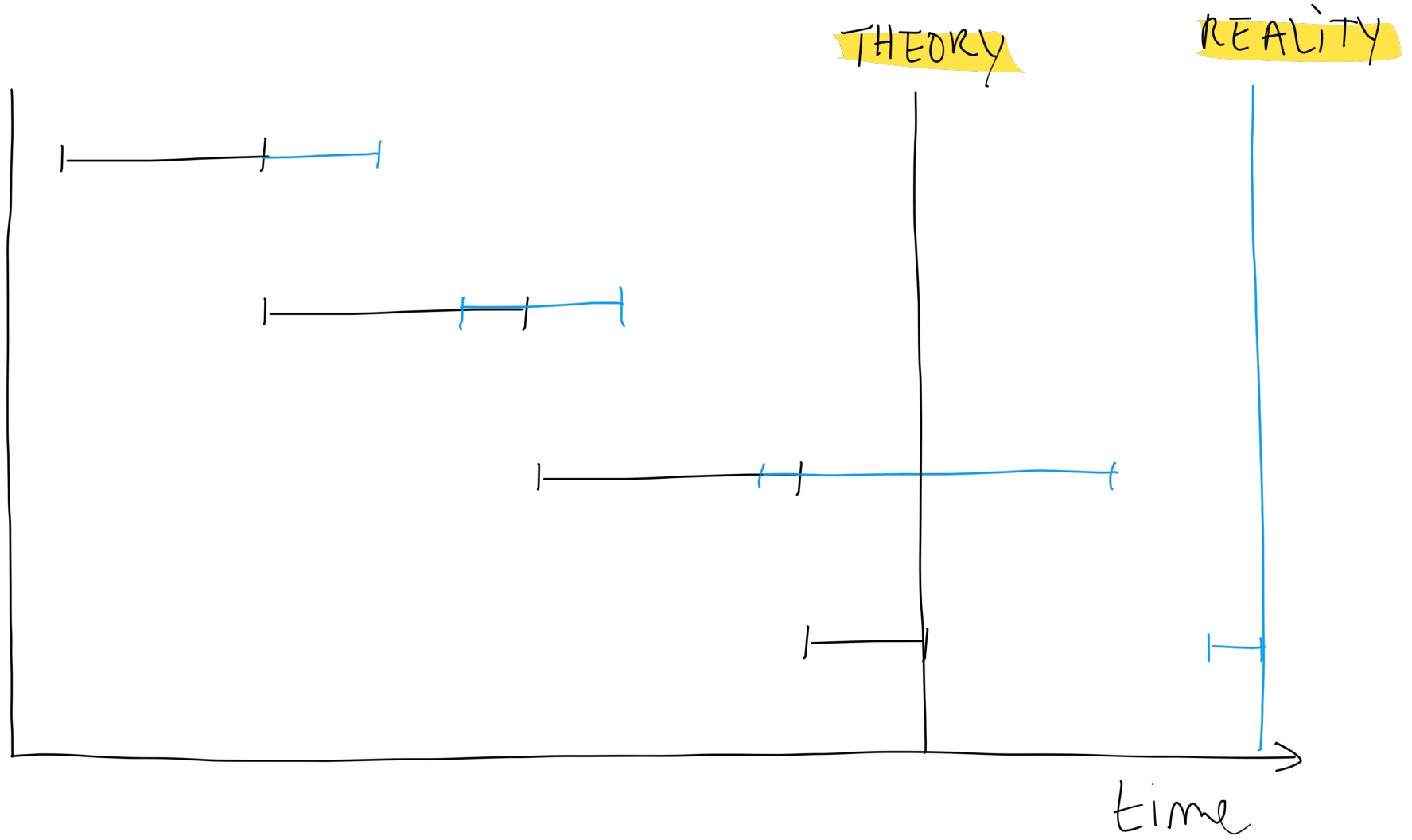
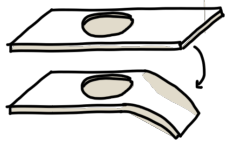
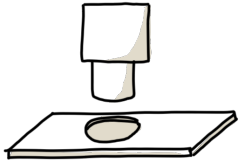
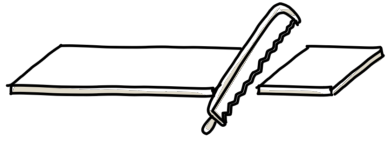
MILLING

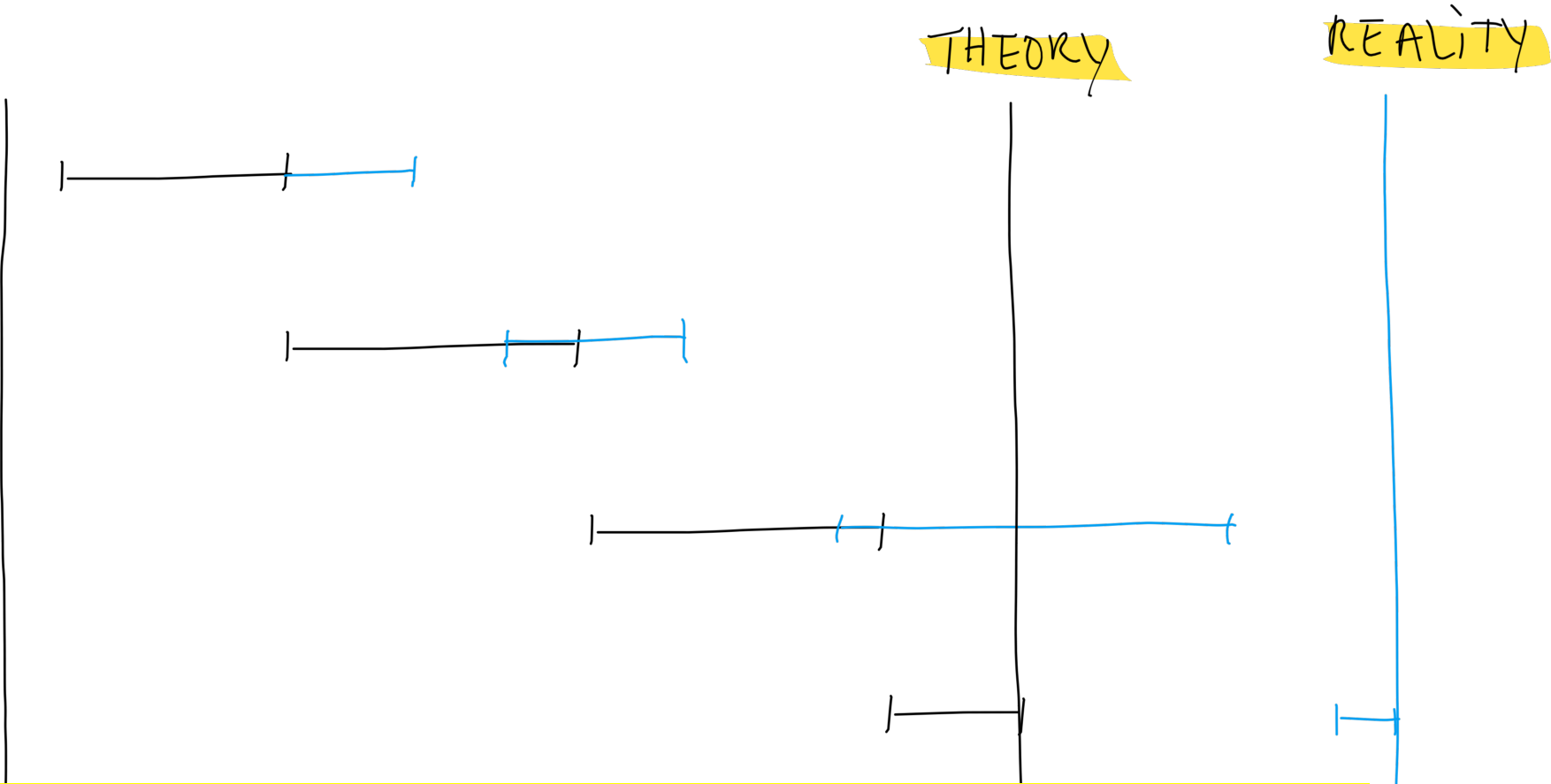
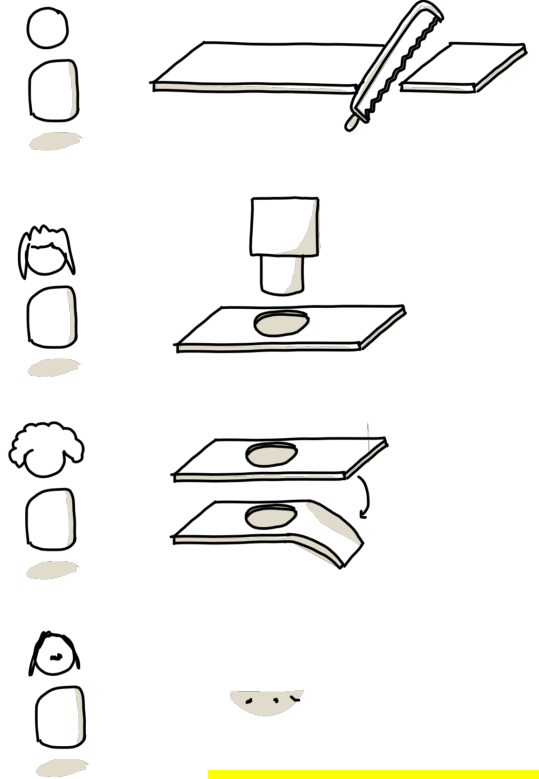


BENDING

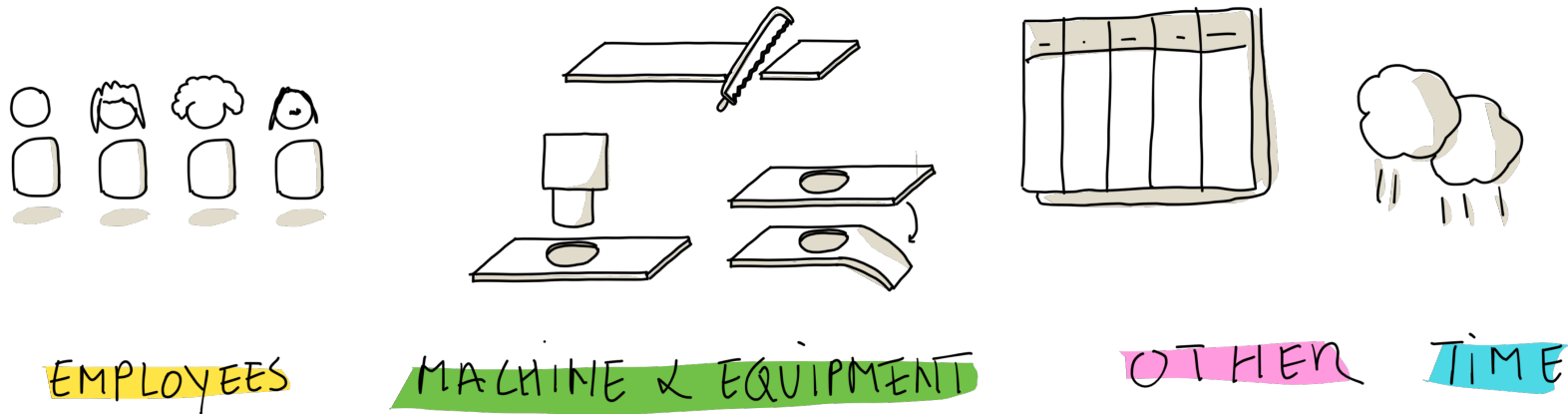






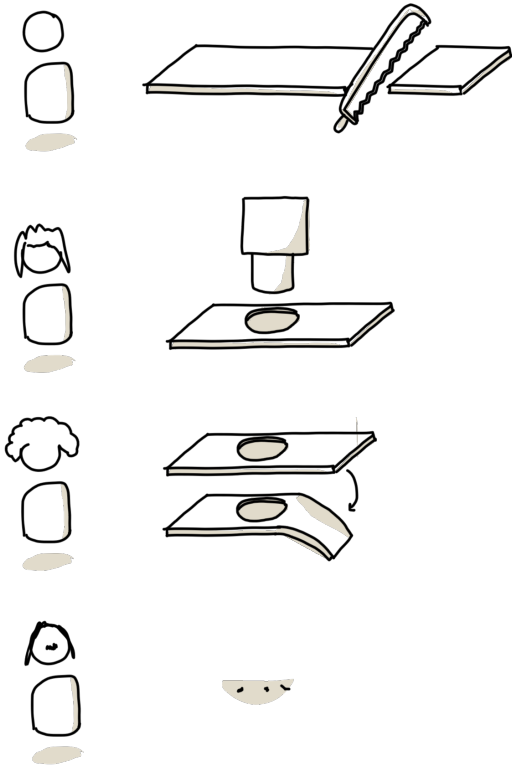


Q: Make the Production Planning More Accurate

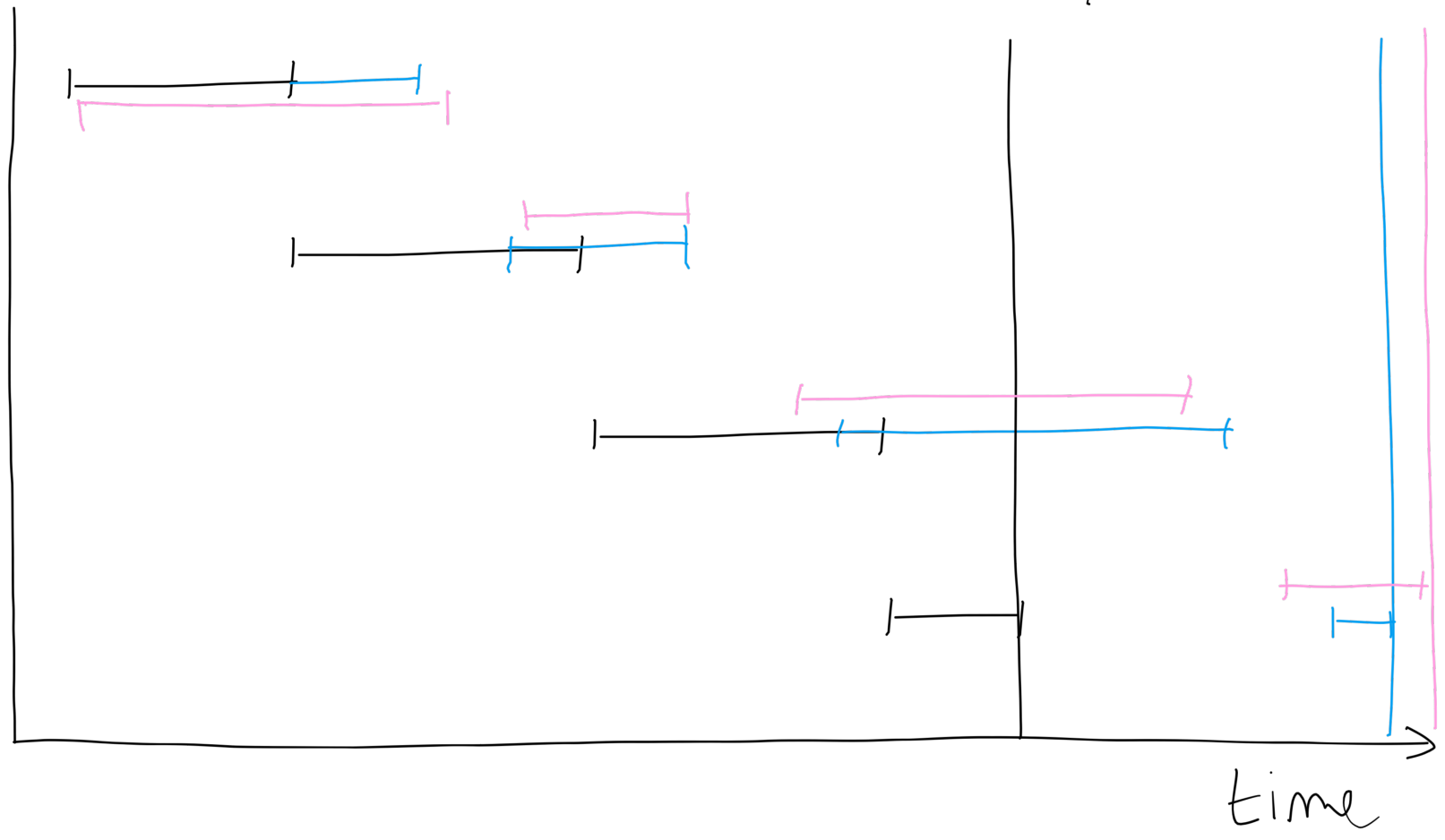


EMPLOYEES	MACHINE & EQUIPMENT	OTHER	TIME

$$\times \text{GBOOST}(\text{yellow}, \text{green}, \text{pink}) = \text{blue}$$

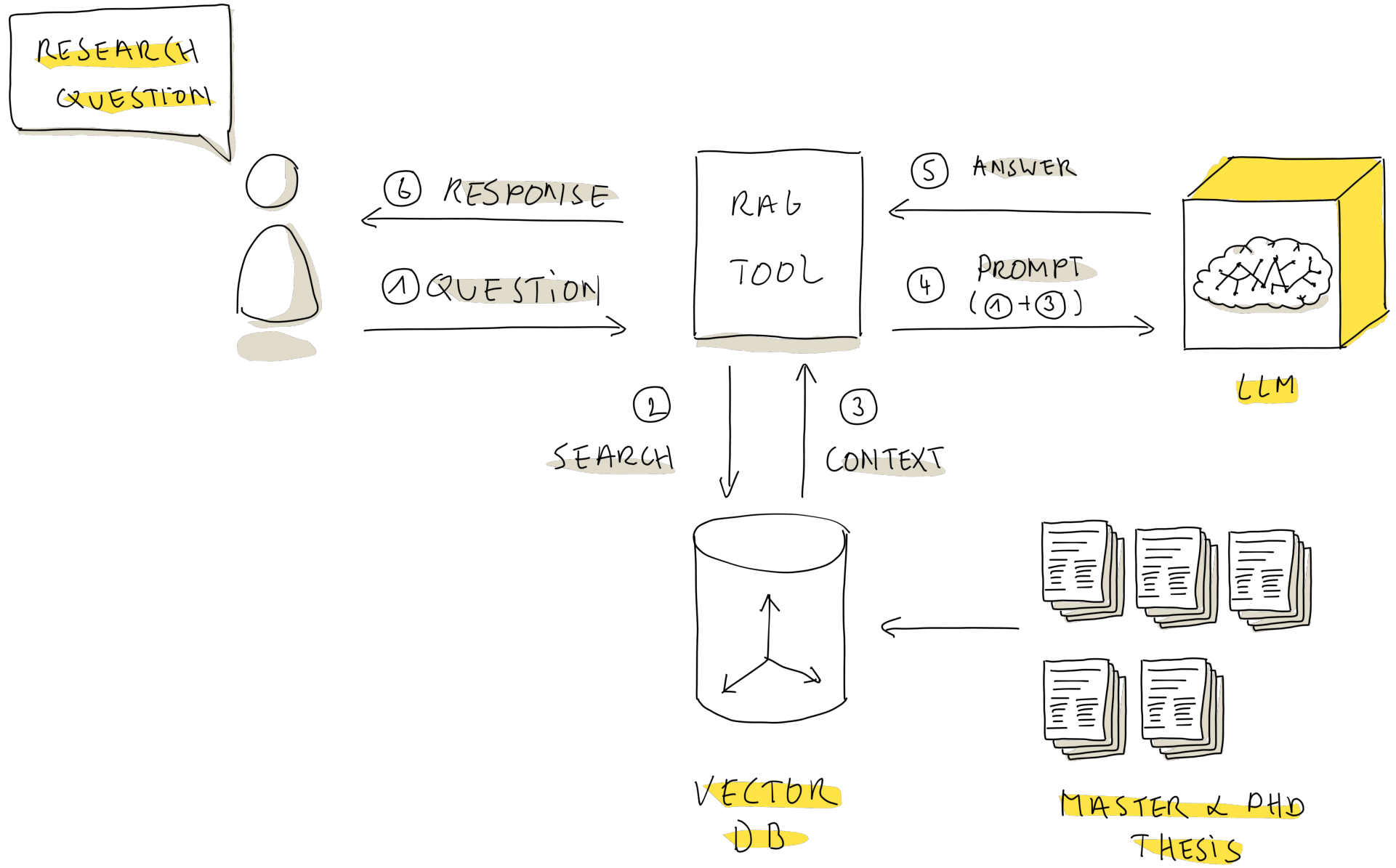


THEORY REALITY XGBOOST





Stimulate Innovation





Hello, my name is Brian and I will be your personal assistant. How can I help you?

What is the most sustainable way to create car batteries?



According to the snippets provided, the most sustainable way to create car batteries is by incorporating a circular economy approach and sustainable supply chains. This includes using renewable energy in the production process, increasing the round-trip efficiency of the battery system, and sourcing materials like nickel and cobalt from sustainable suppliers. Additionally, integrating recycling of the battery pack at the end of its life can further reduce the environmental impact. By implementing these strategies, battery manufacturers can work towards providing sustainable car batteries for electric vehicles.

Source(s):

- [Making Space Exploration Sustainable: A Quantitative Assessment of Valuable Elements for Implementation of In-Situ Utilisation of Lunar Resources](#)
- [Renewable energy: A continuation of neocolonialism? Research about indications within the increasing demand for renewable energy.](#)
- [Life Cycle Assessment of a Lithium-Ion Battery pack for Energy storage Systems: - the environmental impact of a grid-connected battery energy storage system](#)
- [Pre-feasibility study of V2G system in the micro-grid of St. Martine Island, Bangladesh.](#)

Type your message here...





Table of Contents – Day 1

- Introduction
- History of AI
- AI Capabilities
- AI Models
- Quality of AI Models
- Generative AI
- Use Cases
- **AI Breakthroughs and Trends**
- Agenda for Day 2



NoteBookLM: Generation of Podcasts

The screenshot shows the NotebookLM interface. On the left, there is a sidebar with the text 'NotebookLM', 'Sources', and 'Select all sources'. The main area is titled 'Untitled notebook' and contains an 'Add note' button. A modal window is open in the center, titled 'NotebookLM', with a close button (X) in the top right corner. The modal has a back arrow and the text 'Website URL'. Below this, it says 'Paste in a Web URL below to upload as a source in NotebookLM.' There is a text input field with a placeholder 'Paste URL*' and the value 'https://www.voka.be/'. Below the input field, there is a section titled 'Notes' with two bullet points: 'Only the visible text on the website will be imported at this moment' and 'Paid articles are not supported'. At the bottom right of the modal is a blue 'Insert' button. At the bottom of the interface, there is a status bar with 'View Chat', '0 sources Upload a source to get started', and 'Notebook guide'.

NotebookLM

Untitled notebook

Sources

Select all sources

Add note

NotebookLM

← Website URL

Paste in a Web URL below to upload as a source in NotebookLM.

Paste URL*

https://www.voka.be/

Notes

- Only the visible text on the website will be imported at this moment
- Paid articles are not supported

Insert

View Chat

0 sources Upload a source to get started

Notebook guide

NotebookLM may still sometimes give inaccurate responses, so you may want to confirm any facts independently.



NoteBookLM: Generation of Podcasts

NotebookLM | Untitled notebook | Settings | Share | Profile

Sources

Select all sources

Voka - Vlaams netwer...

Add note

* Notebook guide

Help me create

FAQ | Study Guide | Table of Contents | Timeline | Briefing Doc

Audio Overview ⓘ

Deep dive conversation
Two hosts (English only)

Customize | **Generate**

Suggested questions

- What are the key challenges facing businesses in Flanders and how is Voka advocating for solutions?
- How does Voka connect businesses in Flanders, and what are the benefits of being a member?
- What are Voka's priorities for the future of the Flemish economy, and how do they plan to achieve them?

Summary

Voka is the largest business network in Flanders, Belgium. It is dedicated to supporting the growth of businesses in the region. Voka offers a range of services, including advocacy for businesses, networking opportunities, and training. The website highlights Voka's recent activities and publications, including articles on important economic topics. Voka also promotes its regional chapters and encourages users to register on the website for access to additional resources.

View Chat | 1 source | Start typing... | | * Notebook guide

NotebookLM may still sometimes give inaccurate responses, so you may want to confirm any facts independently.



OpenAI/whisper





vri nws



[00:00.000 --> 00:08.000] Ik zeg een dag, ik ben Gerrit Kallewaard, de behalvekoven deelgemeente van Adelbee in West-Vlaming. 

[00:08.000 --> 00:10.000] En ik zou vrij enig het volgende willen zeggen.

[00:10.000 --> 00:15.000] Dat dankt mij dus echt mijn kerel uit, dat alle minuten dat er dan in West-Vlaming op de televisie komt,

[00:15.000 --> 00:17.000] dat ze daar echt titels moeten onderzetten.

[00:17.000 --> 00:22.000] Ik vind dat echt een schande, dat dat zoveel of de West-Vlaming weer achteruit steken. [00:22.000 --> 00:24.000] Nu zijn we er vrij goed te verstaan.

[00:24.000 --> 00:29.000] Het akkoord dat we er al een keer een woordje anders plaatsen, of we kunnen een draai geven aan bepaalde klanken.

[00:29.000 --> 00:34.000] Maar als je nu een beetje meer ervoor doet, dan is het natuurlijk dat we het wel moeten doen om naar een Antwerpener of een Lemberger te luisteren.

[00:34.000 --> 00:36.000] Dan zijn we er vrij goed te verstaan.

[00:36.000 --> 00:44.000] Dus als ik zo'n app op wil doen aan al de maatjes van de televisie, doe gewoon, neem je er niet voor en zet dan geen titels meer onder.

STATE OF AI REPORT 2024.

The **State of AI Report** analyses the most interesting developments in AI. We aim to trigger an informed conversation about the state of AI and its implication for the future. The Report is produced by AI investor [Nathan Benaich](#) and [Air Street Capital](#).

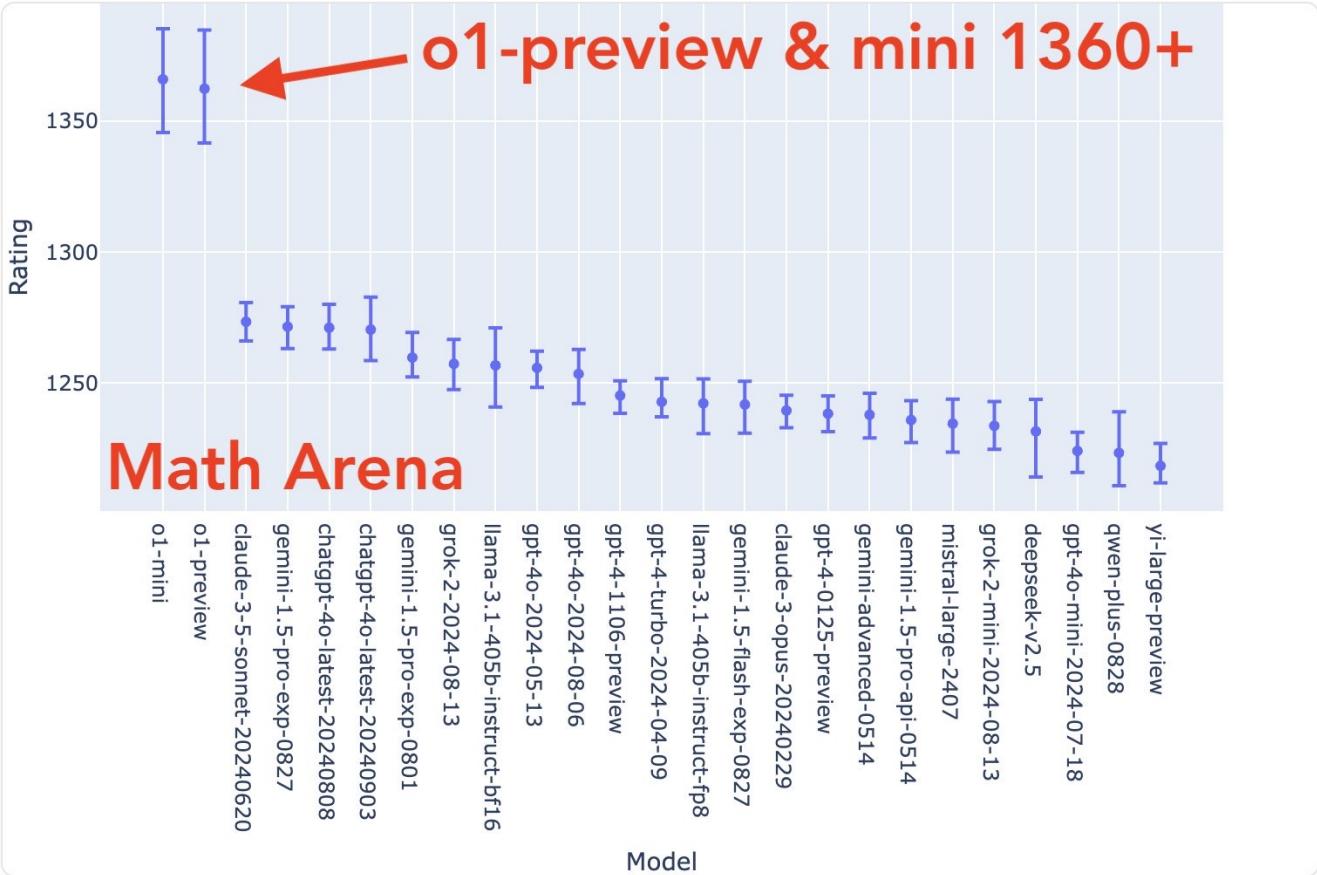




New generation OpenAI Models *that can Reason*

More Statistics for Chatbot Arena - Math

Figure 1: Confidence Intervals on Model Strength (via Bootstrapping)



ChatGPT 4o ▾

Model ⓘ

GPT-4o
Uitstekend voor de meeste taken

GPT-4o with canvas BÈTA
Samenwerken bij schrijven en programmeren

o1-preview
Gebruikt geavanceerd redeneren

o1-mini
Sneller in redeneren

Meer modellen >

Tijdelijke chat

High-Quality Video Generation (Stable Video Diffusion)



"A robot dj is playing the turntables, in heavy raining futuristic tokyo, rooftop, sci-fi, fantasy"



"An exploding cheese house"



"A fat rabbit wearing a purple robe walking through a fantasy landscape"



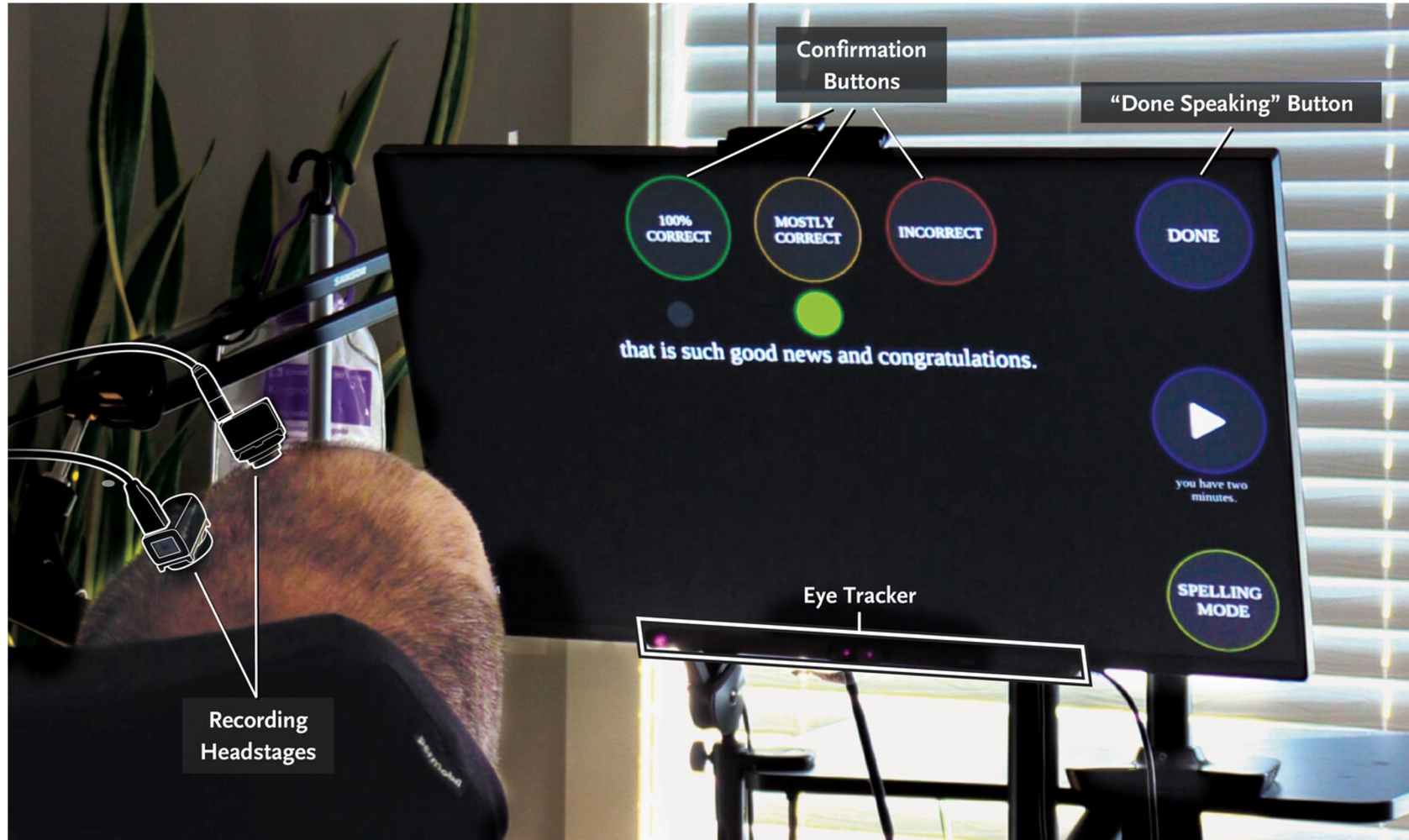
"A tiny finch on a branch with spring flowers on background"



"A steam train moving on a mountainside by Vincent van Gogh"



Speaking what you think





Self-Driving Cars are *not yet Perfect*



Waymo has gradually scaled in San Francisco, Los Angeles, and Phoenix

Autos & Transportation | Product Liability | ADAS, AV & Safety | Software-Defined Vehicle | Manufacturing

GM's Cruise recalling 950 driverless cars after pedestrian dragged in crash

GM's self-driving car division is under investigation by DOJ and SEC after pedestrian dragging incident

TECH- CRUISE LLC

In a single night, self-driving startup Cruise went from sizzling startup to cautionary tale. Here's what really happened—and how GM is scrambling to save its \$10B bet

BY **JESSICA MATHEWS**
May 16, 2024 at 1:00 PM GMT+1



Self-Driving Cars are *not yet Perfect*

The Curious Case of Netflix's AI-Infused Documentary 'What Jennifer Did'

'What Jennifer Did' sets an odd and upsetting precedent for the use of AI in documentaries.

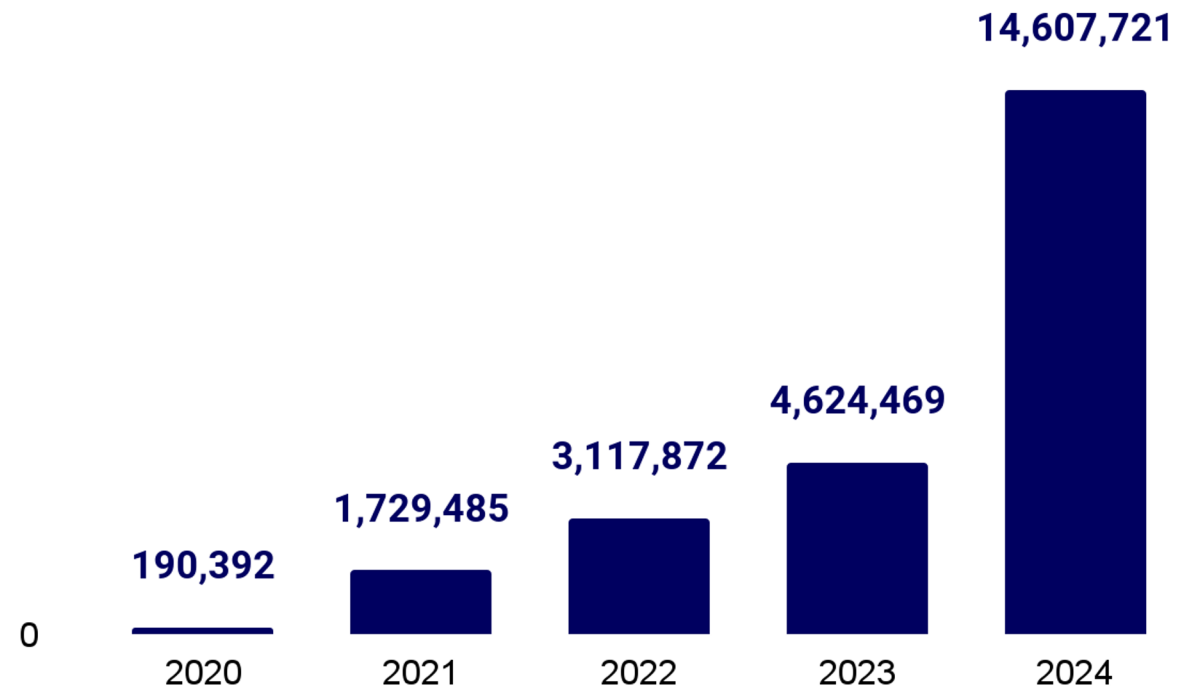


DAVID CHEN
APR 19, 2024





Synthesia disrupted the world of Video Editing





Workspace FREE

New video

AI video assistant

Turn any source material into a video in minutes

File
URL
Prompt

Welcome to this value from AI training for VOKA West-Flanders.

Template

Modern Marketing Landscape

Length

8 scenes

Audience

Company employees

+ Objective
+ Language
+ Speaker

+ Tone

Generate again

< 1/1 >
👍 👎
Continue in editor

Scene 1

Welcome to this value from AI training for VOKA West-Flanders. In this session, we will explore how artificial intelligence can enhance business operations and drive innovation. Our goal is to equip you with the knowledge to leverage AI effectively.

Scene 2

Artificial intelligence is transforming industries by automating tasks and providing data-driven insights. For companies, this means increased efficiency and the ability to make informed decisions quickly. Understanding AI's potential is crucial for staying competitive in today's market.

Scene 3

In this training, we'll cover the basics of AI, including machine learning and data analytics.

Bright Sales Out

Editable screen recordings in minutes.
Try AI Screen Recorder
My recents
?

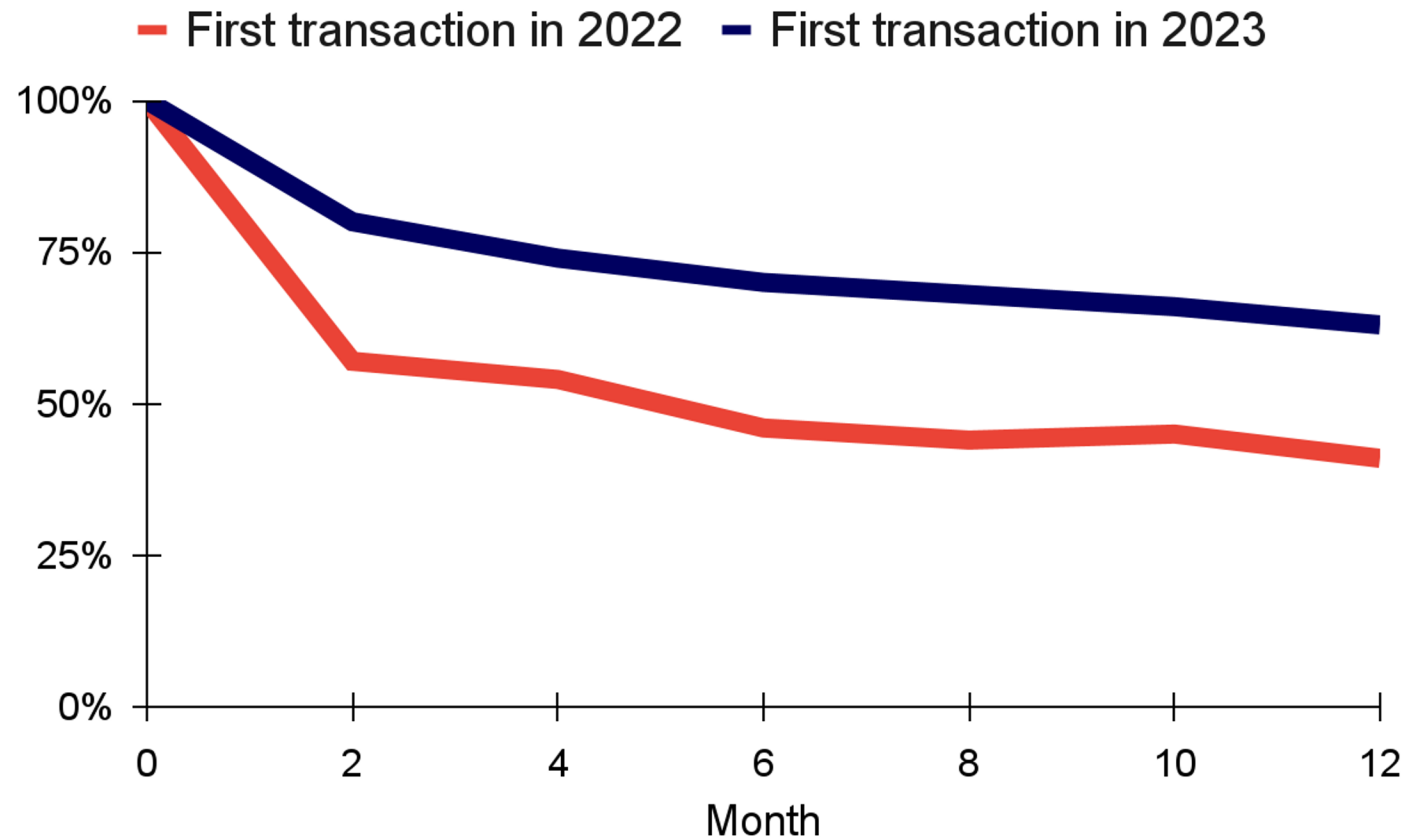


 logo





AI-first products begin to demonstrate their *stickiness* in enterprise





Big US lab struggle to navigate EU Act regulations

Jul 17, 2024 - Technology

Scoop: Meta won't offer future multimodal AI models in EU



Ina Fried



Illustration: Sarah Grillo/Axios

Apple Won't Roll Out AI Tech In EU Market Over Regulatory Concerns

- Company plans to withhold Apple Intelligence from EU this year
- Big Tech company cites worries over EU's Digital Markets Act

Announcements

Claude is now available in Europe

14 May 2024 • 1 min read



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Program

DAY 1

Background about
AI, Models and Use
Cases

*Where might AI be
usefull in your
business?*

DAY 2

Value from AI

Use Case
Development



Questions?



[linkedin.com/in/janmeskens](https://www.linkedin.com/in/janmeskens)



medium.com/@meskensjan



www.sievax.be



jan@sievax.be