Webinar

AI, IT and data fundamentals.

Arkam Ograk, Janne Kiilunen, Rafael Agostinho| Interact | 12.06.2024

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Agenda

01	02	03	04	05
Intro: How to make the most of this webinar	IT and data, concepts and management	Comfort break	AI, concepts and use	Closure

Webinar: AI, IT and data fundamentals

Intro: How to make the most of this webinar

Interact | 12.06.2024

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How to make the most of this webinar

What this webinar is not (and what this webinar is)

Not about making you an expert in IT or web or data management issue.
Instead, it's about helping you to better work with IT, web and data management issues.

Not meant to give you any theoretical corpus for you to increase academic knowledge.
Instead, it is meant to give you working concepts to better understand web and data management.

Not a typical Interact event.
Instead, it's a webinar about key concepts. After the presentations, there will be Q&As.

How to make the most of this webinar

Goals of this webinar

To give you a practical understanding of concepts that can potentially make your life easier while making you also more productive.

To help you better understand some buzzwords that are not part of your everyday life.

How to make the most of this webinar

How it will be delivered (and how you can manage your participation and your time) 1/2

Each presenter introduces a concept and shows examples. The examples will come mainly from:

keep.eu

Website aggregating data and documents from Interreg, since 2000. Users can easily get the exact data that they need through many filters. Data is on programmes, projects, project partners and statistics on Interreg in any country or region.

AI is increasingly finding its way into our lives as different services we use integrate AI technologies. A terminology is developing around the use of AI tools and their use for different purposes. Interreg is not spared.

How to make the most of this webinar

How it will be delivered (and how you can manage your participation and your time) 2/2

Each presenter introduces a concept and shows examples.

Please write your questions or requests in the chat.

After each block of presentations we will answer your questions.

You do not need to take notes because we will make our presentations available to you.

Please keep your microphone muted until the moderator gives you the floor.

You can opt for following only a few of the concepts that interest you the most and not all (should there be no FOMO – Fear of Missing Out).

How to make the most of this webinar

Who will be delivering it

Arkam Ograk
Education: Communications (BA), EU Politics (MA). Before joining Interact: Interreg programmes and EU-funded projects.

Janne Kiilunen (keep.eu)
Education: Telecommunications. Before joining Interact: Telecommunications (coordination, project planning and software specialist work).

Rafael Agostinho (keep.eu)
Education: Communication, management. Before joining Interact: Communications, project manager, management consultant.

How to make the most of this webinar

Contents 1/2

- Big data, open data
- Database, data lakes, data warehouses
- Cloud computing (hosting, maintenance)
- Data pipelines
- Data structures (structured, semi-structured), SQL, JSON, XML
- Data synchronization (staging, production environments)
- APIs
- Data mining
- SLAs

How to make the most of this webinar

Contents 2/2

- The hype
- The market landscape
- What does Generative AI generate?
- LLMs
- Text-to-image models
- Stable Diffusion
- AGI
- Prompting, „prompt engineering“
- Diversity fine tuning, deep learning, machine learning
- Grounding
- Commands, parameters
- Image editing terminology: upscaling, inpainting, generative fill, outpanting, zoom out, blending, seed, steps, etc
- Known issues & legal aspects

Webinar: AI, IT and data fundamentals

Data, big data, open data

Rafael F. Agostinho | 12.06.2024

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Data, big data, open data

Data: Binary values (1s and 0s) that can be turned into information through interpretation.

1 bit	=	Minimum unit of data	
8 bits	=	1 byte (B)	= 1 ASCII character (e.g. one letter)
1024 bytes	=	1 KB	
1024 KB	=	1 MB	
1024 MB	=	1 GB	
1024 GB	=	1 TB	
1024 TB	=	1 PB	

Data, big data, open data

Example of data (keep.eu).

4 713	7 159	66%	6 594	7 057	93%	5 618	5 618	100%	510	1 503	34%
723	723	100%	973	973	100%	1 323	1 323	100%	191	697	27%
363	363	100%	333	333	100%	414	415	100%	102	252	40%
828	939	88%	1 068	1 070	100%	934	934	100%	0	23	0%
201	253	79%	197	285	69%	401	402	100%	0	50	0%
675	799	84%	633	802	79%	784	784	100%	45	55	82%
7 503	**10 236**	**73%**	**9 798**	**10 520**	**93%**	**9 474**	**9 476**	**100%**	**848**	**2 580**	**33%**

Data, big data, open data

Example of data (keep.eu).

Programme type/programming period	2000-2006			2007-2013			2014-2020			2021-2027		
	In keep.eu	Overall	%	In keep.eu	Overall	%	In keep.eu	Overall	%	In keep.eu	Overall	%
Cross-border (internal)	4 713	7 159	66%	6 594	7 057	93%	5 618	5 618	100%	510	1 503	34%
Transnational	723	723	100%	973	973	100%	1 323	1 323	100%	191	697	27%
Interregional	363	363	100%	333	333	100%	414	415	100%	102	252	40%
Cross-border (neighbouring)	828	939	88%	1 068	1 070	100%	934	934	100%	0	23	0%
Outermost regions	201	253	79%	197	285	69%	401	402	100%	0	50	0%
Cross-border (pre-accession)	675	799	84%	633	802	79%	784	784	100%	45	55	82%
Total	**7 503**	**10 236**	**73%**	**9 798**	**10 520**	**93%**	**9 474**	**9 476**	**100%**	**848**	**2 580**	**33%**

Data, big data, open data

Big data are datasets that are too large or too complex to be dealt with by traditional data-processing software. Most literature describes big data according to the following Vs:

Volume: In the order of terabytes and petabytes.

Variety: Big data draws from text, images, audio, video - and their combination.

Variability: The combination of structured and unstructured data and the transformation of unstructured into structured data, in a permanent motion.

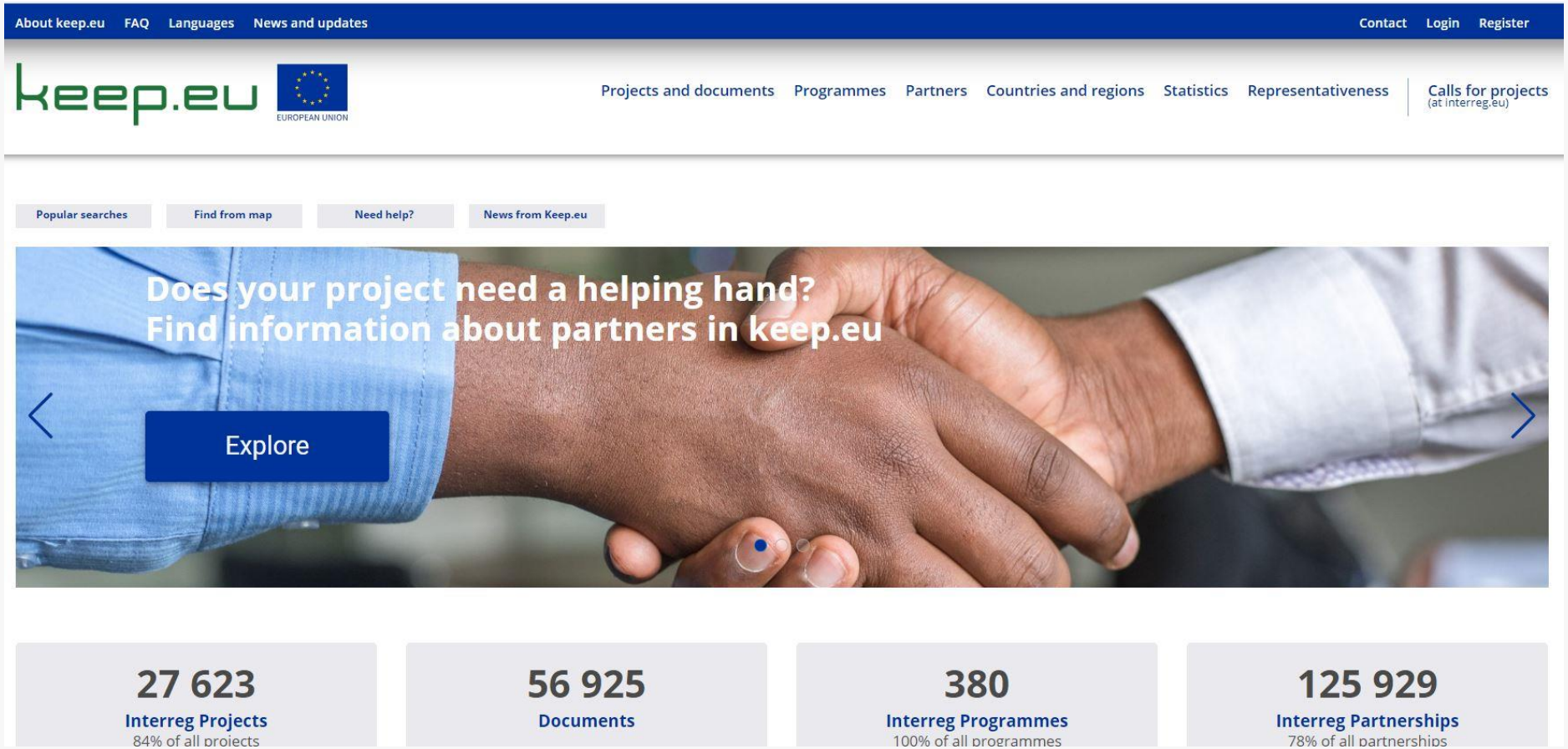
Velocity: Big data is more often than not available in real-time.

Veracity: The value of big data lies in its reliability.

Value: Not only reliability and velocity but also intent. Combined, they lead to profitability.

Data, big data, open data

Is keep.eu big data?



Data, big data, open data

Is keep.eu big data?

- ✗ **Volume**: Billions of records, >100 GB
- ✓ **Variety**: Texts, documents (images and other files).
- ? **Variability**: To some extent (qualitative into quantitative)
- ✗ **Velocity**: There is latency (data from the field in keep.eu days after collection)
- ✓ **Veracity**: The reliability of the data is assessed & published continuously
- ✗ **Value**: No **direct** value

Data, big data, open data

Is keep.eu big data? No

Data, big data, open data

Open data: Content that is free for anyone to use, re-use or redistribute, subject at most to the need to preserve provenance and openness.

Data, big data, open data

Open data: Content that is free for anyone to use, re-use or redistribute, subject at most to the need to preserve provenance and openness.

Two dimensions of data openness: Legal and technical.

Read more (including about open data licenses) at the Open Knowledge Foundation or the World Bank.

Data, big data, open data

Open data, example from keep.eu (legal)

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Data, big data, open data

Open data, example from keep.eu (legal)

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Home / Projects and documents

Search results: Projects and their documents

Click on any entry below to get to the full data on a project and its partners, or export the table below to Excel and get aggregated data on all projects, partners and calls.

Export all project data from your search results to Excel

Export list of all documents and their links from your search results to Excel

Modify search

Download map image

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Summary of search results

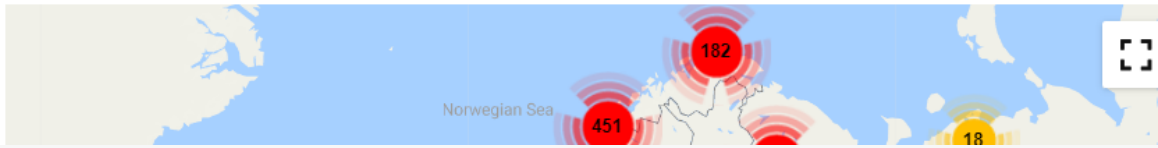
28 209 projects | 56 896 documents | 81 295 partners | 126 835 partnerships | 322 programmes

This summary reflects the data available in keep.eu. To understand how representative keep.eu is, please refer to Representativeness.

Change to alphabetical order of programme name

Showing most recent first

All partnerships map Heat map



SA GOVERNANCE

2021 - 2027 Interreg VI-A IPA Italy Albania Montenegro (South Adriatic)

Innovation capacity and awareness-raising

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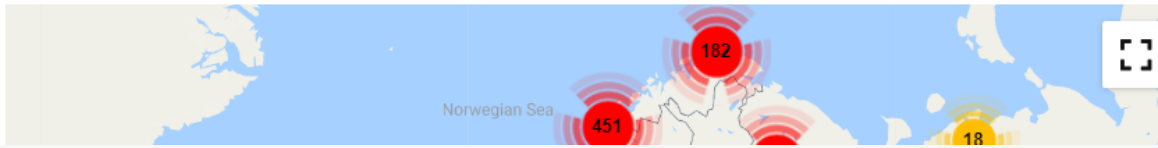

SA GOVERNANCE

2021 - 2027 Interreg VI-A IPA Italy Albania Montenegro (South Adriatic)

Innovation capacity and awareness-raising

Webinar: AI, IT and data fundamentals

Databases, data warehouses, data lakes

Rafael F. Agostinho | 12.06.2024

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Databases, data warehouses, data lakes

Database (DB): Very general term applied to more or less organised repositories of data that can be accessed by computers

Data warehouse: Stores mainly structured data and is usually optimized for data analysis, or deriving information from data (transactional data)

Data mart: The scaled-down version of data warehouses to meet the data needs of small groups of users with similar data needs (e.g. the finance, marketing departments of an organisation…)

Operational data store (ODS): Receives the operational data from the transactional sources and only provides access to the current, non-aggregated data (also feeds transactional DBs)

Data lake (came with the big data and analytics trends): Stores all data types, also raw data, it is very big (can be in the order of pentabytes, or millions of Gigabites).

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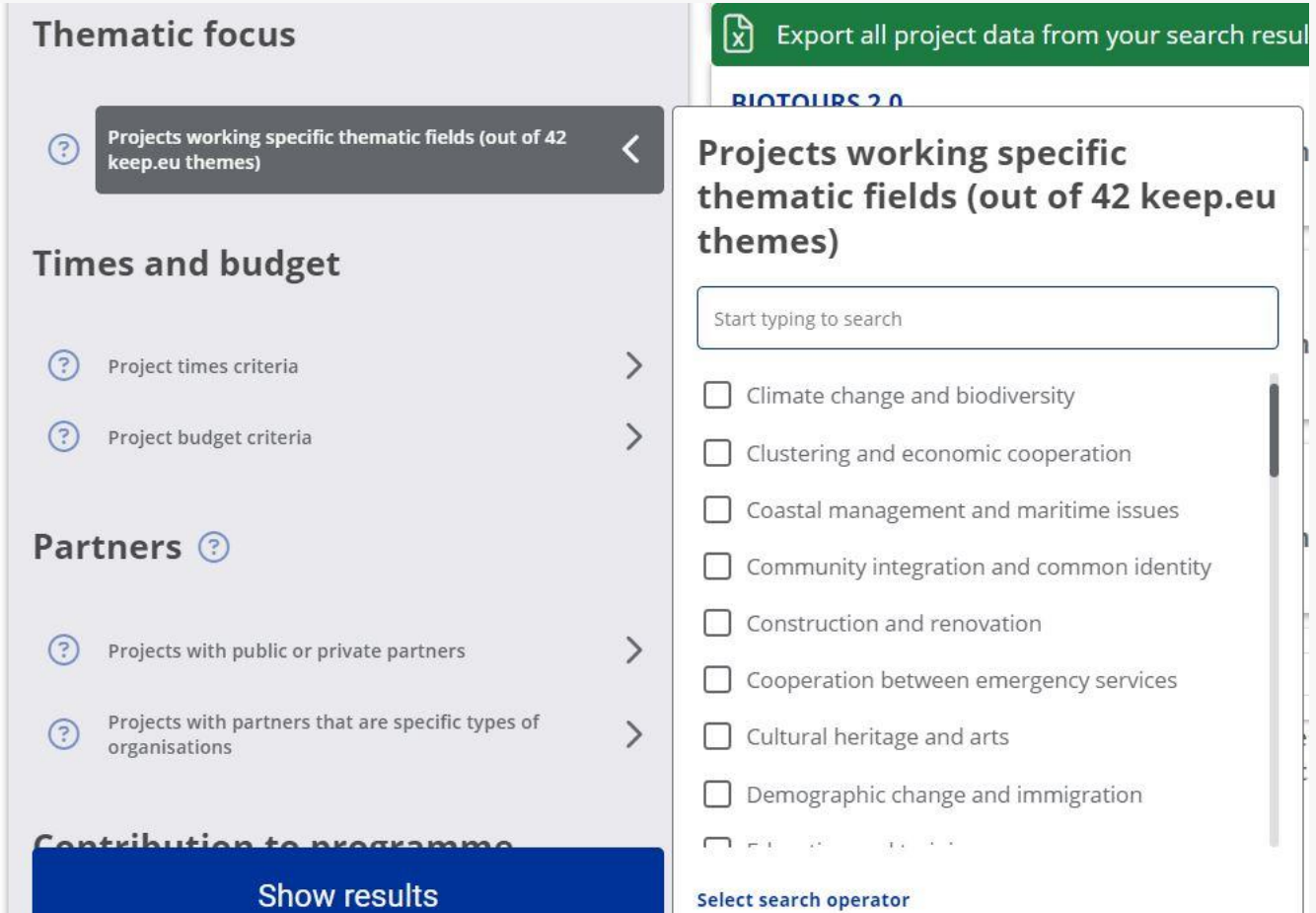
Databases, data warehouses, data lakes



Data warehouse: Data in keep.eu is cleaned and standardised

Databases, data warehouses, data lakes

Data warehouse: E.g., data in keep.eu is cleaned and standardised

Operational data store (ODS): POS.

Data lake (came with the big data and analytics trends): E.g., all project documents in keep.eu

Webinar: AI, IT and data fundamentals

Cloud computing

Janne Kiilunen | 12.06.2024

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Cloud computing

Local computing

- Buy physical machines and services
- **Own physical machines and services**
- Maintain physical machines and services

Cloud computing

Cloud computing

- Delivery of computing services over the internet
- **Servers, storage, databases, networking, software, analytics and intelligence**
- Flexible resources
- Paying typically only for the services in use
- Scalability

Cloud computing -examples

SaaS (Software as a service)	Microsoft Office 365, Google docs
Web hosting	Websites
Cloud storage	Dropbox, iCloud, Google drive, Microsoft One drive
Servers	Jems installation

Webinar: AI, IT and data fundamentals

Data pipelines

Janne Kiilunen | 12.06.2024

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Data pipelines

Basic definition

A pipe that receives something from a source and carries it to the destination

Source

May include multiple sources, e.g. CSV files, emails, database

Destination

Data store or analytics application

Transformation

Operation that changes the data. May include standardization, sorting, validation and verification.

Processing

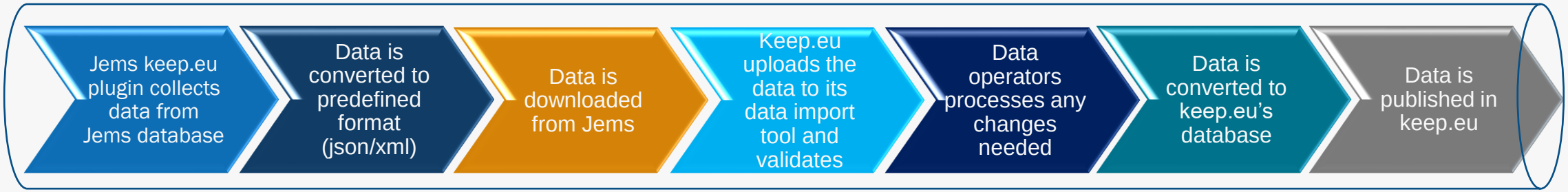
“Batch processing” = data is collected periodically and sent to the destination.
“Stream processing” = “real time”.

Monitoring

Monitoring: To ensure data integrity, e.g. source or destination is offline

Data pipelines –keep.eu example

Type of data pipeline = ETL (Extract, Transform, Load)



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Data structures

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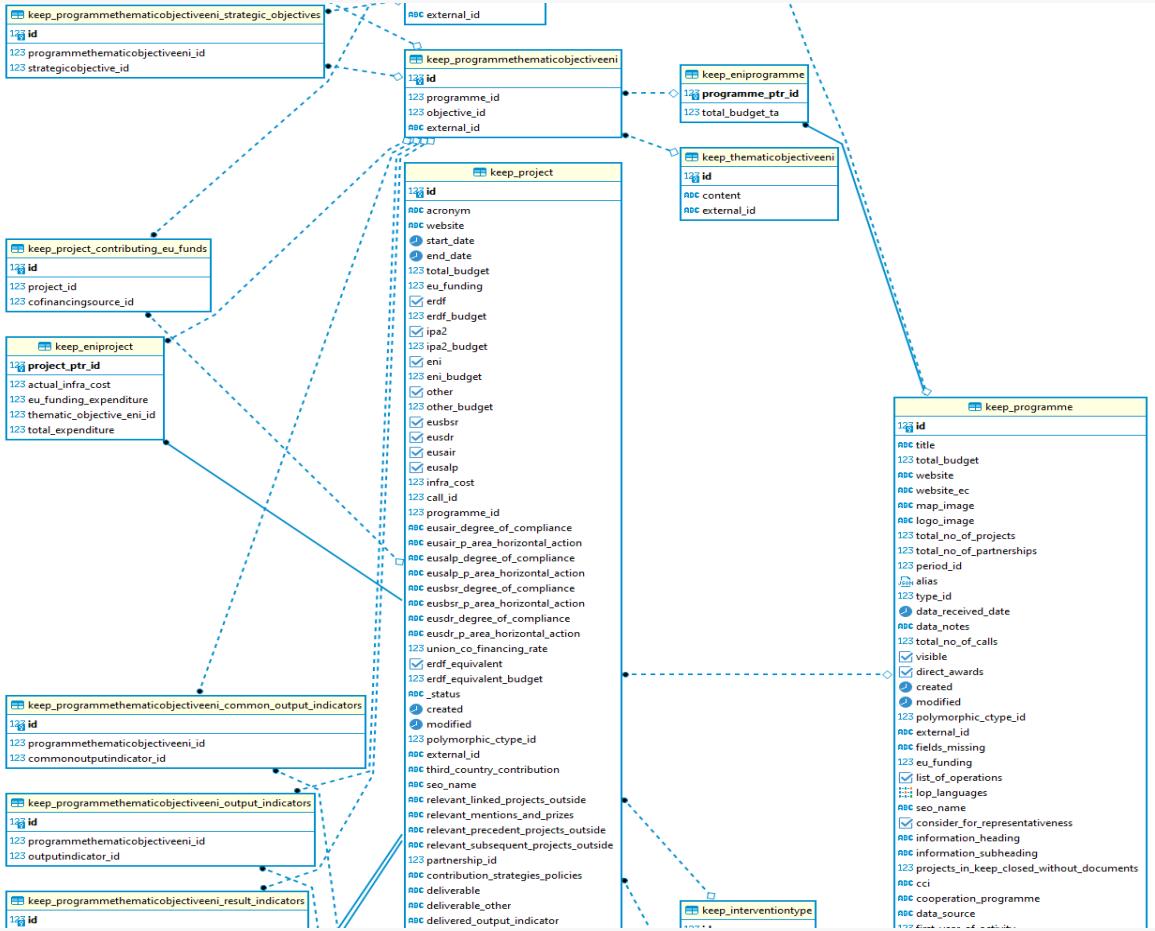
Data structures (structured, semi-structured)

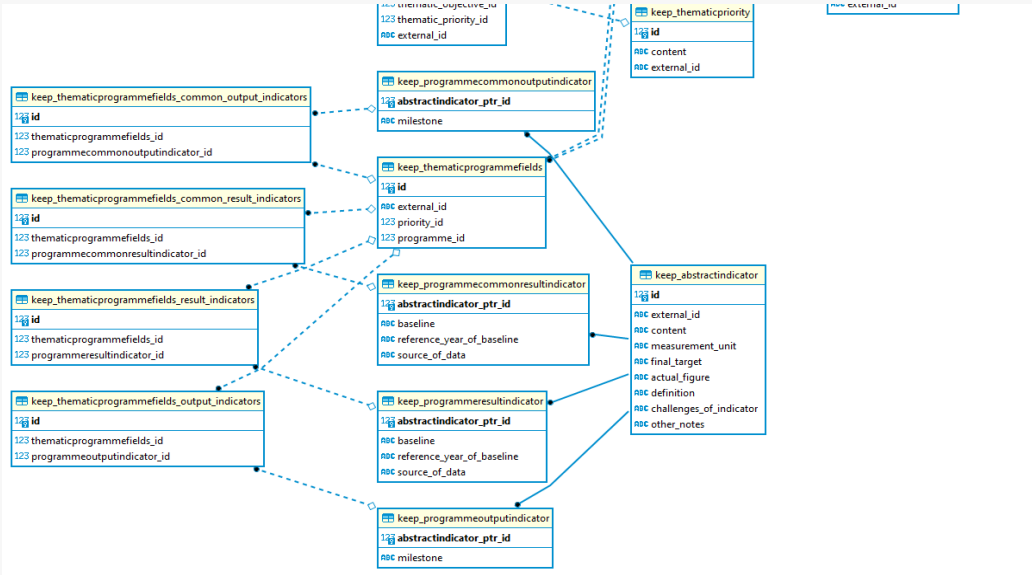
Structured data	Data whose elements are addressable for effective analysis. It has been organized into a formatted repository that is typically a database. Example: Relational data, e.g. Excel
Semi-Structured data	Data is information that does not reside in a relational database but that has some organizational properties that make it easier to analyse. Example: XML data
Unstructured data	Data which is not organized in a predefined manner or does not have a predefined data model. Example: Word, PDF, Photos, Text

Data structures (structured, semi-structured)

SQL	Structured Query Language, Programming language for accessing and manipulating databases.
JSON	JavaScript Object Notation, lightweight data-interchange format used to send data between computers, human readable
XML	Extensible markup language, A markup language is a set of codes (tags), that describes the text in a digital document.

Data structures –keep.eu example





Webinar: AI, IT and data fundamentals

Data synchronisation

Janne Kiilunen | 12.06.2024

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Data synchronisation

Updating changes between applications to maintain consistency.

Production

Test environment

Data synchronisation – keep.eu

Keep.eu has test (staging) environment and production environment.

Test environment is used as a *playground* where any new features or actions can be tested with real data without impact to production.

Production

Test environment

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API

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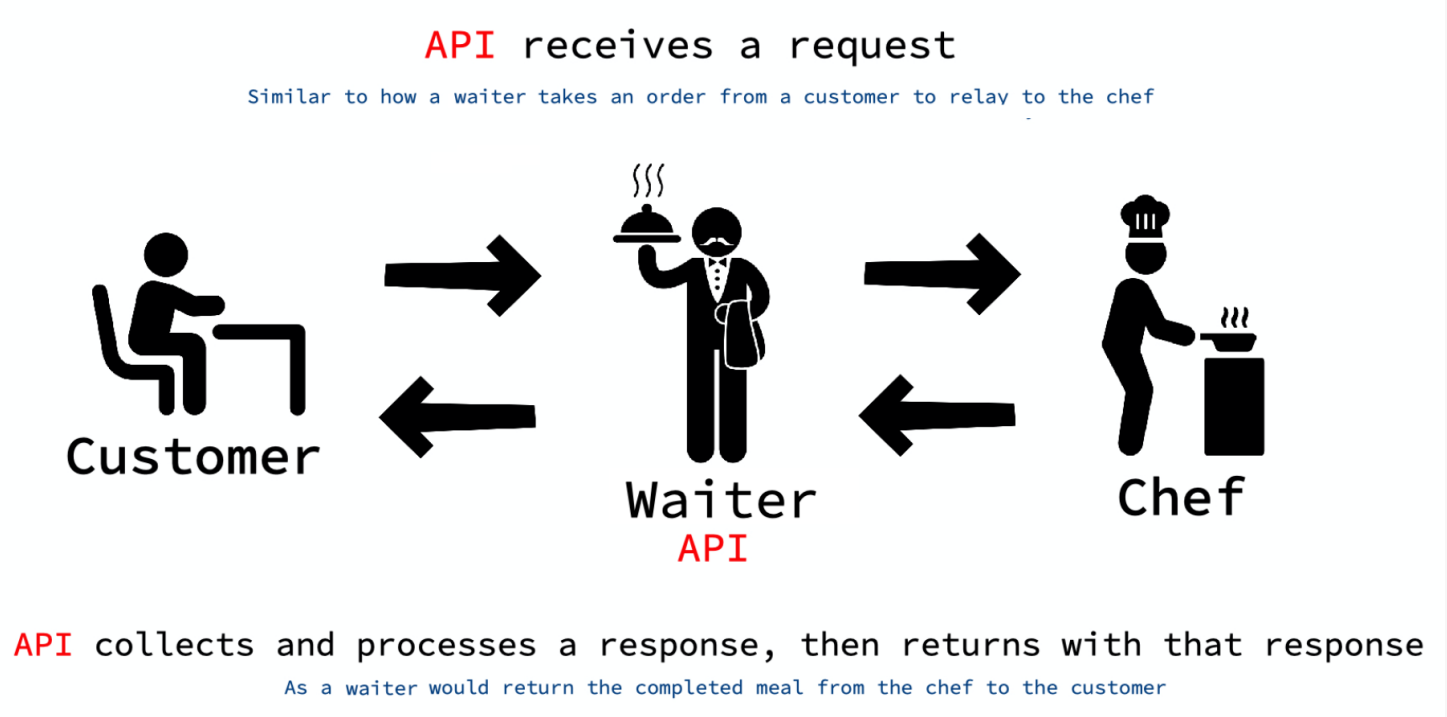
API

An application programming interface (API) is a way for two or more computer programs to communicate with each other



API examples

Travel bookings	Google flights, booking.com
Log-in to applications	Log-in with Facebook/Google
Online payments	Pay with PayPal

Webinar: AI, IT and data fundamentals

Data mining

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Data mining

Basic definition

Process of sorting through large datasets to identify patterns and relationships that can help solve problems through data analysis

Understand the need

What is the current situation and objectives for data mining needs

Understand the data

What kind of data is needed, collect from sources

Prepare the data

Data quality issues (duplicates, corrupted data), prepare in a suitable format

Model the data

Algorithms to discover data patterns. Create, test and evaluate

Evaluate the data

How the result will meet the goals

Deploy solution

Deliver results

Data mining examples

Shopping market analysis	Retailers to understand purchasing habits and offer other products the buyer is most probably to purchase
Weather forecast analysis	For prediction weather forecasting systems rely on massive amount of historical data
Banking, anti-fraud	Using data mining to understand market risks. Commonly used for credit ratings and intelligent anti-fraud systems to analyse transactions, card transactions, purchasing patterns and customer financial data.

Webinar: AI, IT and data fundamentals

SLAs: Service Level Agreements

Rafael F. Agostinho | 12.06.2024

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SLAs: Service Level Agreements

An SLA is a commitment between a customer and a service provider. It details the agreed aspects of the service – quality, availability, responsibilities.

SLAs: Service Level Agreements

An SLA is a commitment between a customer and a service provider. It details the agreed aspects of the service – quality, availability, responsibilities. A typical SLA includes the following:

Type of service to be provided.

The service's desired performance level, especially its reliability and responsiveness.

Monitoring process and service level reporting: How levels are supervised / monitored (statistics to be collected, frequency of collection and how to assess them).

The steps for reporting issues with the service: How to report any issue and the order in which details about the issue have to be reported.

Response time frame: The period by which the service provider will start the investigation of the issue.

Issue resolution time frame: Issue resolution time frame is the period by which the current service issue will be resolved and fixed.

Repercussions for the service provider not meeting its commitments.

SLAs: Service Level Agreements (example from keep.eu)

10 Service Levels

(1) Unless otherwise agreed, the supplier shall fulfil the following service levels. The service levels with penalties are calculated for each monthly period:

Indicator [a] [b] [c]	Agreed level
1. Acceptable published defects:	**a) Homepage (level 0 page)** Critical: 1 Major: 1 Minor: 2 Trivial: 3
Visible by any user of the website, regardless of being logged in or not, either by simply browsing the website or after a user operation is performed (any functions other than text, other than wrong data contents)	**b) Pages accessible directly from the home page (level 1 pages):**

SLAs: Service Level Agreements (example from keep.eu)

Indicator [a][b][c] ¶ ¤	Agreed level ¤	¤
	common to five or more pages ¤	¤
2. Acceptable published programme, project, partner or call defects (including geolocation mistakes, truncation of text, etc.), excluding those for which Supplier bears no responsibility. ¤	Per programme, project or partner page: ¶ Critical: 1¶ Major: 1¶ Minor: 2¶ Trivial: 3¶ NOTICE: In this case, severity level has to be understood in relation to the correct presentation of the most relevant information included in the page. ¤	¤
3. Whenever activities cannot be evaluated according to indicator 1, the level of accepted defects of a delivery per 1,000.00EUR, to be rounded up or down to the closest unit whenever there is a need ¤	Critical: 1¶ Major: 1¶ Minor: 3¶	¤

SLAs: Service Level Agreements (example from keep.eu)

Indicator [a] [b] [c] ¶ ¤	Agreed level ¤
4. Times for solving issues (in work hours, from 9:00 to 17:00 Finnish time, all weekdays except every 1 January, and every period from 24 to 26 December) (including any times of conference or answer from customer of up to 1 hour). ¤	Solving critical defects: 4 hours after reporting on Redmine ¶ Solving major defects: 8 hours after reporting on Redmine ¶ Solving minor defects: 16 hours after reporting on Redmine ¶ Solving trivial defects: 24 hours after reporting on Redmine ¤
5. Time for data cleaning / reporting of data cleaning issues (time between reception of data and delivery of cleaned data, according to workflow mentioned below) ¤	a) 4 hours after reception of data from programme or from Interact (up to three simultaneous receptions) ¶ b) Add 4 further hours for every further 3 simultaneous receptions ¤

SLAs: Service Level Agreements (example from keep.eu)

Indicator [a][b][c]	Agreed level
6. Default time (unless otherwise agreed) for presentation of SoW in Redmine after Redmine development issue is open	a) Works requiring up to 20 man-hours: Up to 2 days b) Works requiring more than 20 man-hours: Up to 4 days
7. Penalty for exceeding indicators 1, 2 and 3.	EUR 250 per exceeding defect
8. Penalty for exceeding indicator 4	EUR 50 per exceeding hour
9. Penalty for exceeding indicator 5	EUR 50 per exceeding hour
10. Penalty for exceeding indicator 6	EUR 100 per exceeding day

SLAs: Service Level Agreements (example from keep.eu)

(a) Defect: An imperfection that impairs worth or utility of any part of keep.eu and that is, or is embedded, in the work and/or the solution provided by Supplier, except defects that are caused by Interact or any third party directly hired by Interact. For the purpose of the above-mentioned quality levels, defect severity is graded from lowest to highest, as follows:¶

- → Trivial: Trivial defects have no real impact on the functionality of the application. Trivial defects for example come in the form of cosmetic or design errors, such as a text block exceeding its boundaries or an image out of alignment.¶
- → Minor: Minor defects still do not impede an application's primary features or functionality, but have an adverse impact on user experience. For example, if you are testing an application and trigger a popup message that is incorrect -- or even in the wrong language -- this is a minor defect, so long as it has no effect on the general functionality of the application itself.¶
- → Major: If you encounter an issue that prevents the application from meeting requirements of a user story or carrying out a feature, it classifies as a major bug on the bug severity scale. In most cases, major bugs are fairly obvious. For instance, if you are testing a game and the application fails to save your score the next time you login, then that is a major bug. Another example would be if the shopping cart function of an ecommerce app does not correctly tally totals and subtotals. In short, major issues prevent applications from doing what they were specified to do.¶
- → Critical: Critical defects are so severe that they prevent you from further testing. These issues manifest themselves in a number of different ways. They can range from an app that continuously crashes to a button missing in the user interface preventing you from loading or triggering a required part of the application.¶

(b) Times should be rounded up or down to the previous or next hour. They should be counted considering a continuity between the end of a workday and the beginning of the next.¶

Two examples of time reckoning using the time for solving a 1a defect: Defect reported in Redmine by Interact at 17:15 on a Friday. This defect should be solved until 12:29 on the following Monday. Should the defect be reported at 16:29 on Friday, it should be solved until 11:29 on the following Monday.¶

(c) Simultaneous means on the same business day (9:00 to 17:00 Finnish time on weekdays, except Christmas and New Year's days). Receptions after 17:00 on one day should be considered as at 9:00 of the following business day.¶

(a) Defect: An imperfection that impairs worth or utility of any part of keep.eu and that is, or is embedded, in the work and/or the solution provided by Supplier, except defects that are caused by Interact or any third party directly hired by Interact. For the purpose of the above-mentioned quality levels, defect severity is graded from lowest to highest, as follows:¶

- → Trivial: Trivial defects have no real impact on the functionality of the application. Trivial defects for example come in the form of cosmetic or design errors, such as a text block exceeding its boundaries or an image out of alignment.¶
- → Minor: Minor defects still do not impede an application's primary features or functionality, but have an adverse impact on user experience. For example, if you are testing an application and trigger a popup message that is incorrect -- or even in the wrong language -- this is a minor defect, so long as it has no effect on the general functionality of the application itself.¶
- → Major: If you encounter an issue that prevents the application from meeting requirements of a user story or carrying out a feature, it classifies as a major bug on the bug severity scale. In most cases, major bugs are fairly obvious. For instance, if you are testing a game and the application fails to save your score the next time you login, then that is a major bug. Another example would be if the shopping cart function of an ecommerce app does not correctly tally totals and subtotals. In short, major issues prevent applications from doing what they were specified to do.¶
- → Critical: Critical defects are so severe that they prevent you from further testing. These issues manifest themselves in a number of different ways. They can range from an app that continuously crashes to a button missing in the user interface preventing you from loading or triggering a required part of the application.¶

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Two examples of time reckoning using the time for solving a 1a defect: Defect reported in Redmine by In

SLAs: Service Level Agreements

An SLA is a commitment between a customer and a service provider. It details the agreed aspects of the service – quality, availability, responsibilities. A typical SLA includes the following:

Type of service to be provided.

The service's desired performance level, especially its reliability and responsiveness.

Monitoring process and service level reporting: How levels are supervised / monitored (statistics to be collected, frequency of collection and how to assess them).

The steps for reporting issues with the service: How to report any issue and the order in which details about the issue have to be reported.

Response time frame: The period by which the service provider will start the investigation of the issue.

Issue resolution time frame: Issue resolution time frame is the period by which the current service issue will be resolved and fixed.

Repercussions for the service provider not meeting its commitments.

SLAs: Service Level Agreements

An SLA is a commitment between a customer and a service provider. It details the agreed aspects of the service – quality, availability, responsibilities. A **good** SLA includes the following:

SLAs: Service Level Agreements

An SLA is a commitment between a customer and a service provider. It details the agreed aspects of the service – quality, availability, responsibilities. A **good** SLA includes the following:

Common sense

Webinar: AI, IT and data fundamentals

Q&A: IT and data

Interact | 12.06.2024

Interact

Co-funded by the European Union

Interreg

Webinar: AI, IT and data for non-geeks

Generative AI: Introduction & basic terminology

Arkam Oğrak / Interact / 12 June 2024

Interact

Co-funded by the European Union
Interreg

AI won't take your job, but someone who knows how to use AI might.

anonymous online quote

Don’t let fear hold you back

There are risks in use of every technology but the future of the innovation is in humans’ hands.

Microsoft CEO Satya Nadella: Moore's Law* has been replaced by the *Scaling Laws** for the intelligence revolution.

*Moore's law states that the number of transistors in a dense integrated circuit (IC) doubles about every two years.
*A neural model can be characterized by 4 parameters: size of the model, size of the training dataset, cost of training, performance after training. Each of these four variables can be precisely defined into a real number, and they are empirically found to be related by simple statistical laws, called "scaling laws"

Link to video

The Tech Wars

OpenAI

MIdjourney

Stable Diffusion

Google

Meta

amazon.com

NVIDIA

IBM

Link to video

What does ‘Generative AI’ generate?

Text	Articles, stories, poems, code, dialogue Translation, paraphrasing Chatbots
Image	Realistic images, including faces, artwork, landscapes, objects Style transfer, inpainting/outpainting, blending, describing
Media	Audio, music, voice synthesis, sound effects, speech Video, deepfake, summarization, synthesis, scene generation. Augmented reality (AR) and virtual reality (VR) content

Generative AI doesn't only 'generate', but it also optimizes, modifies, analyses existing content.

LLMs: Large Language Models

GPT: Generative Pre-trained Transformer

ChatGPT 3.5 & 4.o: Research, writing, drafting

Microsoft Copilot: Chat GPT 4 + Dall-E 3 + Bing

Google Gemini: Multimodal (text, image, audio, code, etc.)

Claude 3 – Sonnet: Competitor to ChatGPT

Resoomer: Summarize and analyze argumentative texts

Gramarly: Check grammar, tone and generate text

QuillBot: Paraphrase, grammar and improve English

Hemingway editor: Improve readability, colour coded guide

Text-to-image models

Midjourney: Realistic, artistic generations

Dall-E: Generations through ‘natural language’ prompts

Stable Diffusion: Open source, base model for many tools on the market

Gemini, Co-pilot: Combined with LLMs

OpenArt: Third party interface with good free plan and creative features. Access to many different models

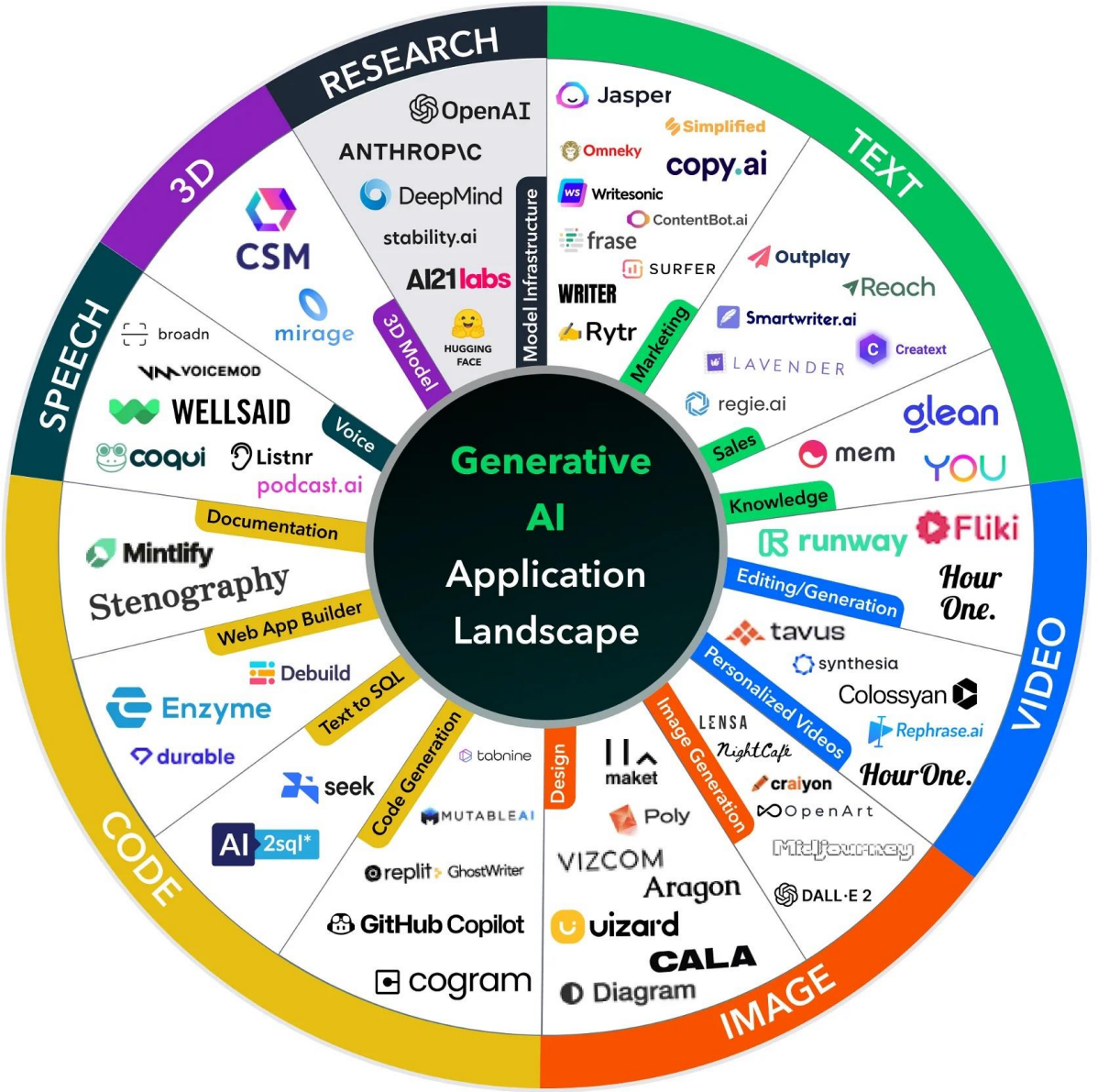
Runway ML: Versatile use, text to image, text to video, editing, etc

Playground, Leonardo, Nightcafe, etc: Versatile use, switch between models

Also less popular ones: Muse, DreamBooth, Dreamfusion…

9

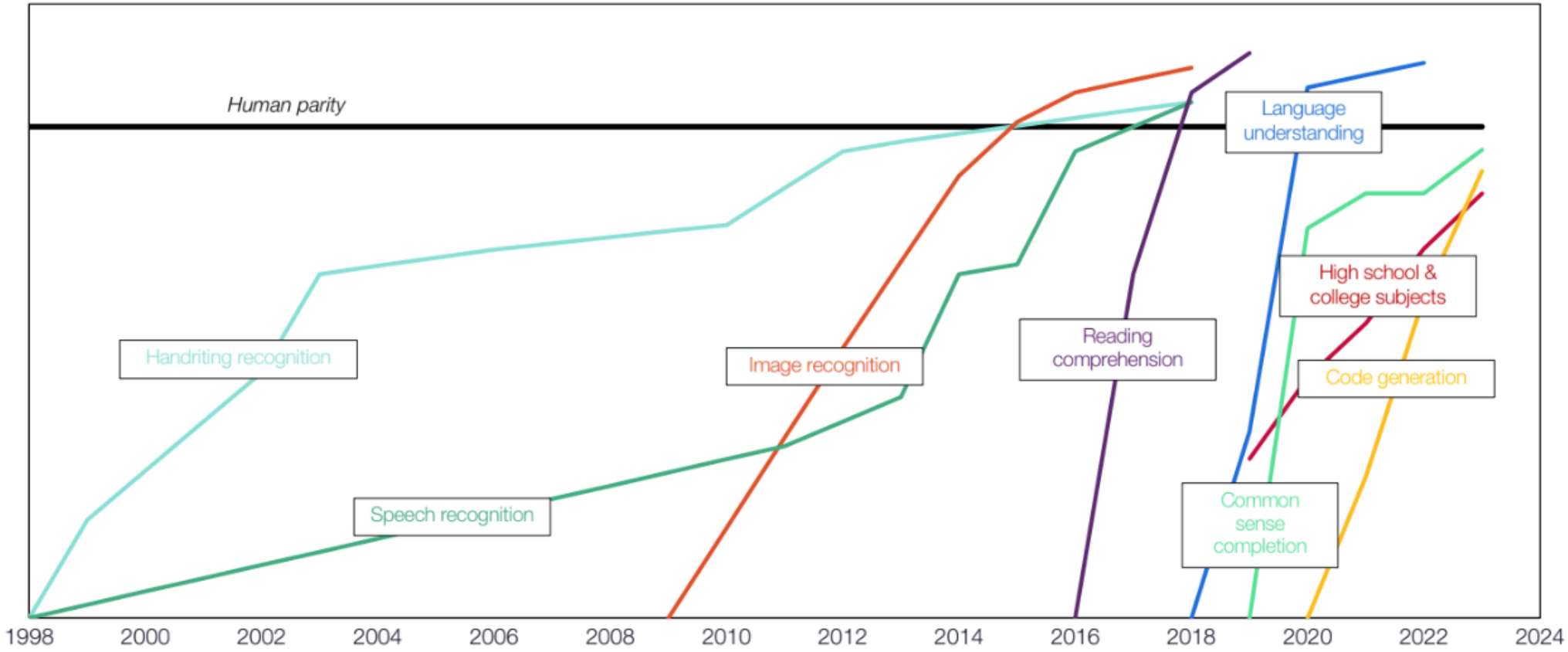
AI Models Landscape



rapidops

AGI: Artificial General Intelligence

→ Speed for models to reach human level accuracy on benchmarks has decreased



COATUE Source: Directional data taken from Contextual.ai, Time, and PapersWithCode as of November 2023. For illustrative purposes only. There is no guarantee that Coatue's views and projections regarding the future potential of AI are accurate or that any particular Coatue investment or fund will benefit from the AI trend. See Appendix-Disclosures for important disclosures, including regarding projections and forward-looking statements and trends.

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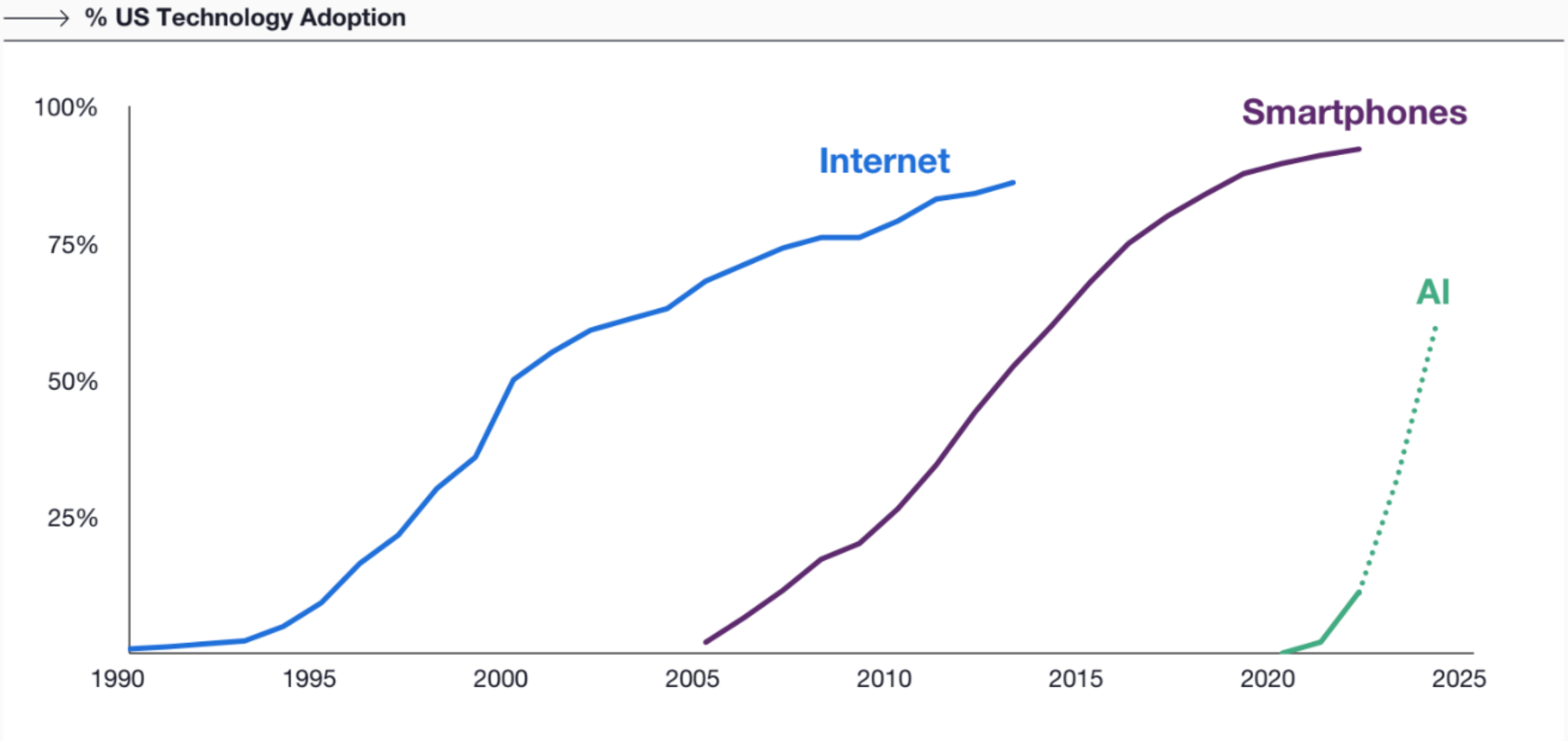
We're at Day 1 of AI…and riding on top of past waves

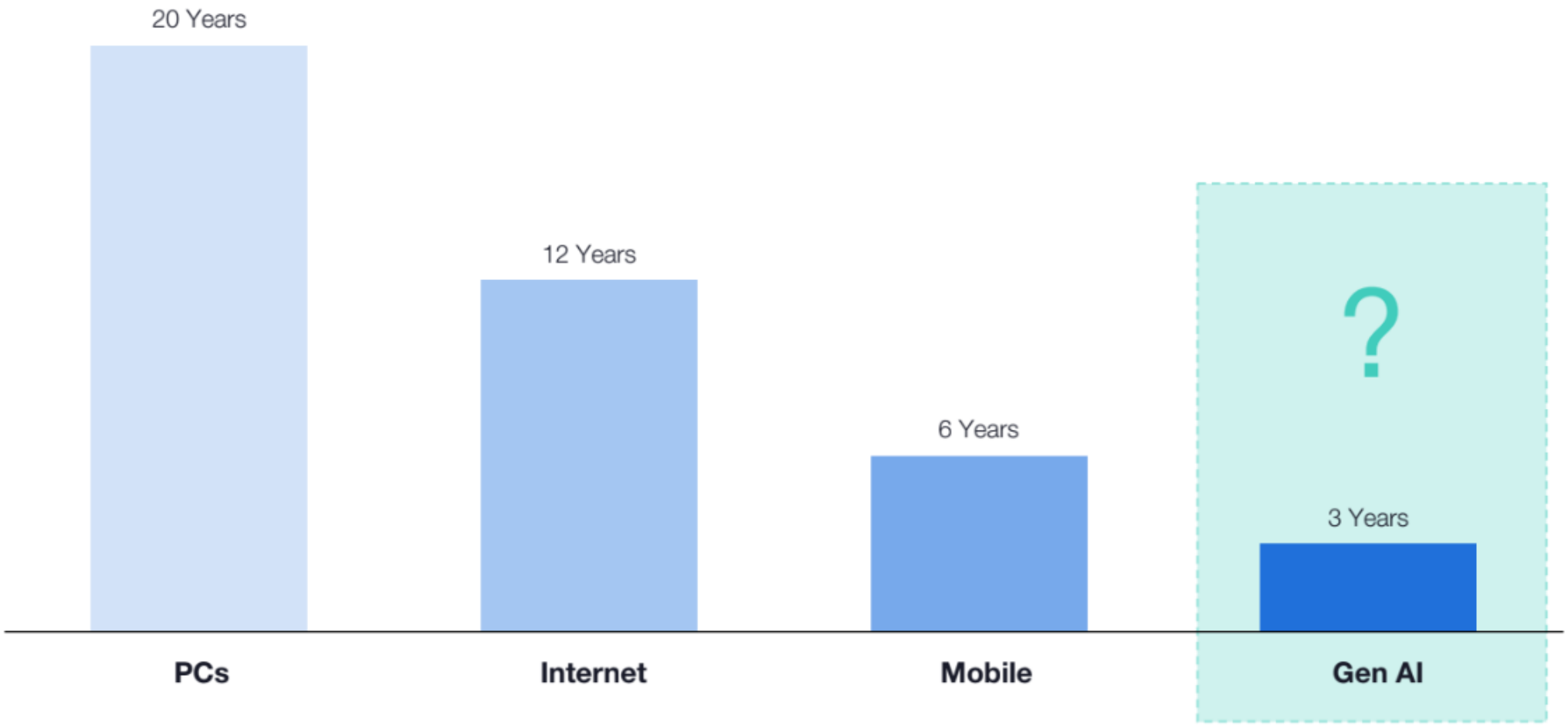


Source: World Bank as of September 2023, Statista as of September 2023, Coatue analysis and opinion as of November 2023. For illustrative purposes only. There is no guarantee that Coatue's views and projections regarding the future potential of AI are accurate or that any particular Coatue investment or fund will benefit from the AI trend. See Appendix-Disclosures for important disclosures, including regarding projections and forward-looking statements and trends.

Adoption has been twice as fast with each platform shift

⟶ Halving of penetration time with new technology waves

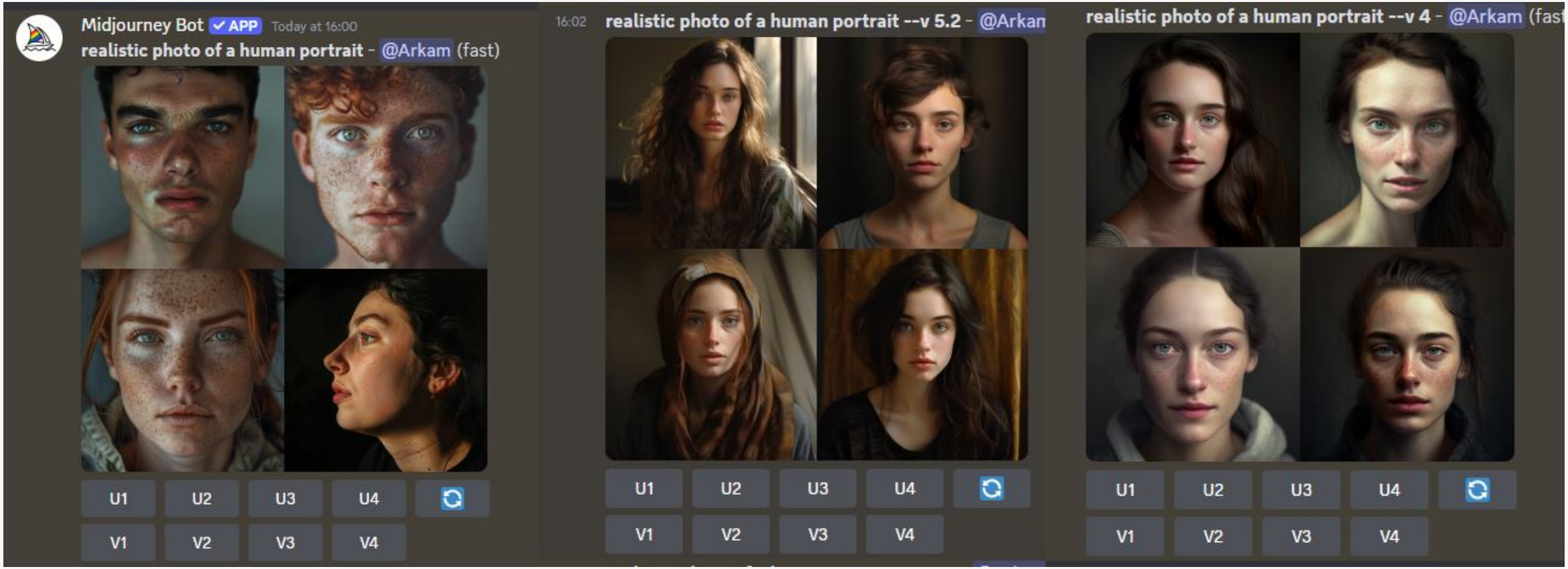
# of years to reach 50% user penetration in the US



Source: Morgan Stanley Research as of September 2023. For illustrative purposes only. There is no guarantee that Coatue's views and projections regarding the future potential of AI are accurate or that any particular Coatue investment or fund will benefit from the AI trend. See Appendix-Disclosures for important disclosures, including regarding projections and forward-looking statements and trends.

Diversity fine tuning

+Machine learning bias

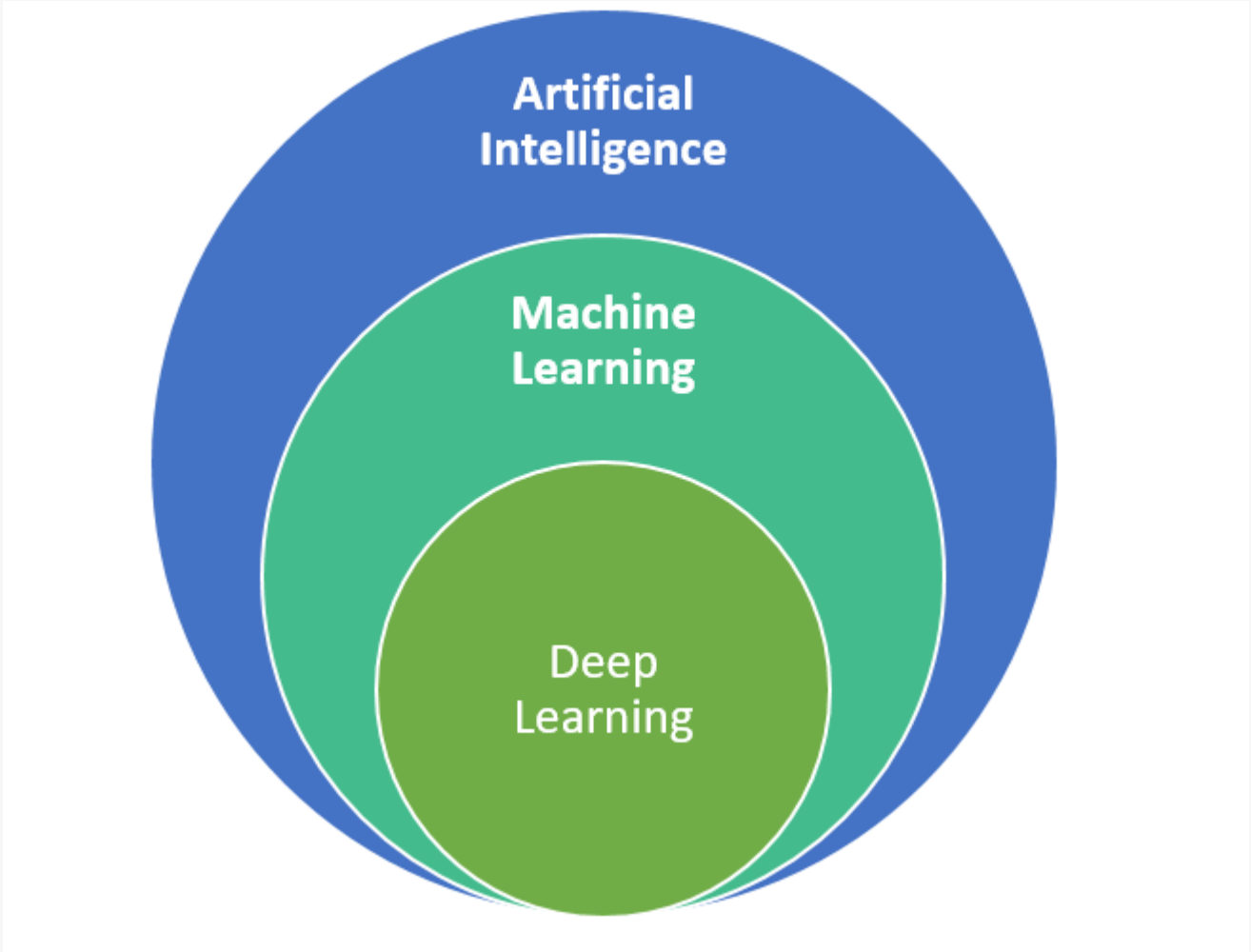


14

AI hallucination

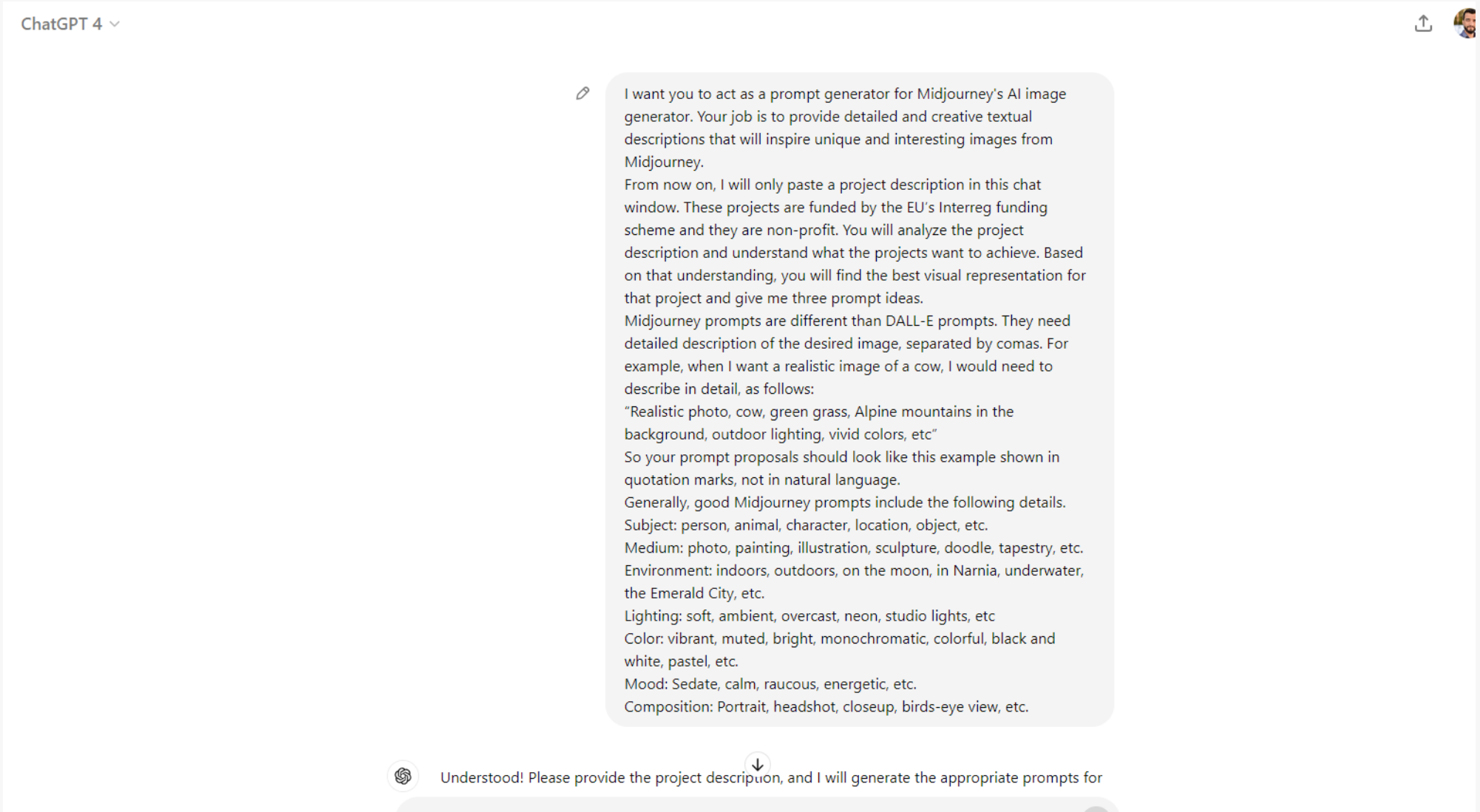
15

AI machine learning



16

Grounding



17

‘Grounding’ ChatGPT

Understand Interreg
Understand what Interreg is using the information under this link: https://interreg.eu

Go programme specific
(That’s correct.) Now please find the information about Interreg EURO MED Programme, and summarise what the programme does

Get to know your job description
I’m working as communication officer for this programme. My main tasks are

- Promoting the programme to the identified target groups
- Managing the programmes communication channels, such as the website, social media accounts
- Organising visibility events, as well as other general events for the management of the programme, such as info days, partnership forums, applicant seminars
- Supporting project beneficiaries, who are the organisations receiving funding from our programme, in project communications. For example, advising them on communication measures for their projects.
- Carrying out creative work for all these tasks, such as graphic design, video editing, creative writing, etc

Reply “I understand” if this is clear. I will give you tasks based on this grounding.

18

‘Grounding’ ChatGPT

Once grounded, ChatGPT will give more accurate and more relevant replies to your prompts. For example:

Ask for project summary

Great! Now I am going to paste a one-page information about a project that our programme funds. This is from the application form and these texts are usually bureaucratic and hard to understand. I would like you to summarise the information in plain language that non-specalist people can understand.

Find titles to planned events

In our communication strategy, there are four major transnational events foreseen

1. A kick-off event to launch the Programme
2. Programme and project Governance summit
3. A community building event to boost the Euro-MED community
4. A Mediterranean forum: “MEDforPolicyChange”.

Can you please propose catchy titles for each of these four events?

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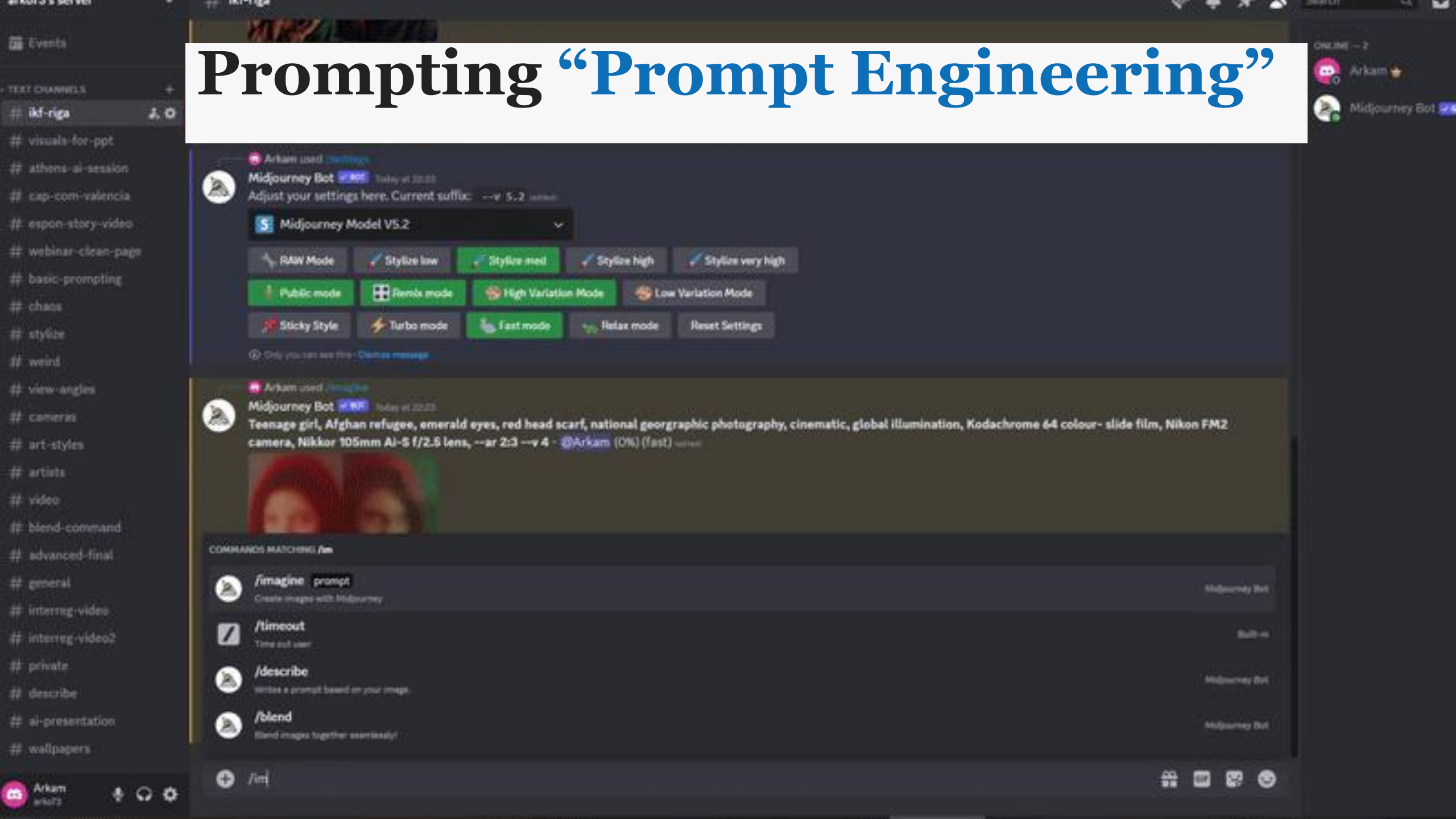
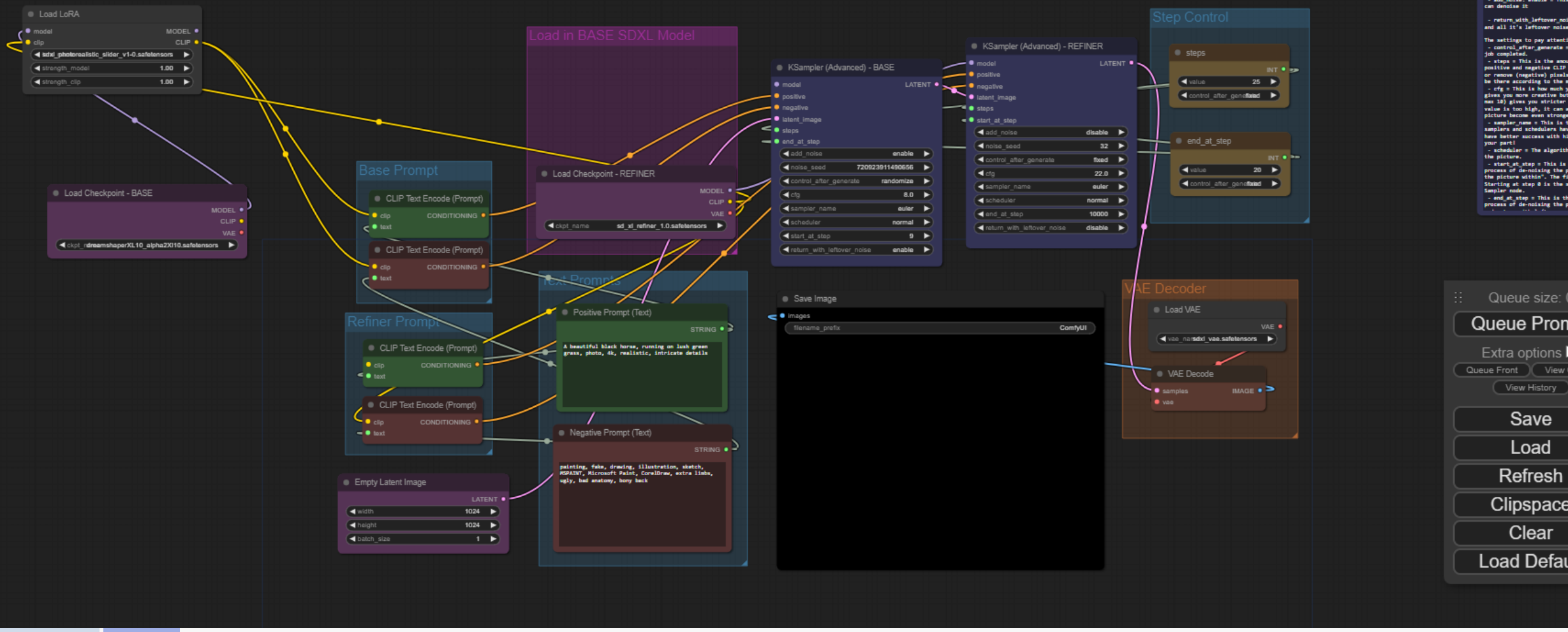
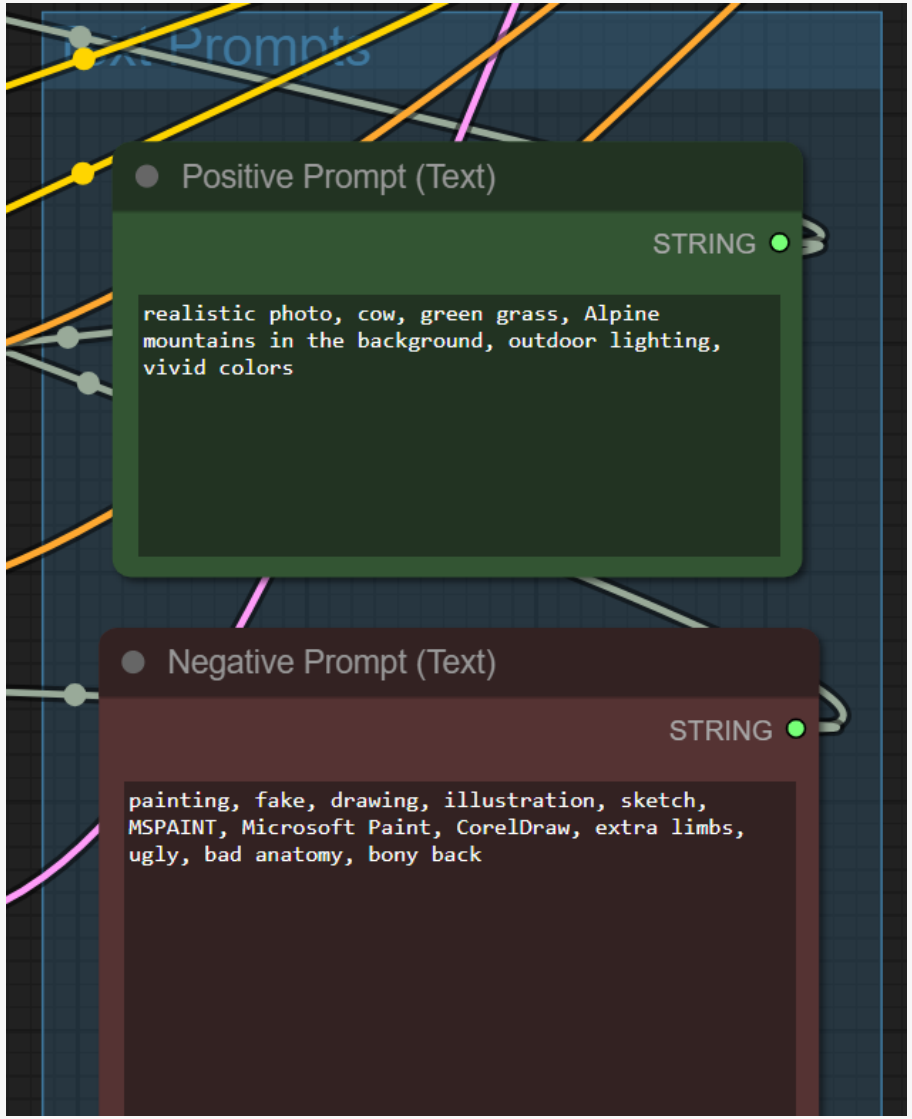
Prompting “Prompt Engineering”

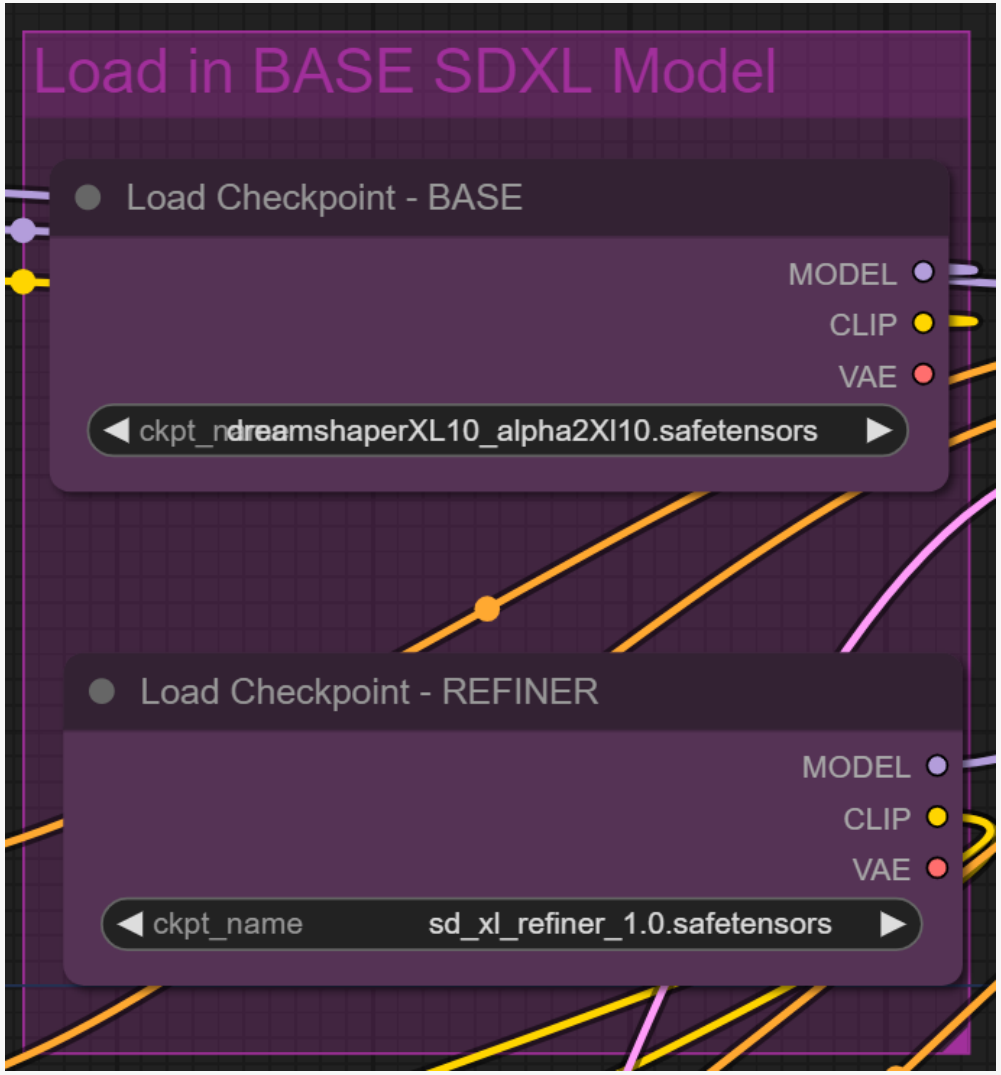


Stable Diffusion

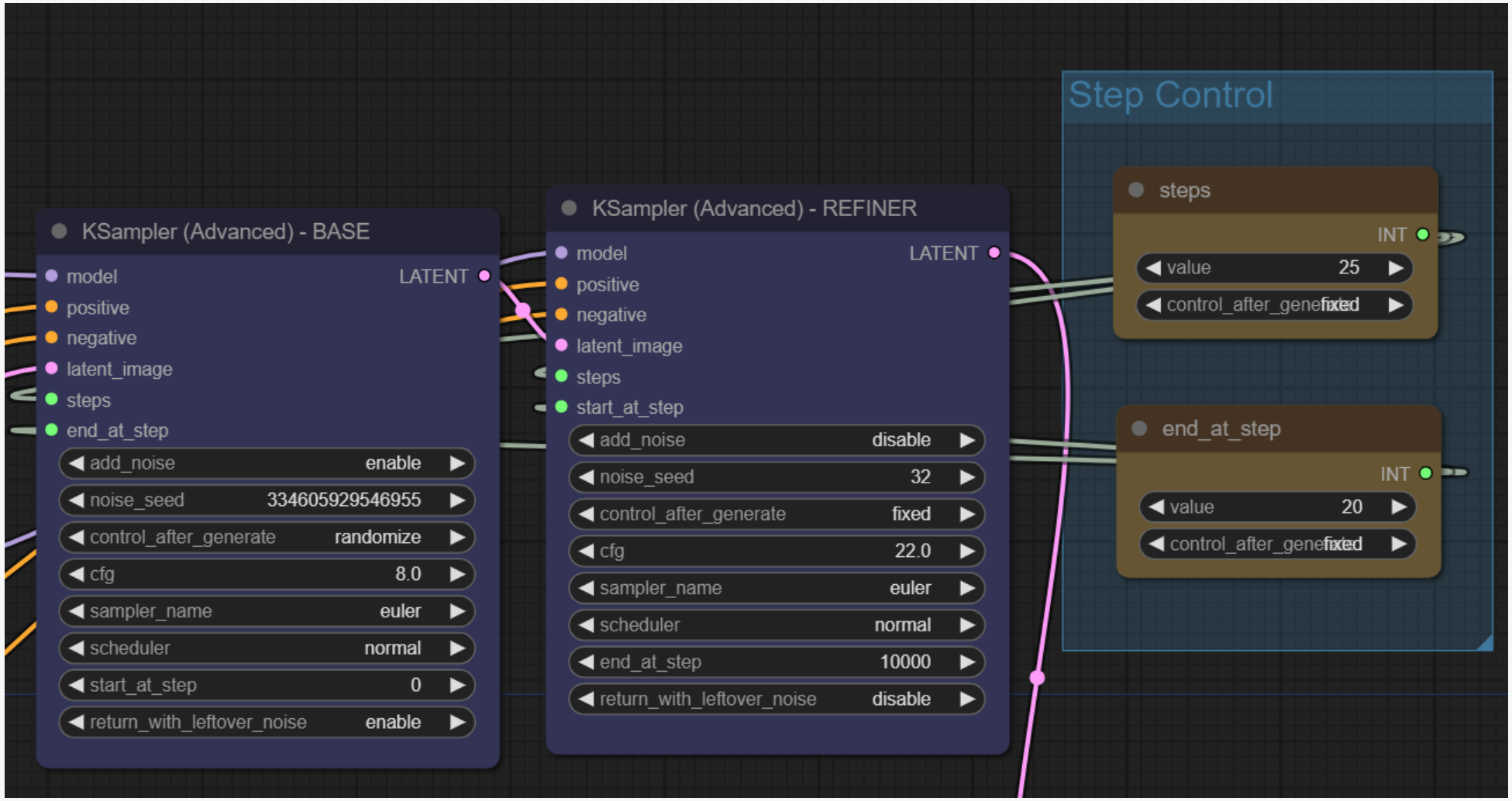


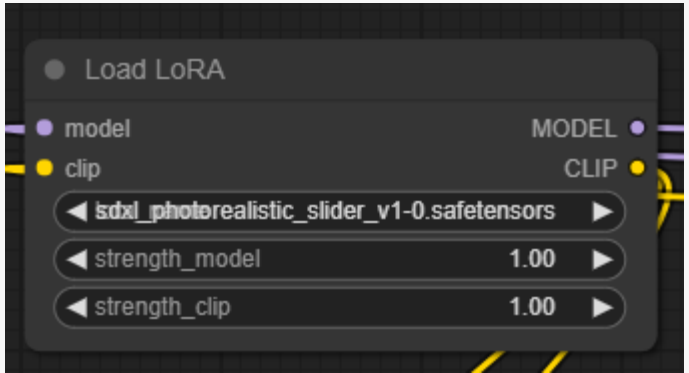
21

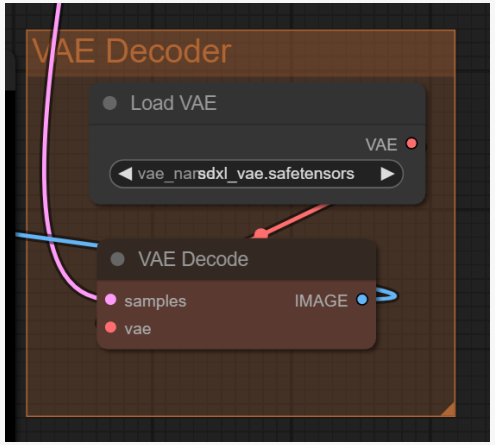

Positive Prompt (Text)
STRING
realistic photo, cow, green grass, Alpine mountains in the background, outdoor lighting, vivid colors
Negative Prompt (Text)
STRING
painting, fake, drawing, illustration, sketch, MSPAINT, Microsoft Paint, CorelDraw, extra limbs, ugly, bad anatomy, bony back


Load in BASE SDXL Model
Load Checkpoint - BASE
MODEL
CLIP
VAE
ckpt_name
dreamshaperXL10_alpha2Xl10.safetensors
Load Checkpoint - REFINER
MODEL
CLIP
VAE
ckpt_name
sd_xl_refiner_1.0.safetensors

22


KSampler (Advanced) - BASE
model
positive
negative
latent_image
steps
end_at_step
LATENT
add_noise enable
noise_seed 334605929546955
control_after_generate randomize
cfg 8.0
sampler_name euler
scheduler normal
start_at_step 0
return_with_leftover_noise enable
KSampler (Advanced) - REFINER
model
positive
negative
latent_image
steps
start_at_step
LATENT
add_noise disable
noise_seed 32
control_after_generate fixed
cfg 22.0
sampler_name euler
scheduler normal
end_at_step 10000
return_with_leftover_noise disable
Step Control
steps
INT
value 25
control_after_generate fixed
end_at_step
INT
value 20
control_after_generate fixed


Load LoRA
model
clip
MODEL
CLIP
sdxl_photorealistic_slider_v1-0.safetensors
strength_model 1.00
strength_clip 1.00


VAE Decoder
Load VAE
VAE
vae_name sdxl_vae.safetensors
VAE Decode
samples
vae
IMAGE

Upscaling

Link to video

ESENTATION

Generative fill/inpainting feature

Link to video

Outpainting/zoom out feature

[Link to the video]

Blend feature

+

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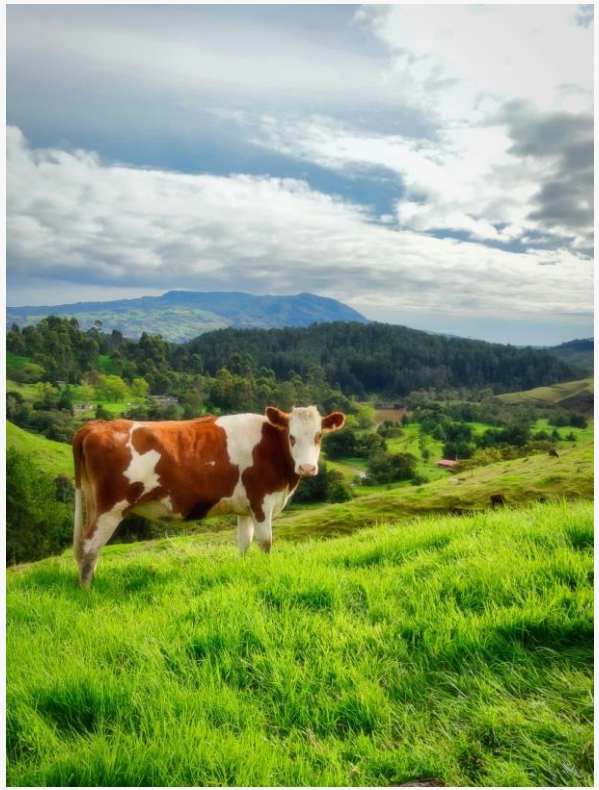
28

Blend feature



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29

Describe feature (img-to-text)

1 a young woman with a red scarf and blue eyes, in the style of national geographic photo, dark emerald and light brown, light red and green, portraitist extraordinaire, use of screen tones, pop-culture-infused --ar 37:56

2 an embroidered shawl has a girl's face that is looking at the camera, in the style of steve , light red and green, steve hanks, associated press photo, pure color, wandering eye, dau-al-set --ar 37:56

3 this girl is wearing red and green shawl, in the style of national geographic photo, intense gaze --ar 37:56

4 a young woman with scarred skin wearing scarf, in the style of steve , photorealistic eye, realistic color schemes, edwin lord weeks, light red and dark emerald, made of all of the above, distinctive noses --ar 37:56

1 2 3 4

Imagine all

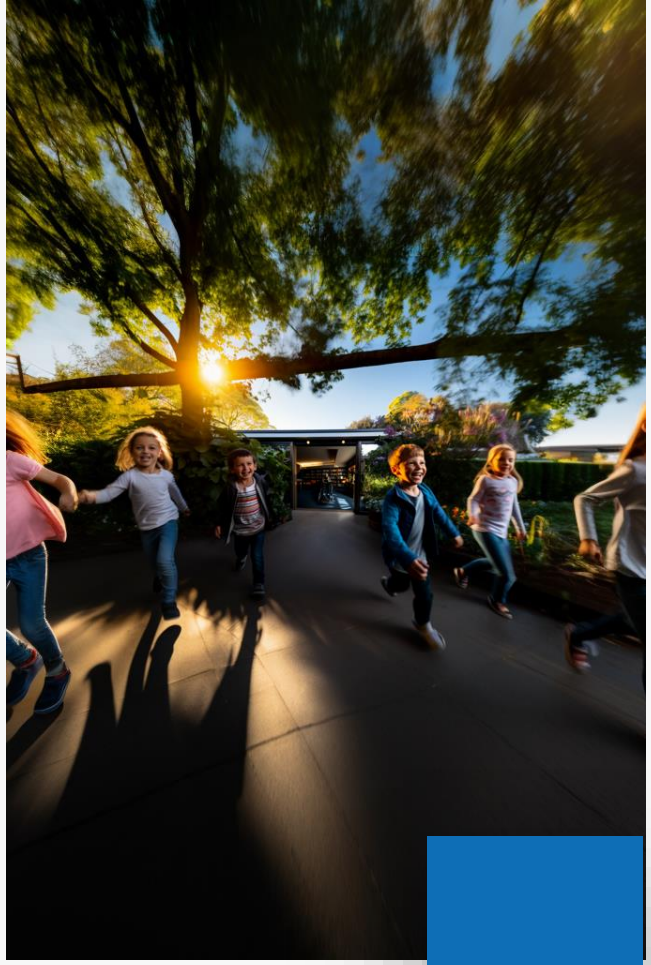
Style transfer

31

AI concerns & opportunities

Illustration by Vilkasss using Midjourney, Pixabay, CC

Sam Altman is the founder and the CEO of OpenAI, which is the company behind ChatCPT.



An unregulated field what to expect?

- It is NOT regulated yet. Expect regulations on privacy, children rights, intellectual property, deep fake,
- Artists claiming their property and name rights
- It may become mandatory to share prompts used for each generation
- Too early to assume many things
- EU AI Act adopted

Language tools

Better texts	AI can turn long, unintelligible texts into concise and clear works of art.
Time saving	AI can save you hours of work every week with drafting and summarizing.
Tailored contents	It can also adjust the tone and structure of your work for different purposes.

Visual tools

Visualise your imagination	No more Google Image search ending up in paid stocks. Almost anything you can imagine can be generated with AI tools. You just need to learn how!
Create your own stock	Create your programme photo stock without the need for contracting a photographer
Remedy to privacy concerns	Images of people normally an issue, need explicit permission. AI generated image is good remedy for that!

To wrap up - tips

- If you can imagine it, you can generate it!
- Authenticity first! Use genuine visuals from real projects, use AI if none available.
- Human supervision is key: always review the generated outputs carefully & revise.
- Research, but don’t get lost in details. Try new tools, see what works for you. Combine different tools.
- Consider the legal & ethical concerns.
- Do not share confidential or personal info
- Always check the sources
- Share tips with colleagues

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Webinar: AI, IT and data fundamentals

Q&A: AI

Interact | 12.06.2024

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(form at https://connections.interact-eu.net/surveys/secure/org/app/d5d1dc71-dc3f-443d-8f8f-53633f683d39/launch/index.html?form=F_Form1).

We do thank you for the five additional minutes of your time going through the evaluation form.

All materials will be made available by email.