



Digital Experience
Days 2023

**ReThinking Business: Wie die neue Generation der KI
Unternehmen, Märkte und unsere Gesellschaft
revolutioniert**

Peter Gentsch | 18.06.2023

Generative AI is as Mega-Trend in all the media



62 Die ChatGPT-Welle rollt
Wie Firmen künstliche Intelligenz (KI) in der Praxis nutzen

WirtschaftsWoche

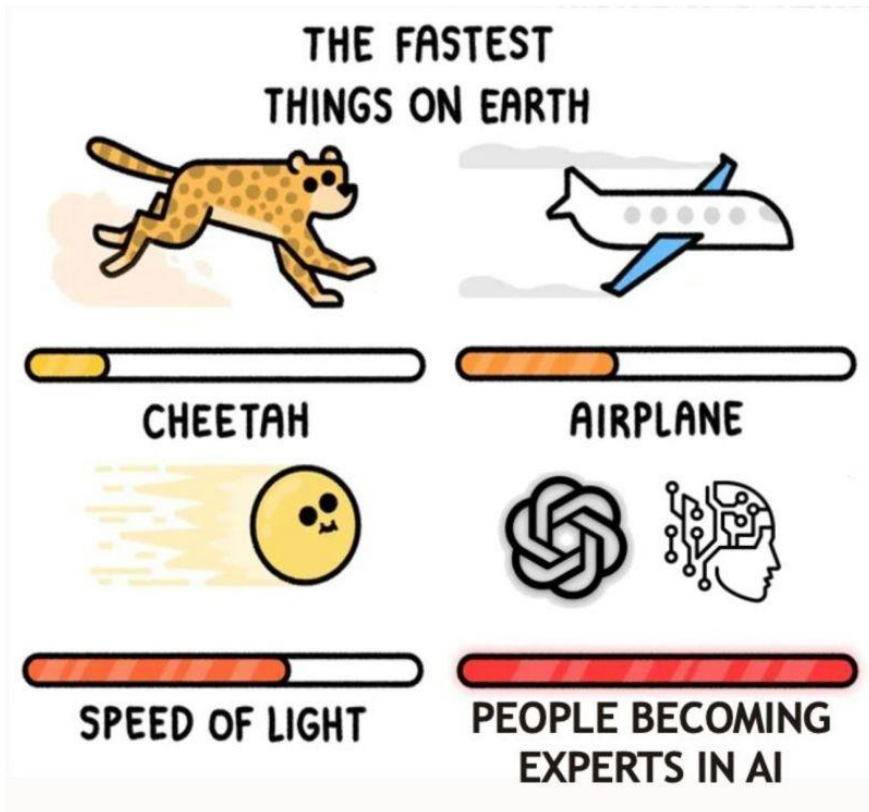
„Generative KI ist nicht nur ChatGPT – es gibt Alternativen, die leistungsfähig und datenschutzkonform sind, auch aus Europa“

PETER GENTSCH
Gründer des AI Foundation Circle

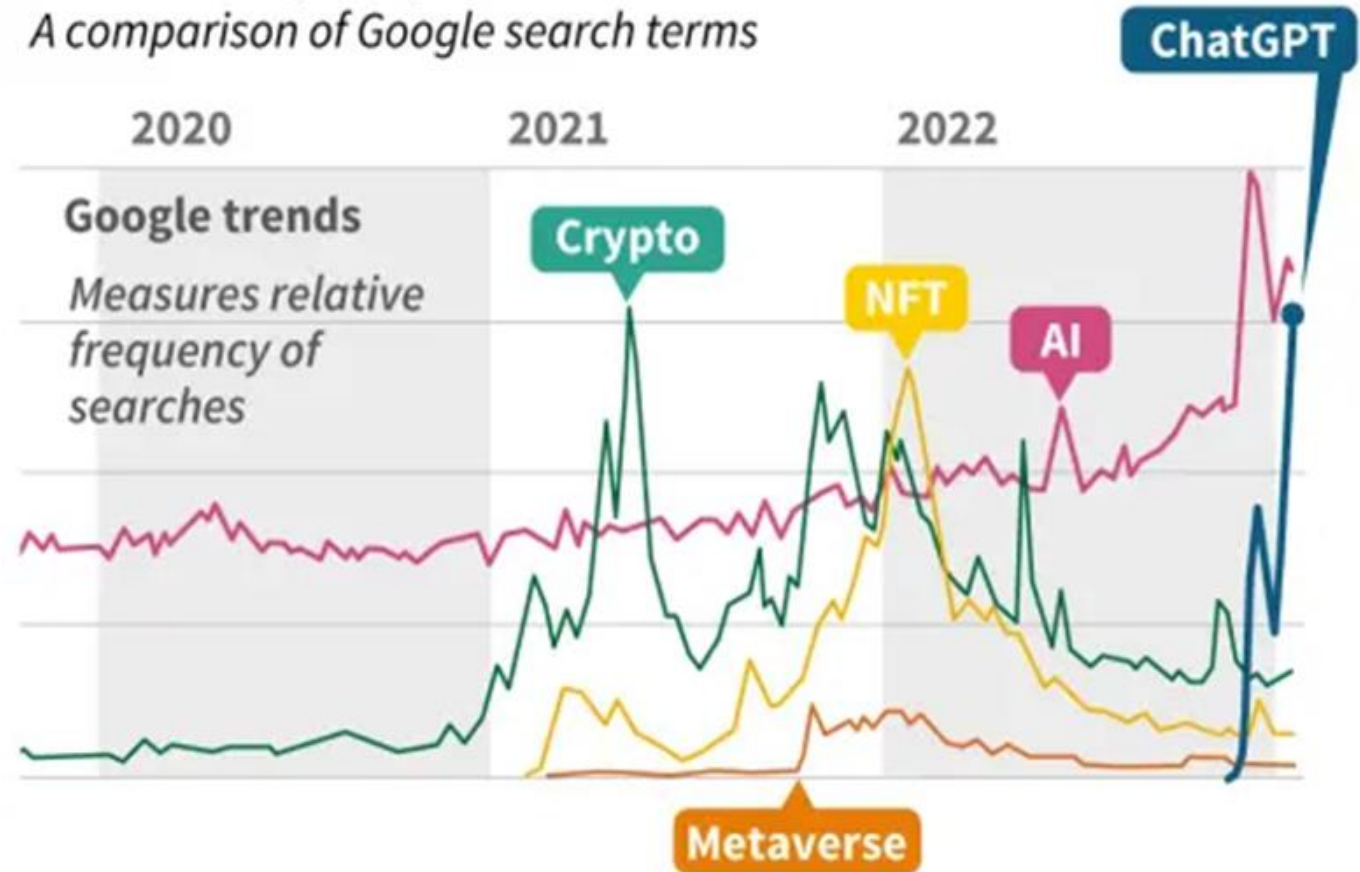
PG „Generative KI kann so viel mehr – sie ist wie ein Schweizer Messer“
PETER GENTSCH, Gründer des AI Foundation Circle
9.6.2023 / WirtschaftsWoche 24



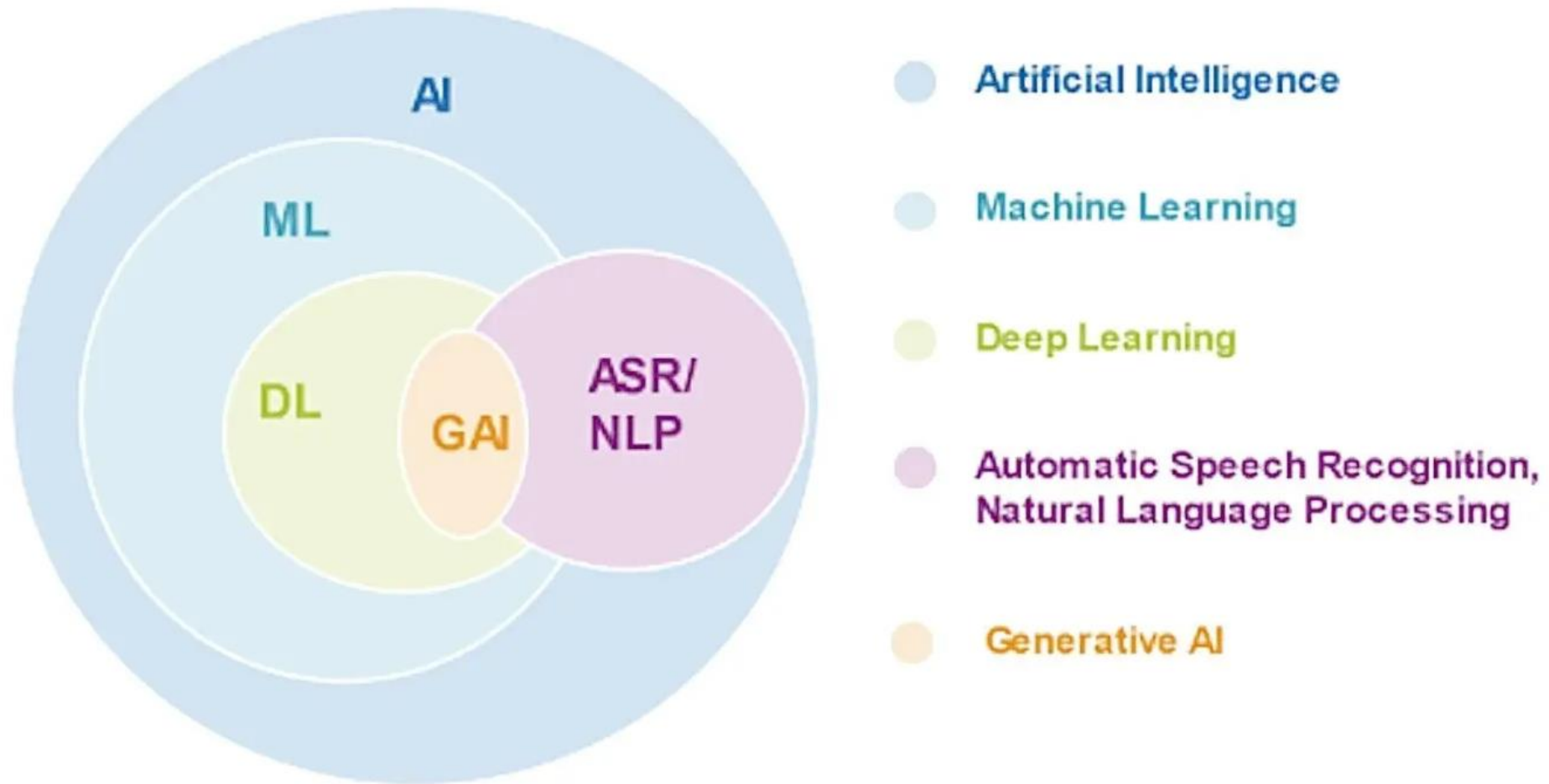
ChatGPT & Co – the hype is on!



A comparison of Google search terms



ChatGPT & Co as Generative AI is just one part of AI



Google set up 2017 foundation for Transformer Models

Google Research

Philosophy

Research Areas

Publications

People

Tools & Downloads

BLOG >

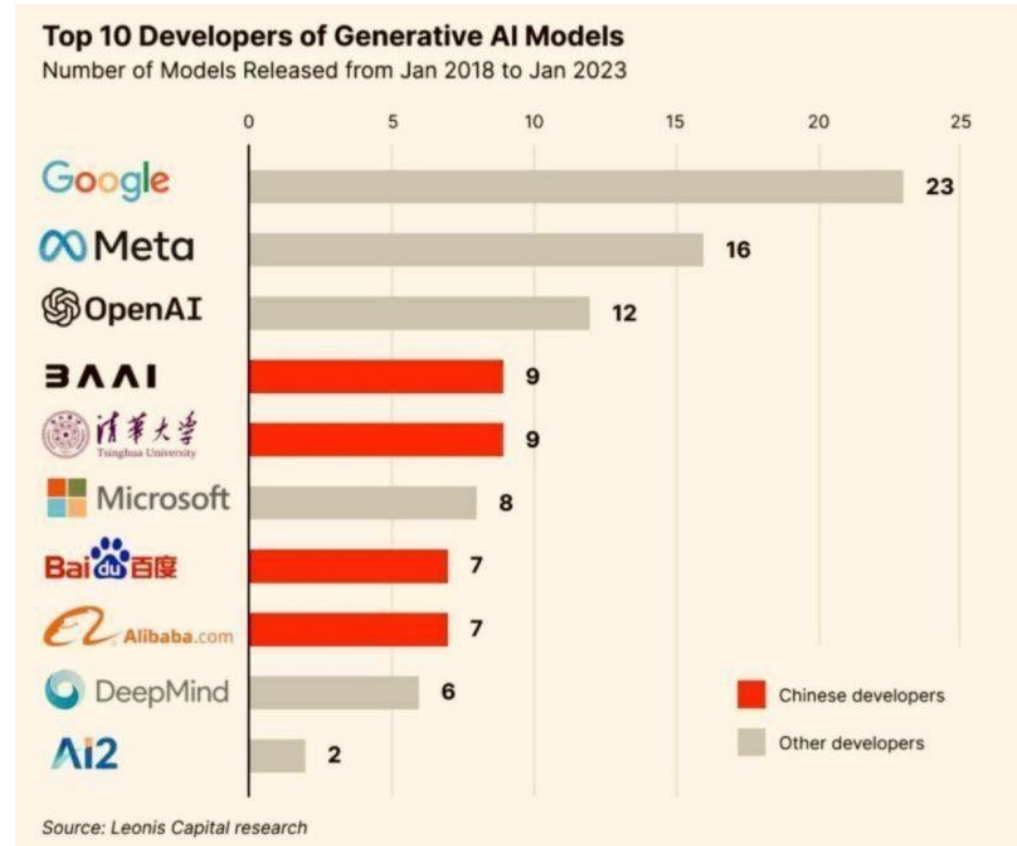
Transformer: A Novel Neural Network Architecture for Language Understanding

THURSDAY, AUGUST 31, 2017

Posted by Jakob Uszkoreit, Software Engineer, Natural Language Understanding

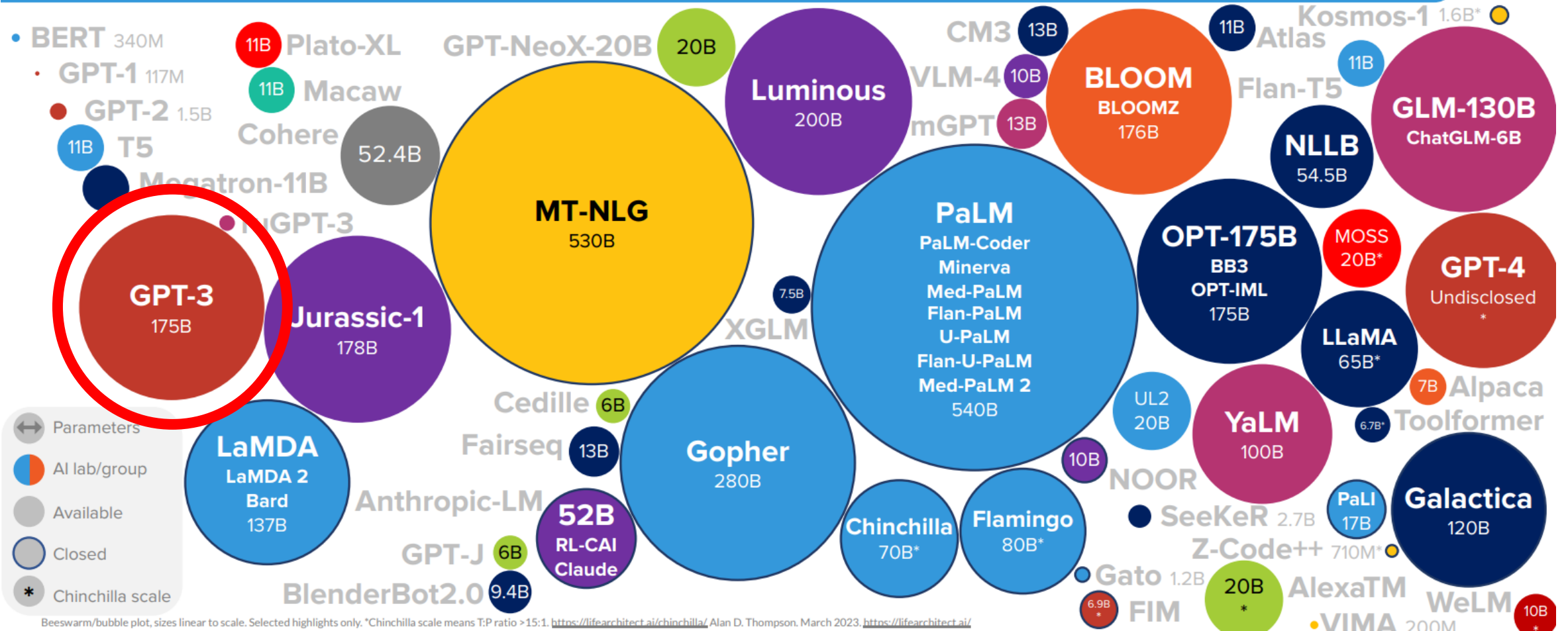
Neural networks, in particular [recurrent neural networks](#) (RNNs), are now at the core of the leading approaches to language understanding tasks such as [language modeling](#), [machine translation](#) and [question answering](#). In “[Attention Is All You Need](#)”, we introduce the Transformer, a novel neural network architecture based on a self-attention mechanism that we believe to be particularly well suited for language understanding.

In our paper, we show that the Transformer outperforms both recurrent and convolutional models on academic English to German and English to French translation benchmarks. On top of higher translation quality, the Transformer requires less computation to train and is a much better fit for modern machine learning hardware, speeding up training by up to an order of magnitude.



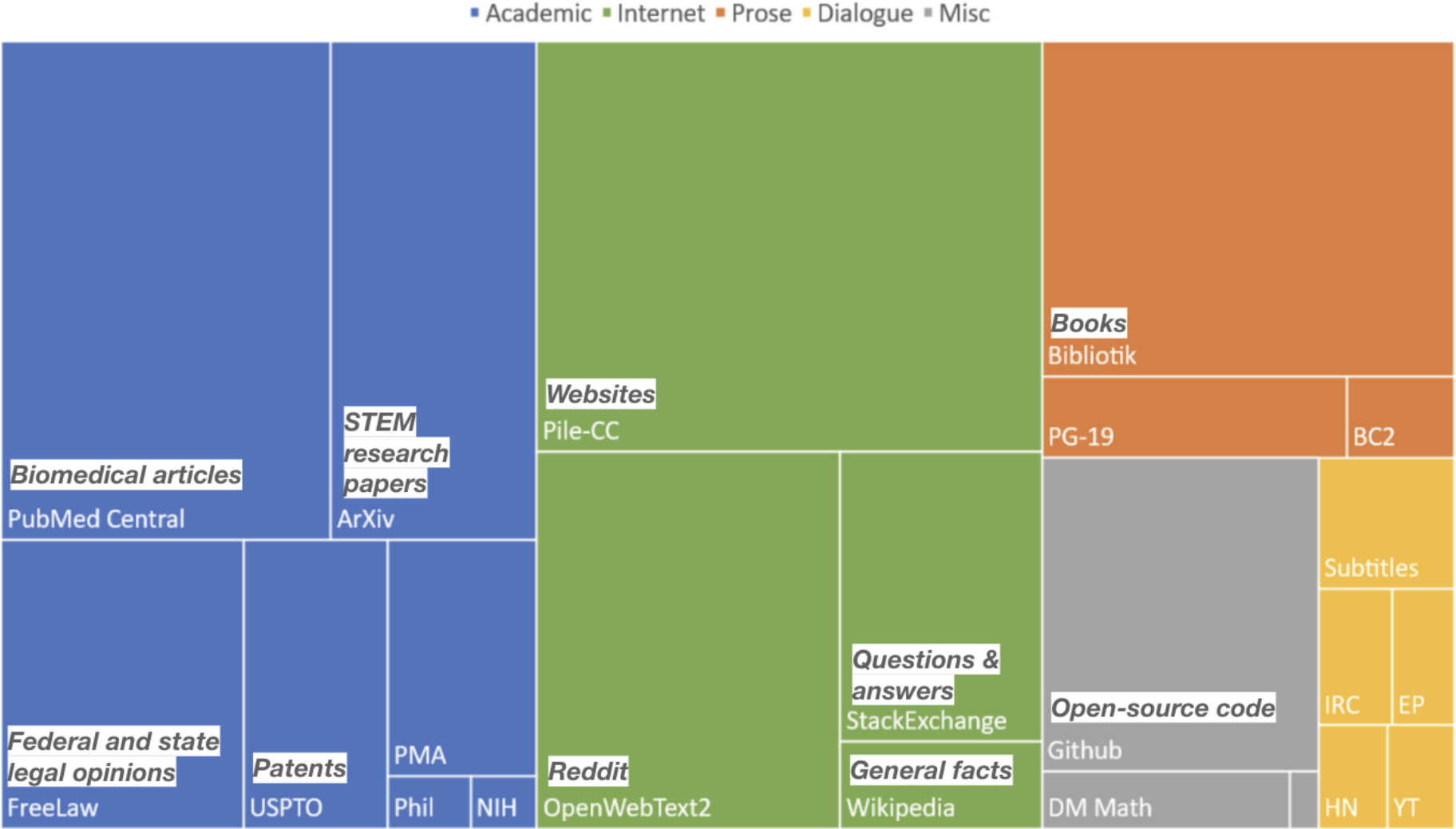
Global Large Language Model (LLM) Landscape

LANGUAGE MODEL SIZES TO MAR/2023



Beeswarm/bubble plot, sizes linear to scale. Selected highlights only. *Chinchilla scale means T:P ratio > 15:1. <https://lilesearchitect.ai/chinchilla/>; Alan D. Thompson, March 2023, <https://lilesearchitect.ai/>

Foundation-Models are trained on 100s of Gigabytes of text data to build an understanding of the world



Foundation Models: Very simple mechanics, but very powerful! But not really intelligent....

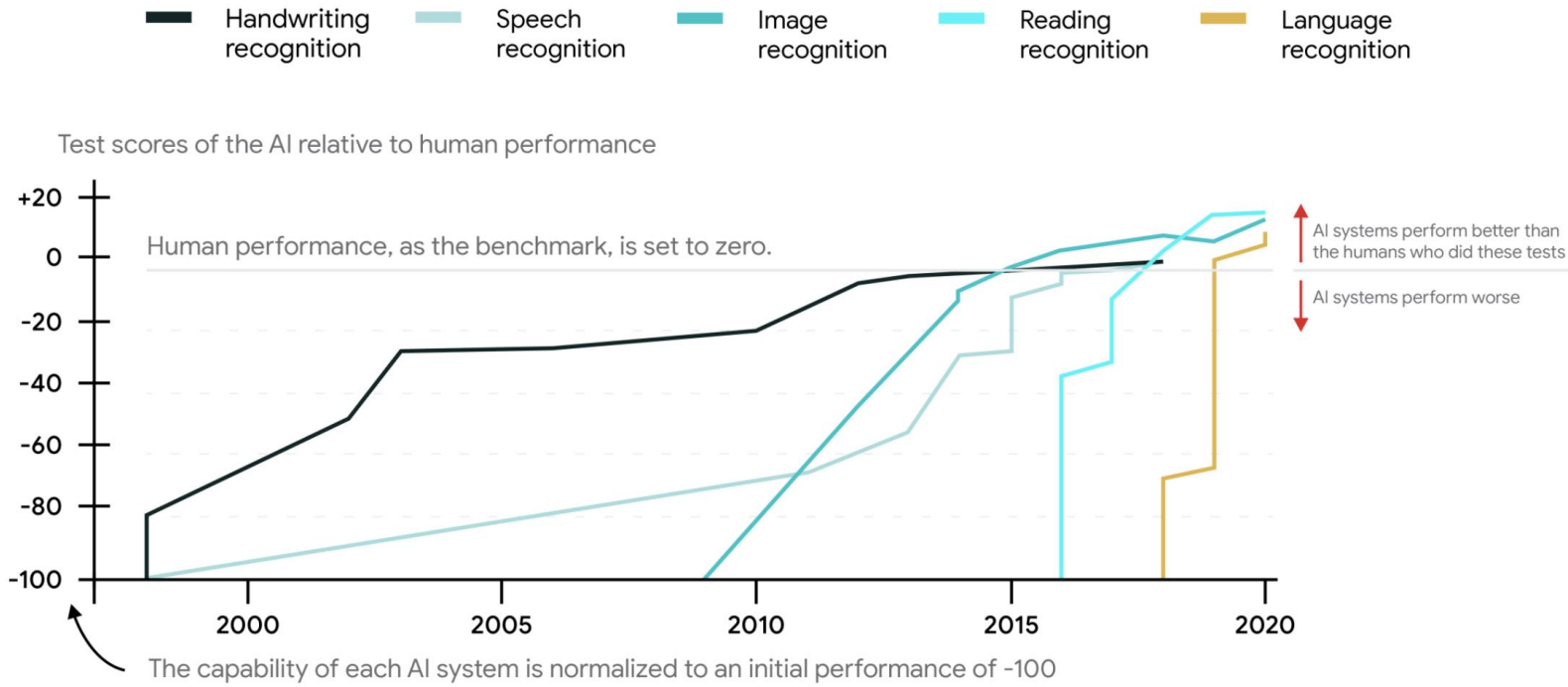
PRETRAINING

- Training of a model with simple tasks that do not require human annotation of training data. e.g. by filling gaps or by completing sentences or texts

_____ released a China version of Model 3. -- Tesla
Tesla _____ a China version of Model 3. -- released
Tesla released __ China version of Model 3. -- a
Tesla released a _____ version of Model 3. -- China
Tesla released a China _____ of Model 3. -- version
Tesla released a China version __ Model 3. -- of
Tesla released a China version of _____. -- Model 3

training data	labels
sentence with gap 0-1	word 1
sentence with gap 1-2	word 2
sentence with gap 2-3	word 3
sentence with gap 3-4	word 4
sentence with gap 4-5	word 5
sentence with gap 5-6	word 6
sentence with gap 6-7	word 6

The development pace of model capabilities has massively increased in the last years



Data source: Kiela et al. (2021) - Dynabench: Rethinking Benchmarking in NLP
 OurWorldinData.org - Research and data to make progress against the world's largest platforms.

Licensed under CC-BY by the author Max Roser

What, like it's hard?

Academic and professional exam scores (and percentiles) of Open AI's latest models

Exam	GPT-4	GPT-3.5
Uniform Bar Exam	298/400 (~90th)	213/400 (~10th)
LSAT	163/180 (~88th)	149/180 (~40th)
SAT Reading & Writing	710/800 (~93rd)	670/800 (~87th)
SAT Math	700/800 (~89th)	590/800 (~70th)
GRE Verbal	169/170 (~99th)	154/170 (~63rd)
GRE Writing	4/6 (~54th)	4/6 (~54th)
AP Biology	5/5 (85th-100th)	4/5 (62nd-85th)
AP Calculus BC	4/5 (43rd-59th)	1/5 (0th-7th)
AP Chemistry	4/5 (71st-88th)	2/5 (22nd-46th)
AP English Language and Composition	2/5 (14th-44th)	2/5 (14th-44th)
AP English Literature and Composition	2/5 (8th-22nd)	2/5 (8th-22nd)
AP Macroeconomics	5/5 (84th-100th)	2/5 (33rd-48th)
Introductory Sommelier	92%	80%
Advanced Sommelier	77%	46%
Leetcode (easy)	31/41	12/41
Leetcode (hard)	3/45	0/45

Table: J.D. Capelouto/Semafor • Source: OpenAI



Foundation AI as continuum of applications

No Quality Management/
Adjustment

Output is not directly
used as final result

Inspiration
Innovation
Brainstorming
Research

Minor Quality Management/
Adjustment

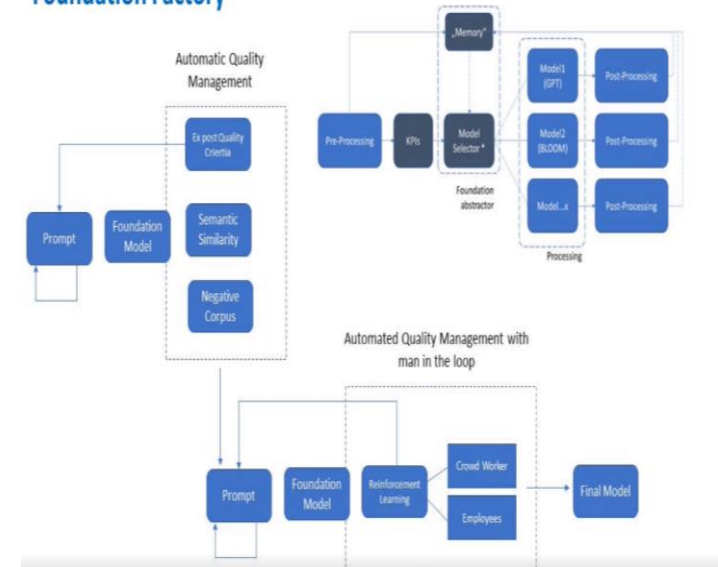
In order for the output to be
used as the final result, no or
only minor adjustments have to
be made (usually ex post)

Imitation
Summarization
Paraphrasing
Translation

Blog Post
Images
SEO-Optimization
E-Mail responses
...

Advanced Quality
Management/ Adjustment
(Fine Tuning/ Embeddings)

Foundation Factory



„Human in the loop“

Error Tolerance
Halluzination Tolerance

SWOT-Bot for management decisions

SWOT
BOT

- Tuned language model based on **DeBERTa** (Decoding-enhanced BERT with disentangled attention).
- **Summaries** are created using this knowledge with **GPT-4**.
- The support of the language models saved an **average of 310 minutes** in the creation of the final SWOT analyses.

Strategic key insights for Netflix, Inc.

SWOT results

Strengths	Weaknesses	Opportunities	Threats
<ol style="list-style-type: none">Netflix has a strong content positioning, allowing them to create original content and drive growth.They have a disciplined approach to delivering value for content spend, and have been experimenting with livestreaming technology to offer unique entertainment experiences.Netflix has a strong demand for consumer-centric experiences, and has been leveraging targeted ad strategies to reach fewer people with high performance.	<ol style="list-style-type: none">Netflix is facing challenges in subscriber growth due to limited targeting options and COVID concentration, as well as FX headwinds and lack of IP and library.The company is attempting to reaccelerate revenue with advertising and price hikes, as well as strategic ad load and frequency capping.Netflix must also navigate home viewing habits, privacy, costs and competition for subscriber growth, as well as supply chain slowdowns and extended stock prices.	<ol style="list-style-type: none">Netflix has strong growth opportunities due to the high demand for content and the potential to expand globally.The company has the potential to unlock new revenue streams through advertisers and account sharing.Sports and streaming have opened up new opportunities for growth with unlimited potential.	<ol style="list-style-type: none">Netflix is facing the threat of blurring between linear and streaming content.It must also navigate market changes and churn while balancing customer choice and business value in the face of macroeconomic and geopolitical challenges.Netflix must find a way to stay competitive in the ever-changing media landscape.

Intel Corporation

analytical services

Intel Corporation

This strategic analysis was built completely automatically by the SWOT Bot

Deep Dive

Intel's engineers are able to create value

Key insight

Intel's technology leadership, strong balance sheet, and efficient supply chain are key strengths that will help the company succeed in the long term. These strengths will allow Intel to continue to drive innovation and maintain a competitive edge in the market.

Strategic moves for Intel: from cost-cutting to market-share gains

TOWS matrix - strategic recommendations for Intel Corporation

Maxi-Maxi Strategy (S O)	Mini-Maxi Strategy (W O)
Intel should focus on increasing its market share in the semiconductor industry and on making efficiency gains that will lead to savings of \$3 billion by 2023. The company's strengths—including its RibbonFET progress, world-class engineers, and strong balance sheet—give it a competitive advantage that it should leverage to achieve these goals.	Given that Intel is facing weaknesses in terms of sales, technology and market share, the company should focus on opportunities in areas such as efficiency gains and the semiconductor market. In particular, Intel should focus on increasing its market share in the semiconductor industry and improving its technology in order to stay ahead of its competitors.
Maxi-Mini Strategy (S T)	Mini-Mini Strategy (W T)
From the TOWS analysis, it is clear that Intel's strengths lie in its technological advances and strong financial position. In order to maintain its position in the semiconductor industry, Intel must continue to invest in research and development in order to create new and innovative products. Additionally, Intel must focus on expanding its margin segments and continue to generate strong financial results.	-Address quality issues and improve technology to catch up to competitors -Fix supply chain problems -Focus on regaining market share from AMD

So they're with the capability to look now at the **Intel leadership process** technologies as they make those decisions.

It's what engineers do, and we have the best engineers on the planet.

Strategic SWOT analysis | by SWOT Bot

Strategic SWOT analysis | by SWOT Bot

Augmentation of traditional executive tasks provides massive improvements in efficiency

Generative AI – Use Cases for Executives



Task	Description	Type of automation
💡 Strategic advice	Suggest / describe strategic options and highlight implications (based on industry case studies)	Custom data analytics
✉️ Email sorting	Automatically sort with large inboxes and distribute emails appropriately; deal with others automatically. Relevant building block for many other use cases.	RPA++
📅 Task Prioritisation	Help case workers prioritise tasks (email; inbox etc.) based on content and process understanding in an organisation	RPA++
🕒 Action Follow-Up	Monitor (sent) emails and other data flows to automatically follow-up on tasks if nothing has happened in a given timeframe.	RPA++
📝 Meeting summarisation	Summarise meetings and monitor action points / check for follow-up	Custom reporting
🔍 Enterprise Search (intranet)	Better search of internal documents via language interface. Automatic summarisation.	Semantic Search
🌐 Enterprise Search (external)	Better search of companies' websites/catalogue.	Semantic Search
📁 Contact management	Automatically summarize email conversations, suggests follow-ups / potential answers	Data reconciliation
📖 Knowledge Research	Support report creation in a multi-step process: 1) generate outline, 2) add specific details / sources, 3) translate into full report	Custom data analytics

GPT-4 + Knowledge Graph: New quality of Customer communication and interaction




Kamera- & Produktionstechnik Kamerazubehör Objektive Post & IT Licht Ton Speichermedien Demo & Used

Sie sind hier: Kamera- & Produktionstechnik / Camcorder / Digital Cine Cam

Z-CAM E2-F8 (EF)

8K Cine-Kamera, Vollformat CMOS Sensor, EF-Mount



Artikelnummer: 12286262

€ 6.357,98
Brutto € 7.566,00

Bestpreis Garantie 100 Tage Zahlergüdel Produkt Schutz Vollkasko Schutz

Lieferzeit: 3-7 Werktage

1 In den Warenkorb

Beschreibung Zubehör (5) Beratung

Produktinformationen "Z-CAM E2-F8 (EF)"

Mit der 4K-CineKamera E2 brachte Z-CAM schon eine super Preis-Leistungs-Kam einer 4K Auflösung bei 120fps, 10-Bit-Farben und einem auf alle Situationen an nicht genug und legt nicht nur einer, sondern drei Kameras nach. Dazu geht einem Vollformat CMOS Sensor atemberaubende Aufnahmen garantiert.

Hauptmerkmale

- 8K Auflösung
- 10-bit Farbtiefe
- Vollformat CMOS Sensor
- Dual Native ISO
- 28AW Unterstützung
- EF Objektivmount
- Gigabit Ethernet für Daten, Steuerung & Live-Streaming

Lieferumfang

Was willst du über dieses Produkt wissen?

Ist die Kamera für Livestreaming geeignet?

Ja, die Z-CAM E2-F8 (EF) Kamera ist für Livestreaming geeignet, da sie einen Gigabit Ethernet Anschluss für die Daten, Steuerung und Live-Streaming hat.

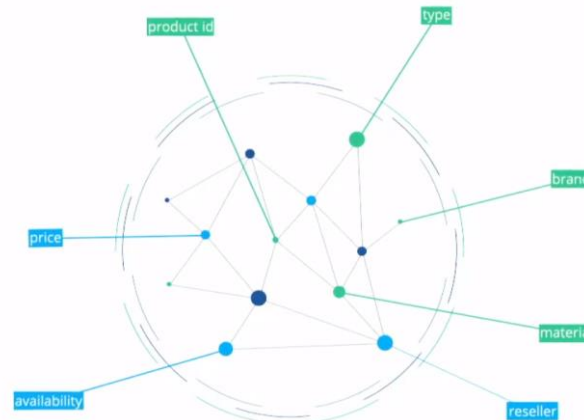
Hast du noch weitere Fragen?

Tippe hier... Senden

Chatbot Pipeline:
Search & Retrieve – After that
generating answers

Zero Shotting
Few Shotting

+ additional Knowledge via
Knowledge Graph:



Fine-Tuning

+

Domain Knowledge

GPT-4 for optimization of E-Commerce



Tasks:

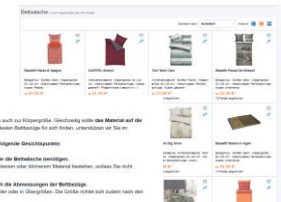
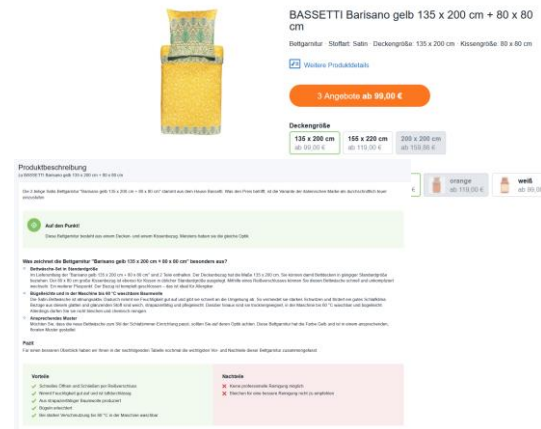
- Generation of category texts
- Product text generation

Business Benefits:

- Efficiency / cost benefits
- 83% savings
- Increase Conversion Rate by 8%

Quality:

- Quality assured
- Domain optimized
- SEO optimized
- Customer-centric
- Personalization



1. Kaufberater

Wählen Sie sich Gedanken darüber, für welche Jahreszeit Sie die Bettwäsche benötigen. Je nach Jahreszeit und Temperatur muss die Bettwäsche aus Baumwolle oder Leinen oder Mischgewebe bestehen, sodass Sie nicht zuwaden oder frieren.

Achtung vor der Krume: Eine Bettwäsche unterscheidet sich die Abmessungen der Bettwäsche. Es gibt viele verschiedene Größen, um sicherzustellen, dass sie für Ihre Größe passen. Die Größe richtet sich nicht nach dem Bett, sondern nach dem Körper.

Bestimmen Sie, für wen Sie die Bettwäsche kaufen. Es gibt viele verschiedene Größen, um sicherzustellen, dass sie für Ihre Größe passen. Die Größe richtet sich nicht nach dem Bett, sondern nach dem Körper.

Wählen Sie die geeignete Bettwäsche. Es gibt viele verschiedene Größen, um sicherzustellen, dass sie für Ihre Größe passen. Die Größe richtet sich nicht nach dem Bett, sondern nach dem Körper.

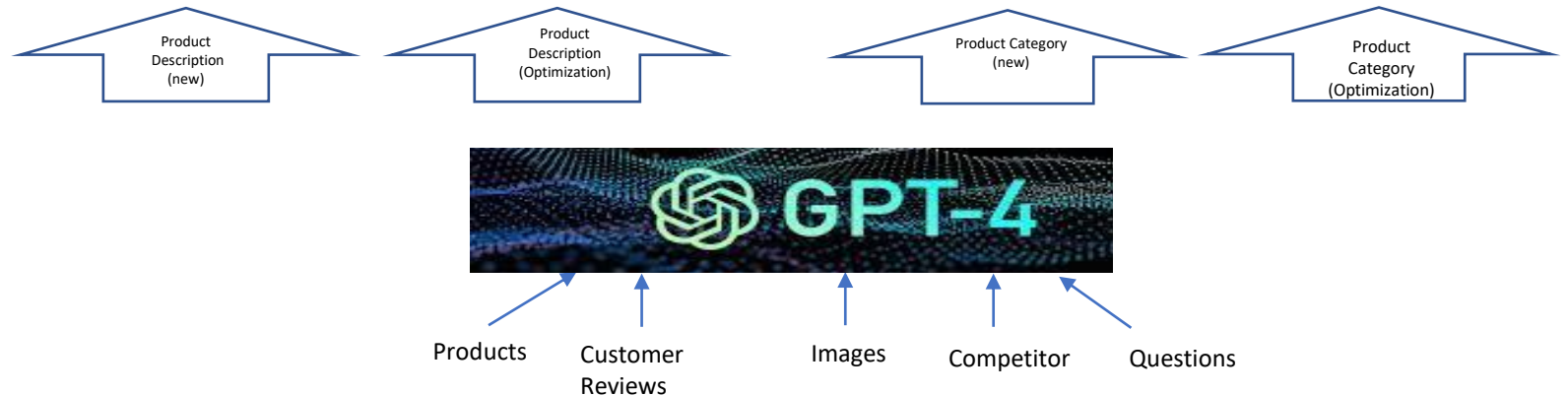
1.1 Bettwäsche-Typen

Bettwäsche kommt in der Regel aus Baumwolle und Leinen. Die Größe richtet sich nicht nach dem Bett, sondern nach dem Körper.

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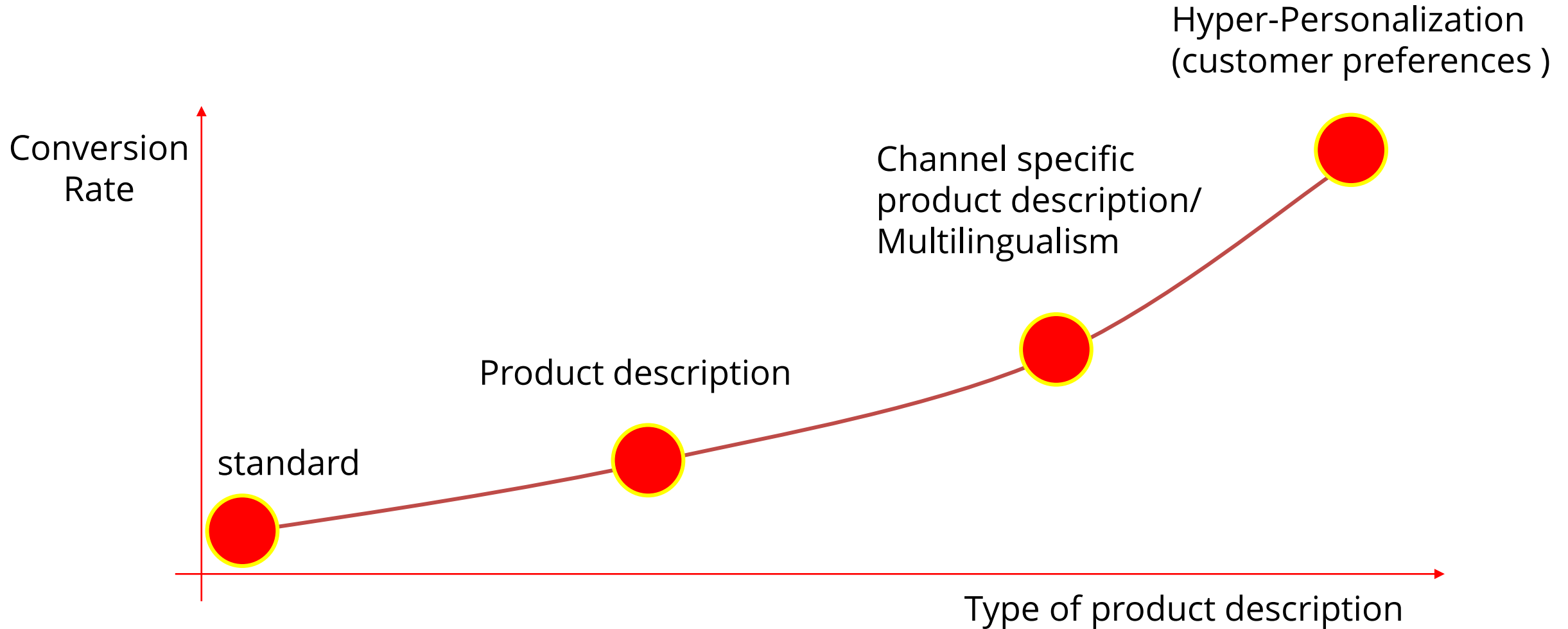
Die Größe richtet sich nicht nach dem Bett, sondern nach dem Körper.



Generative AI for product visuals



On the road towards Hyper-Personalization





**Paradigm Shift: LLM as the
new Business Operating
System**

Auto-GPT tries to increase the autonomy of tasks and processes....



Linas Beliūnas 
@linas.beliunas

AutoGPT is the biggest technology breakthrough ever and **the next BIG thing in AI**.

They're basically **AI agents** that run **autonomously** and complete tasks for you. Today they can already:

- **Build an app/website** from scratch
- **Order your coffee** at Starbucks
- Run your **social media accounts**
- Find and **negotiate a lease**
- Perform **financial analysis**
- Do **market research**

And this is just the tip of the iceberg.

AutoGPT will change every industry and every job forever.

...but a bit overhyped and underdelivered. Execution should not be part of LLM. But the underlying idea of LLM as agents is promising.

Foundation System: Primary & Secondary System

Roles & Rights Concept

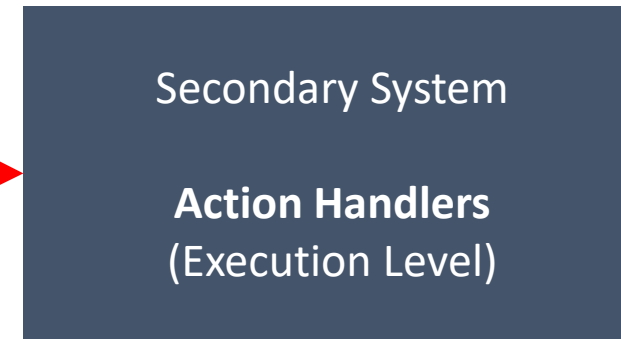
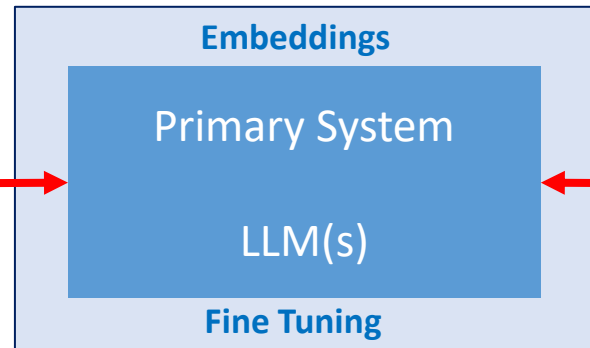
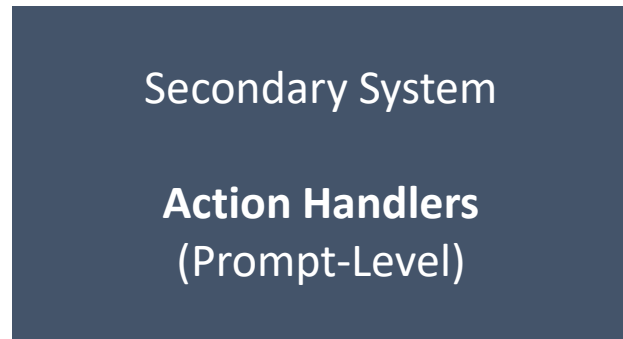
Layer III: Custom LLM Policies

Layer II: Domain-Specific LLM Policies

Layer I: Corporate LLM Policies

Secondary System
Policy Engine

Safety Layer



Data Layer

(Cloud) Infrastructure Layer

LLM-Agents: Level of autonomy will increase! Example Marketing launch campaign for new product





Generative AI: ReThinking Business

Every industry is impacted by GenAI

Verticals

Financial Services	Retail	Media/ Entertainment
Manufacturing	Utilities	Utilities

Value Chain/ Functions

Management		
Marketing	Sales	Procurement
E-Commerce	After Sales/ Service	Legal
HR/ Training	Category Management	IT
Knowledge Management		
Admin/ Communication		
Market Research/ Insights		

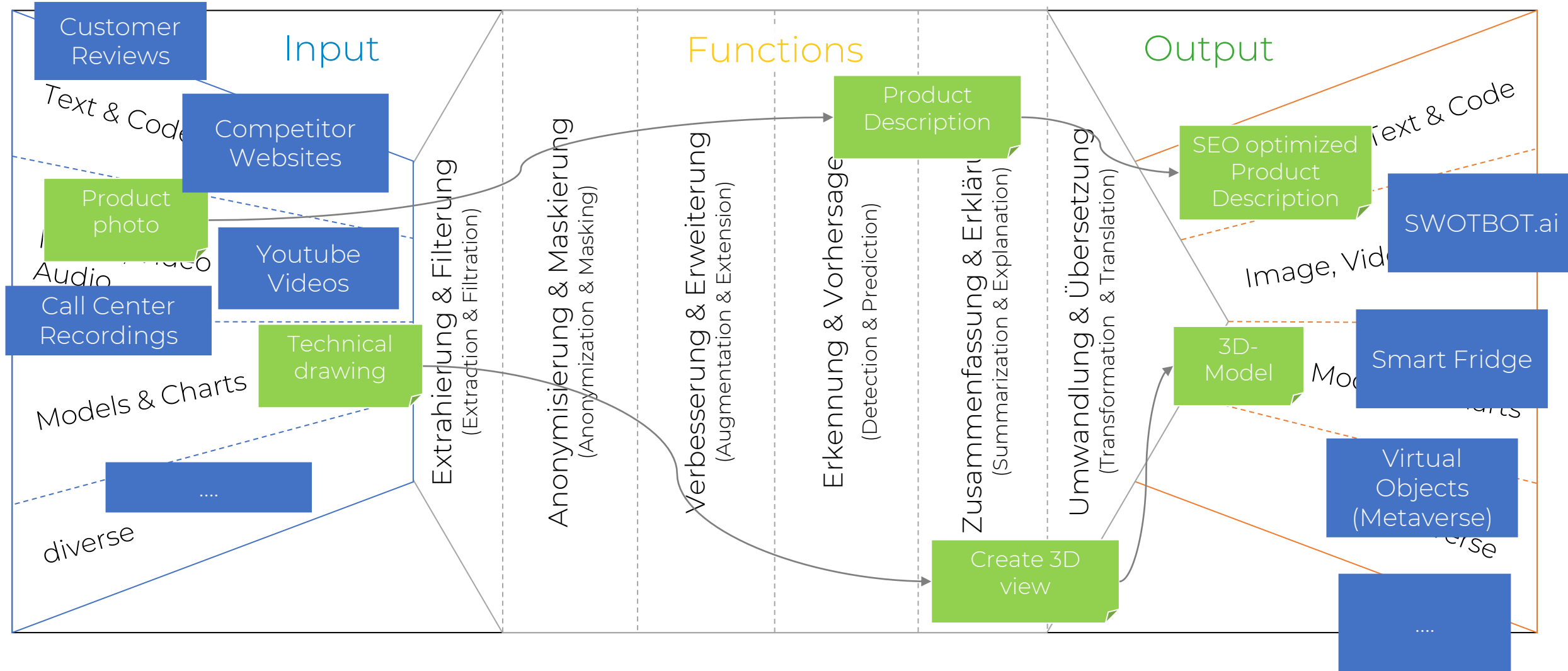
Every industry is impacted by GenAI: Example Retail

Strategic advice (Co-Pilot), SWOT-Bot, New Business Opportunities/ Models, ...		
Content Production, Hyper Personalization, Engagement (Bots), Automated Campaigning...	Sales Bot, Lead Generation and Classification, Automated Campaigning...	RFP Creation, Supplier Negotiations, Tailored Vendor Communication,
Product Description, Recommendation, Virtual Shopping Assistant, ...	24/7/365 Service (Bots), Personalization, Q&A, Automated Campaigning...	Contract Approval/ Generation, Drafting documents,
Personalized Training and Onboarding, Job Descriptions, ..	Category Recommendation, Pricing Optimization, ...	Code Generation, Code Translation, Code Approval,...
Knowledge Co-Pilot, Generation/ Enrichment of Knowledge Graphs, ...		
E-Mail Generation/ Sorting, Meeting Summarization, Action Follow-up/ Scheduling		
Automated Market Research, Customer Insights, Store/ Shop Optimization		



**Generative AI:
ReThinking Business –
Creating new
products and
business**

How to get it done (Business perspective): Generative AI Canvas



New Business Models: Generative AI will create new business opportunities and models

Generative AI as lever for IoT-Solutions

1 Code generation for IoT

Large language models can be used to create, complete or combine IoT code, sourced from code snippets or natural language descriptions.

Example



GitHub Copilot

```
def max_val_list(x):
    max_val = 0
    for i in range(len(x)):
        if x[i] > max_val:
            max_val = x[i]
    return max_val
```

GitHub Copilot

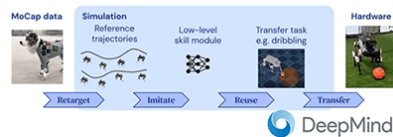
2 Robot control

Generative AI can be used to generate controls and commands of IoT connected robots by capturing motion data from animals or humans.

Example



Deepmind Robot Control Framework



3 Social IoT devices

Generative AI can be used to change the interaction with devices. Devices, for example, could provide the user with answers to complex question.

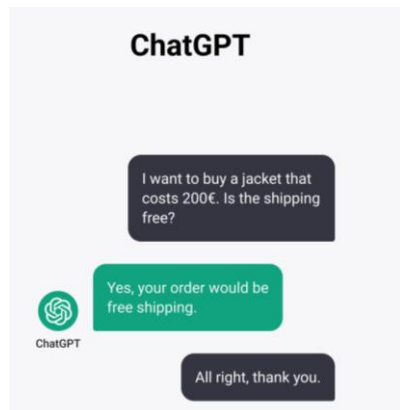
Example




Amazon DialFRED



Generative AI as lever for the Metaverse



Example Smart Fridge: delivering proactively services



**Change has never been this
fast - it will never be this
slow again**

ChatGPT als Job Killer?

Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence

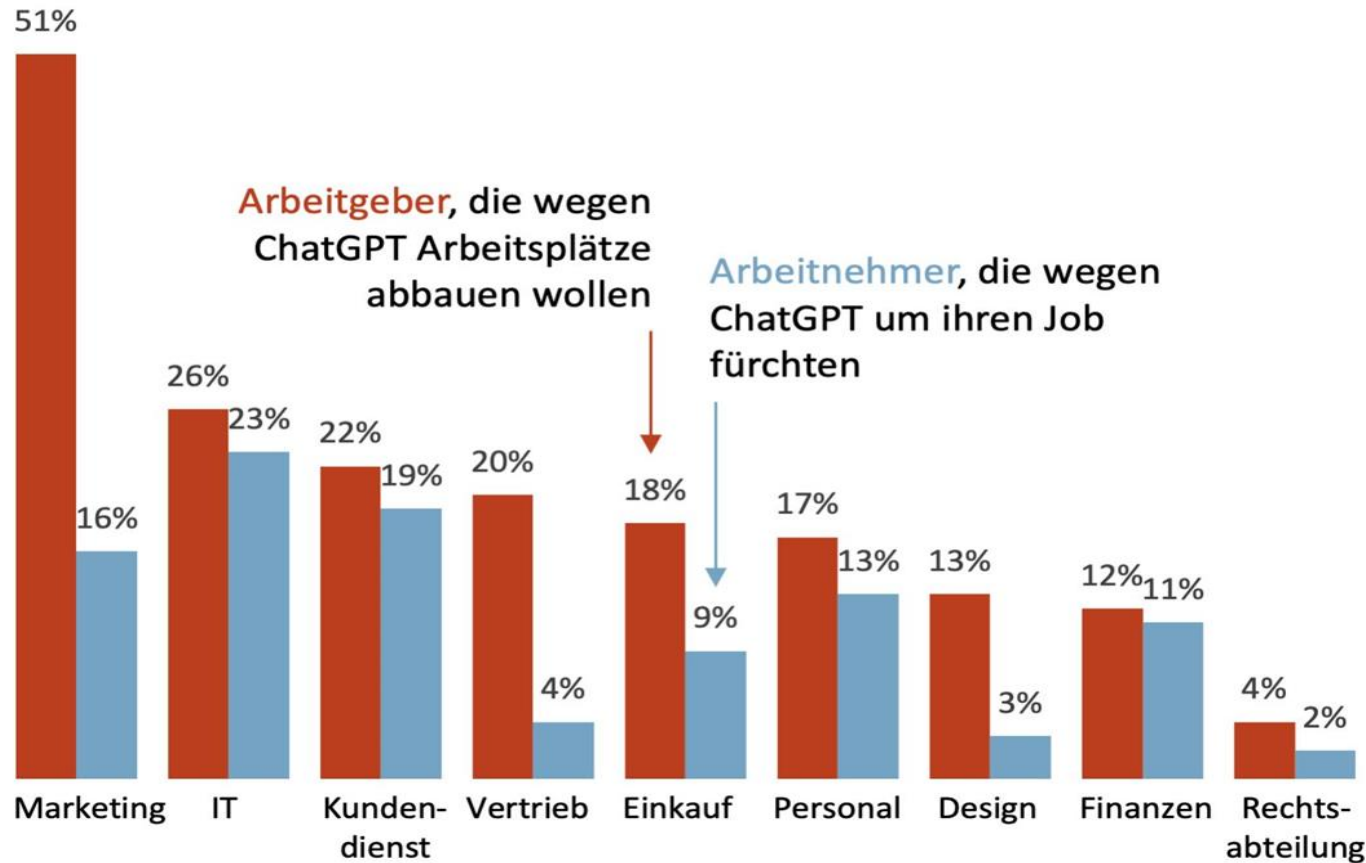
Shakked Noy
MIT

Whitney Zhang
MIT

March 2, 2023

Working Paper (not peer reviewed)

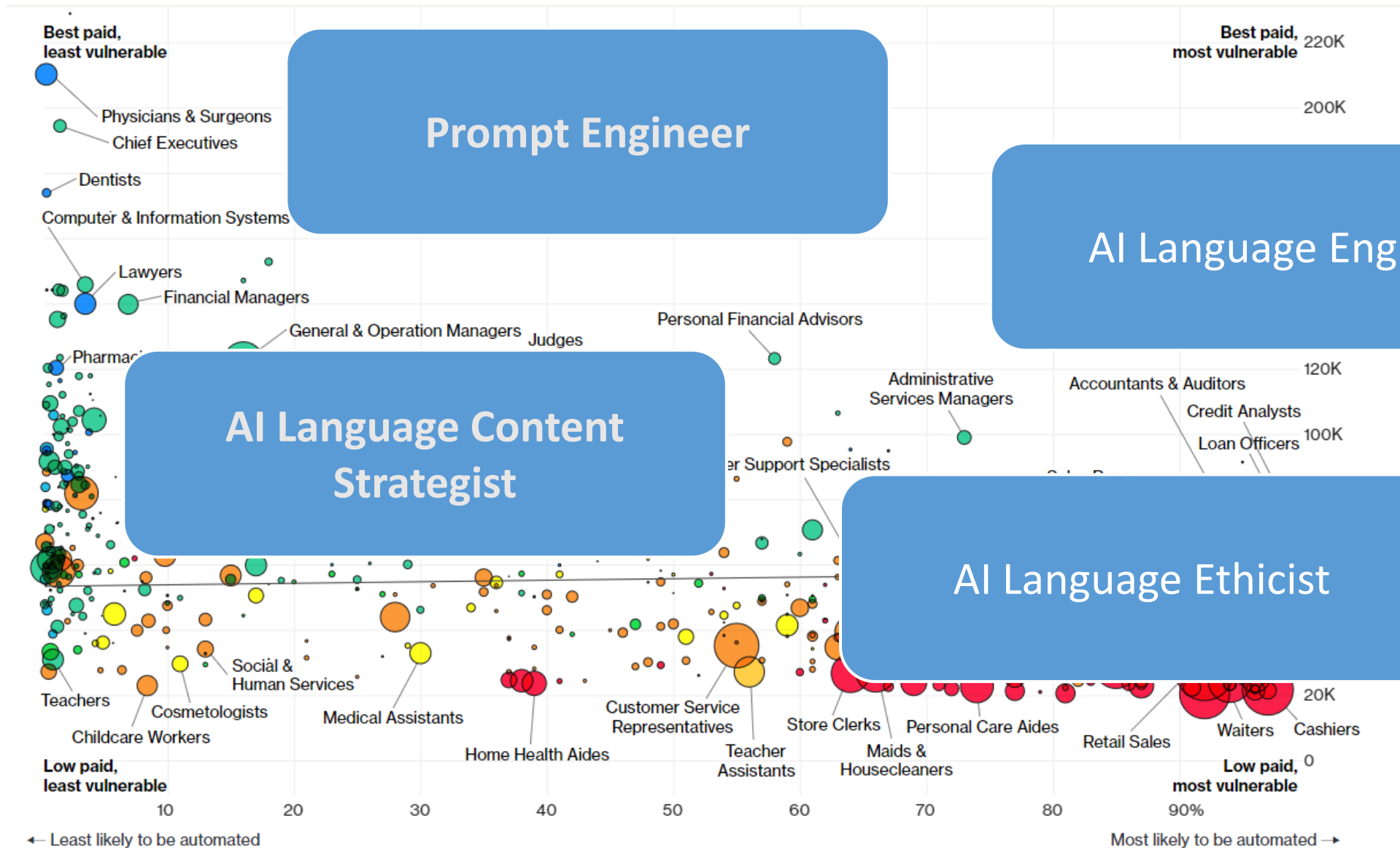
Umfrage unter 500 Arbeitgebern und Arbeitnehmern aus 6 Ländern



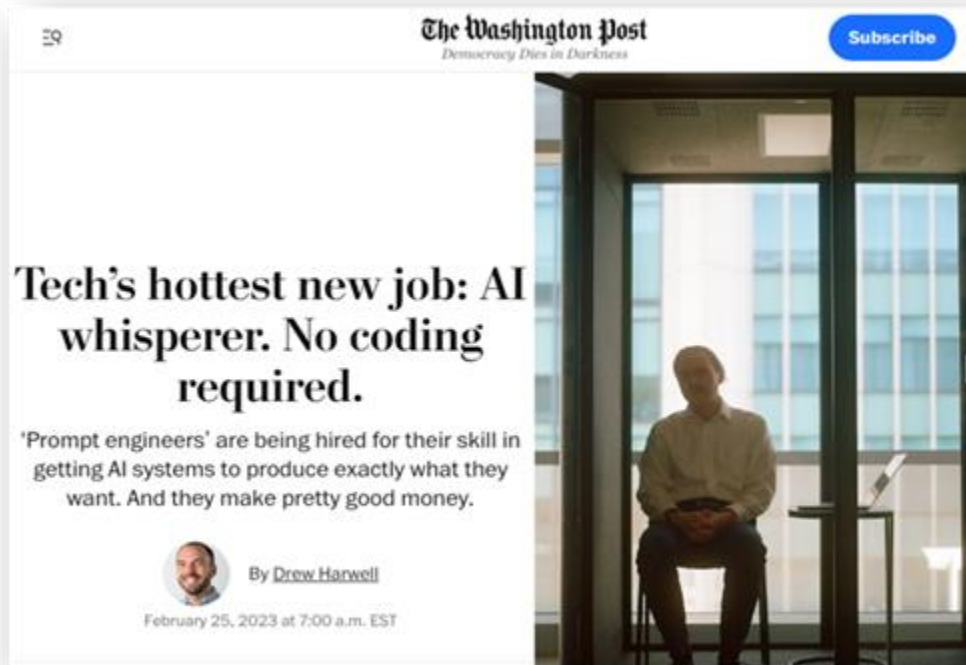
Quelle: Sortlist 2023

- ChatGPT erhöht Produktivität der Wissensarbeiter um 35 Prozent
- Die Teilnehmer waren nach dem Test bereit, im Durchschnitt 0,5 Prozent ihres Monatsgehalts für ein ChatGPT-Abo zu zahlen
- Die Besorgnis über die Automatisierung stieg ebenso wie die Aufregung und der Netto-Optimismus über KI.

Jobs are disrupted and created at the time



PROMPT ENGINEER ALS “HOTTEST NEW JOB”



SPIEGEL Job & Karriere

ChatGPT erschafft neuen Beruf

5+ »Ein Jahresgehalt von 300.000 Dollar ist natürlich verlockend«

Für diesen Job muss man keine Programmiersprache können: Prompt Writers bringen künstliche Intelligenzen dazu, optimale Ergebnisse zu liefern. Ein Literaturwissenschaftler erzählt, wie er sich so ein zweites Standbein aufgebaut hat.

Ein Interview von [Verena Töpfer](#)

24.03.2023, 17.54 Uhr

Jeremiah O... [+ Follow](#)



Career mission:
I connect com...

PREDICTION: The next billion-dollar startup will have only 3 employees.



Teufel

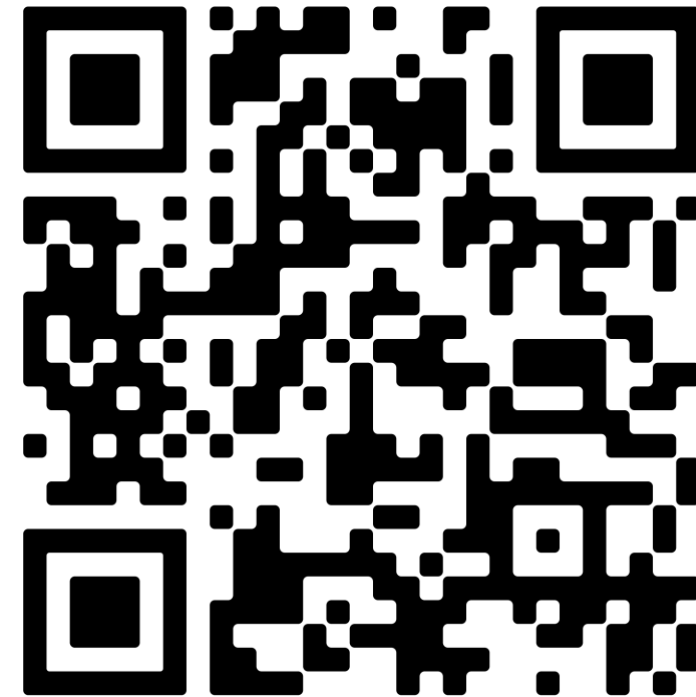
G+J

Miele

arvato
BERTELSMANN

solute^D

AI Foundation
Circle 2023



R T L

grand
centrix

ProSiebenSat.1
Media SE

TELTEC
moving-picture.experts

DB

<http://foundation-circle.ai>

peter.gentsch@intelligence-group.com

Thank you
very much!

COMPANIES		 	 		 							
INVESTMENTS												
CUSTOMERS												
ACADEMICS					BOOKS							
AWARDS					TALKS							

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