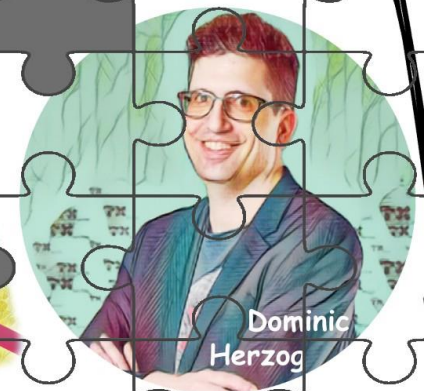


**Navigating the Horizons:  
AI in Media - Balancing Innovation, Quality, and Responsibility**

**ETH Industry Days 2023**

Dr. Dominic Herzog  
Chief Data Scientist  
TX Group AG

[dominic.herzog@tx.group](mailto:dominic.herzog@tx.group)



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Navigating the Horizons



GOLDBACH



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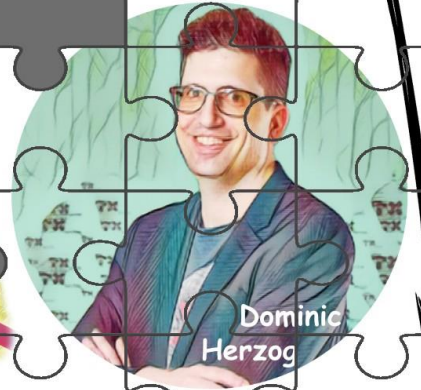
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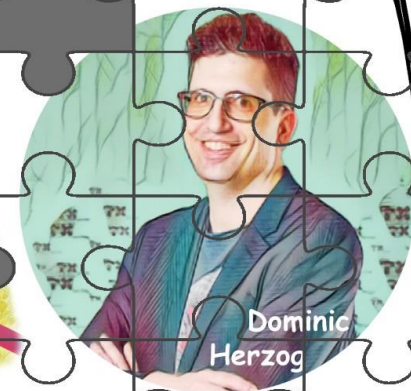
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2023

**Artificial Intelligence**  
Automates tasks requiring human intelligence, make decisions on their own and operates without human intervention



Generative AI



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# Navigating the Horizons



## GOLDBACH



markets

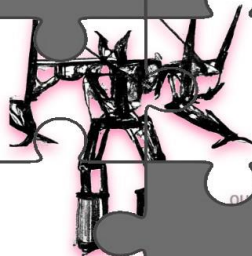
ventures

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2023

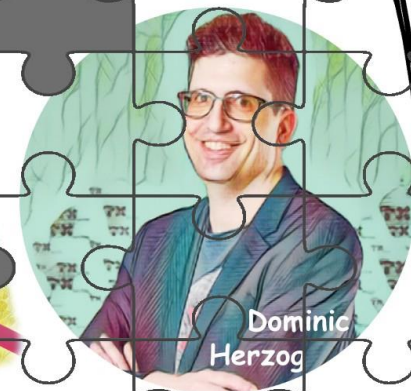


word embeddings  
attention  
dualism

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# AI

## Generative AI



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# Navigating the Horizons



## GOLDBACH



markets

ventures

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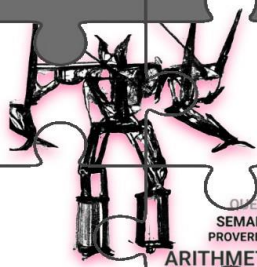
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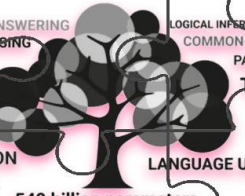


word embeddings  
attention mechanism

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# AI

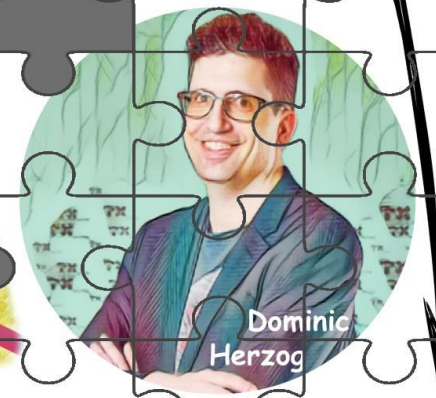
- QUESTION ANSWERING
- SEMANTIC PARSING
- PROVERBS
- ARITHMETIC
- CODE COMPLETION
- GENERAL KNOWLEDGE
- READING COMPREHENSION
- SUMMARIZATION
- LOGICAL INFERENCE CHAINS
- COMMON-SENSE REASONING
- PATTERN RECOGNITION
- TRANSLATION
- DIALOGUE
- JOKE EXPLANATIONS
- PHYSICS QA
- LANGUAGE UNDERSTANDING



540 billion parameters

## Generative AI

Effects of scaling



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# Navigating the Horizons



## GOLDBACH



markets

ventures

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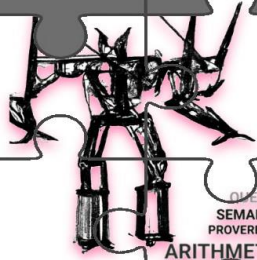
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## Responsibility & Trust

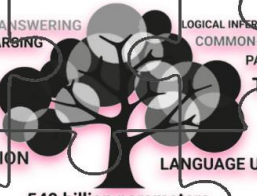


word embeddings  
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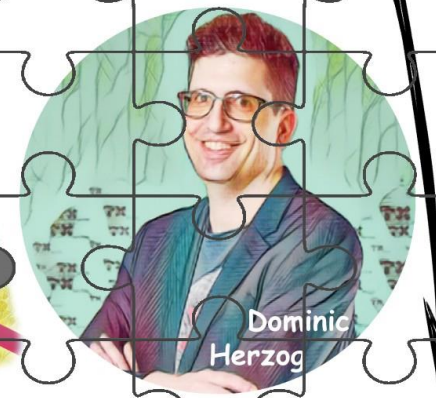
QUESTION ANSWERING  
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CODE COMPLETION  
GENERAL KNOWLEDGE  
READING COMPREHENSION  
SUMMARIZATION



540 billion parameters

LOGICAL INFERENCE CHAINS  
COMMON-SENSE REASONING  
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## Generative AI



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Effects of scaling



# Navigating the Horizons



## GOLDBACH



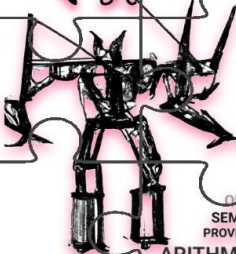
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ETH  
Industry  
Days  
2023

hallucination  
reproductive  
objectiveness



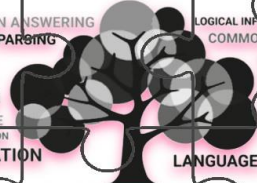
Quality of

word embeddings  
attention mechanism

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Tim

QUESTION ANSWERING  
SEMANTIC PARSING  
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SUMMARIZATION



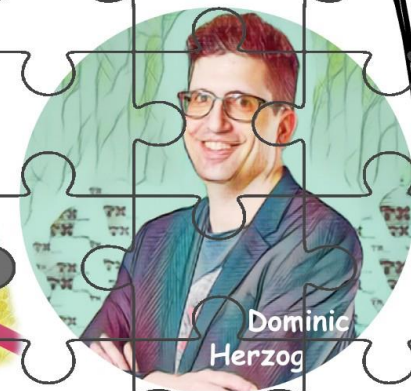
540 billion parameters

LOGICAL INFERENCE CHAINS  
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Generative AI

## Responsibility & Trust



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Effects of scaling





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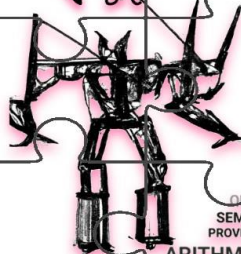
Paid...  
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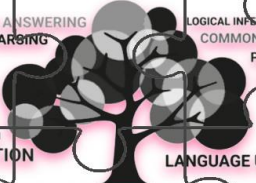
hallucination  
reproducibility  
objectiveness



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540 billion parameters

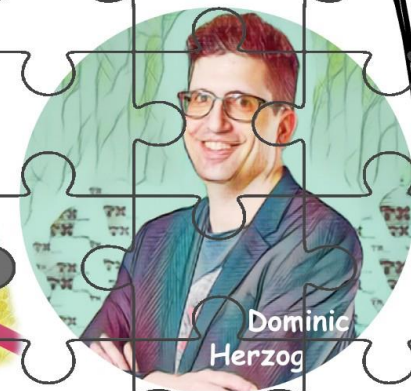
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# AI



**Intelligence Augmentation**  
enhances & supports human decision-making with suggest

## Responsibility & Trust



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### Generative AI - LLM / NLP

### AI in Media - Balancing Innovation, Quality, and Responsibility

Effects of scaling



# Navigating the Horizons



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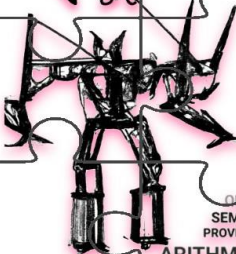
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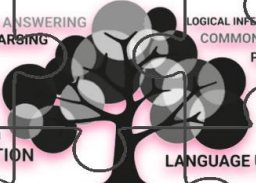
hallucination  
reproductive  
objectiveness



word embeddings  
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540 billion parameters

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JOKE EXPLANATIONS  
PHYSICS QA  
LANGUAGE UNDERSTANDING

# AI/IA

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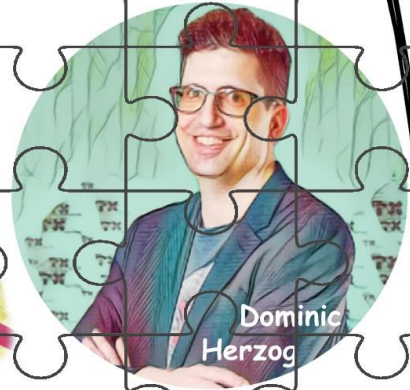
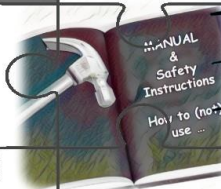
## Generative AI - LLM / NLP

## AI in Media - Balancing Innovation, Quality, and Responsibility

# Responsibility & Trust

## Guidelines

- Transparency
- Dos & Don'ts
- in/out of the loop
- IA or AI



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Effects of scaling



# Navigating the Horizons



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Industry  
Days  
2023



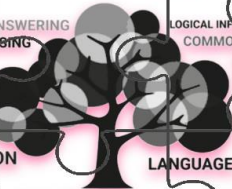
hallucination  
reproductive  
objectiveness

Quality of

word embeddings  
attention mechanism

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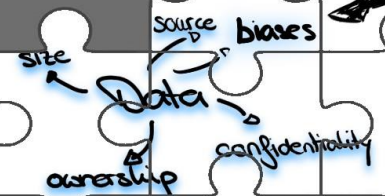
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540 billion parameters

# AI/IA

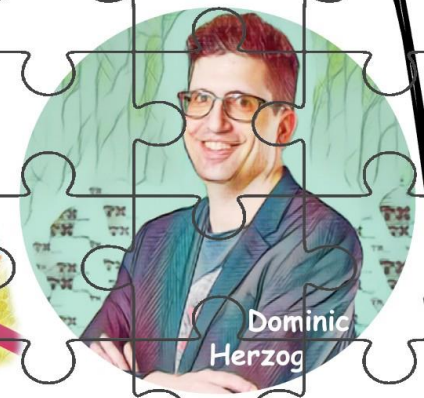
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# Navigating the Horizons



## GOLDBACH



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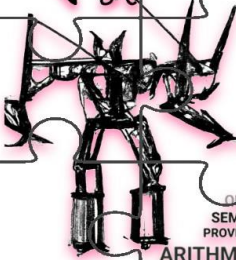
ETH  
Industry  
Days  
2023

Business Process



Common need  
→ content, BLP & LUT  
→ e.g. talk to your documents

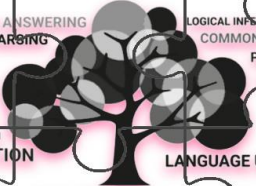
hallucination  
reproducibility  
objectiveness



word embeddings  
attention mechanism

Artificial Intelligence  
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QUESTION ANSWERING  
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ARITHMETIC  
CODE COMPLETION  
GENERAL KNOWLEDGE  
READING COMPREHENSION  
SUMMARIZATION



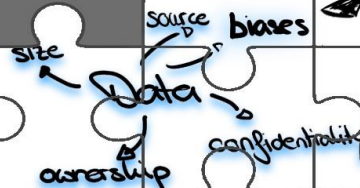
540 billion parameters

LOGICAL INFERENCE CHAINS  
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LANGUAGE UNDERSTANDING

# AI/IA



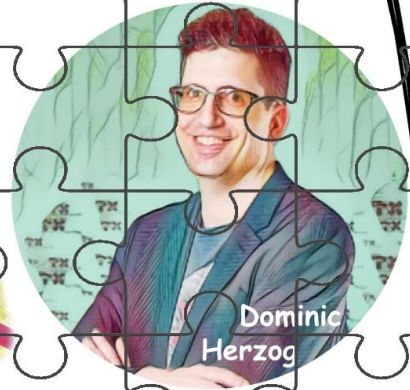
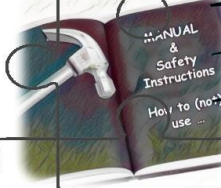
Intelligence Augmentation  
enhances & supports human decision-making with suggestions



## Responsibility & Trust

### Guidelines

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Effects of scaling

## Generative AI - LLM / NLP

## AI in Media - Balancing Innovation, Quality, and Responsibility

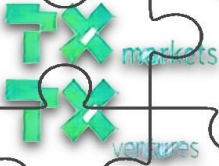


# Navigating the Horizons

improve our products & build (new) USPs



## GOLDBACH



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... Media



Expb  
end

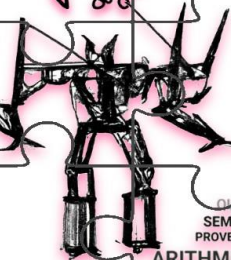
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### Business Process



Common need  
→ content, BLP & LUT  
→ e.g. talk to your documents

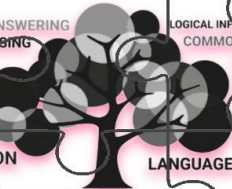
hallucination  
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word embeddings  
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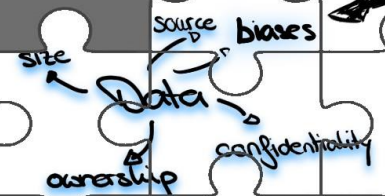
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540 billion parameters

# AI/IA

**Intelligence Augmentation**  
enhances & supports human decision-making with suggestions



## Responsibility & Trust

### Guidelines

- Transparency
- Dos & Don'ts
- in/out of the loop
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Effects of sealing

### Generative AI - LLM / NLP

### AI in Media - Balancing Innovation, Quality, and Responsibility

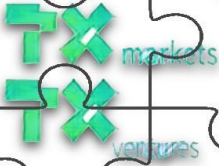


# Navigating the Horizons

improve our products & build (new) USPs



## GOLDBACH



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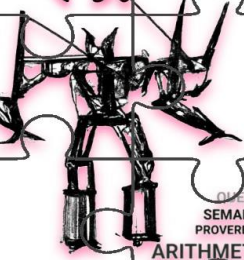
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### Business Process



Common need  
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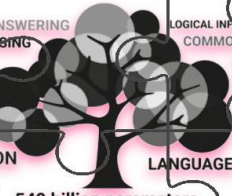
hallucination  
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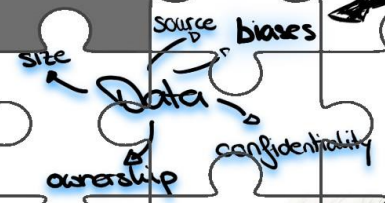
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540 billion parameters

# AI/IA

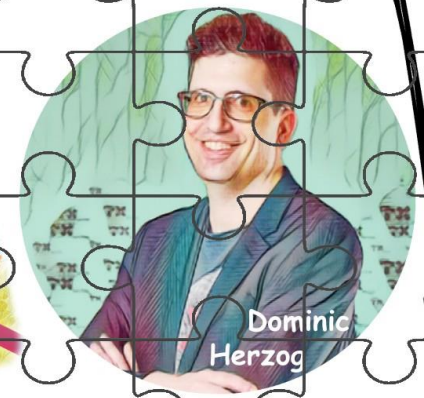
Intelligence Augmentation  
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## Responsibility & Trust

### Guidelines

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Effects of scaling

### Generative AI - LLM / NLP

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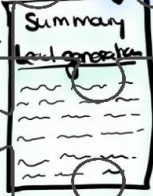
# Navigating the Horizons



## GOLDBACH TX markets ventures

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... Media

improve our products & build (new) USPs



faithfulness

exploit recommend  
Metatags  
Tags  
Categories  
entity extraction



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Business Process

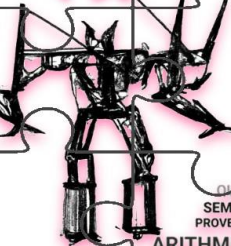


Common need  
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hallucination  
reproductive objectiveness

Quality of



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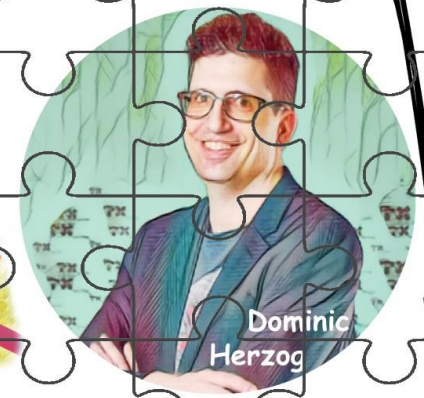
Intelligence Augmentation  
enhances & supports human decision-making with suggestions

source biases  
ownership  
confidentiality

## Responsibility & Trust

Guidelines

- Transparency
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- QUESTION ANSWERING
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540 billion parameters

Effects of scaling

## Generative AI - LLM / NLP

## AI in Media - Balancing Innovation, Quality, and Responsibility



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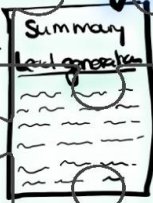
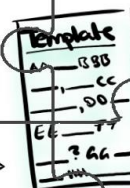


## GOLDBACH



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improve our products & build (new) USPs



faithfulness

exploit recommend  
Metatags  
Tags  
Categories  
rest ons



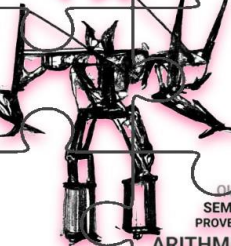
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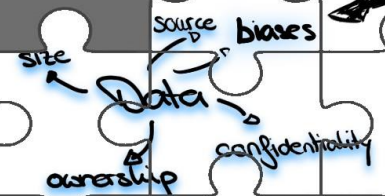


word embeddings  
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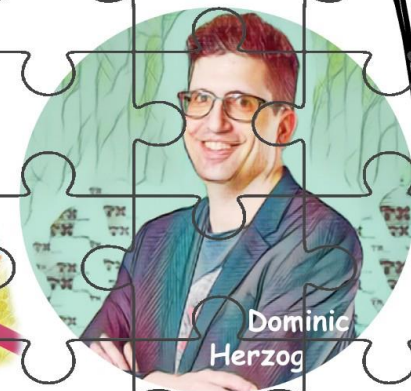
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540 billion parameters

Effects of scaling

## Generative AI - LLM / NLP

## AI in Media - Balancing Innovation, Quality, and Responsibility





# Navigating the Horizons



## GOLDBACH



Paid...  
... Media  
Commuter...

Advertisement

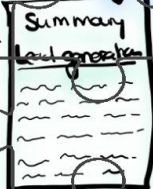
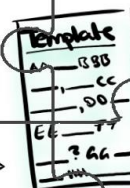
lid

improve our products & build (new) USPs

Research  
Media Technology Center @ ETH



create



fairness

exploit recommend  
Metatags  
Tags  
Categories  
rest ons

entity extraction



stb

ETH  
Industry  
Days  
2023

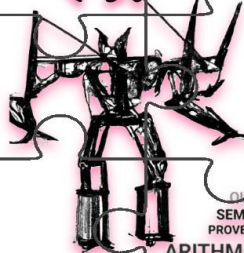
Business Process



Common need  
→ content, BLP & LUT  
→ e.g. talk to your documents

hallucination  
reproductive  
objectiveness

Quality of

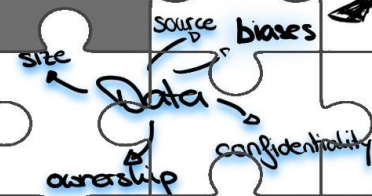


word embeddings  
attention mechanism

Artificial Intelligence  
Automates tasks requiring human intelligence, make decisions on their own and operates without human intervention

# AI/IA

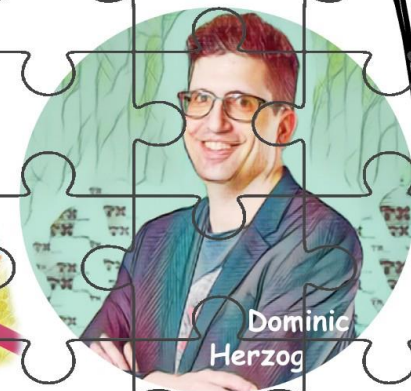
Intelligence Augmentation  
enhances & supports human decision-making with suggestions



## Responsibility & Trust

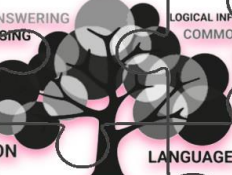
### Guidelines

- Transparency
- Dos & Don'ts
- in/out of the loop
- IA or AI



Dominic Herzog

Effects of scaling



540 billion parameters

## Generative AI - LLM / NLP

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# Navigating the Horizons



## GOLDBACH



improve our products & build (new) USPs

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Paid...  
... Media

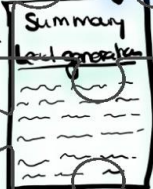
Commuter...

Advertisement

### guidelines, visions & principles

visibility of women

Meta-  
Tags  
Categories  
interests  
entity extraction



faithfulness



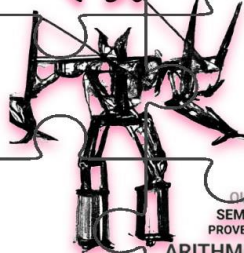
ETH Industry Days 2023

### Business Processes



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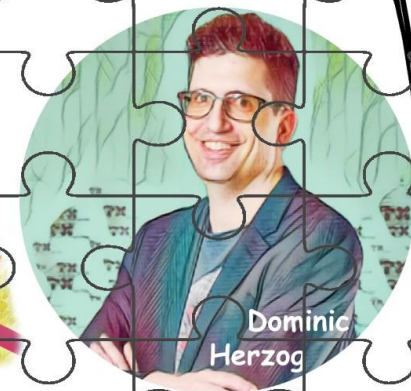
# AI/IA

Intelligence Augmentation  
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## Responsibility & Trust

### Guidelines

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Dominic Herzog

Effects of scaling



540 billion parameters

### Generative AI - LLM / NLP

### AI in Media - Balancing Innovation, Quality, and Responsibility



# Navigating the Horizons



## GOLDBACH



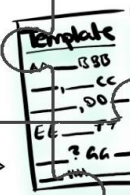
Paid...  
... Media

Commuter...

Advertisement

improve our products & build (new) USPs

Research  
Media Technology Center @ ETH



faithfulness



guidelines, visions & principles

visibility of women

Meta-Data  
Tags  
Categories  
interests  
entity extraction



Year	Value
2012	16%
2021	25%
2022	34%

split by gender of



W02 25%  
| TX 20% - 25%  
W27 15%

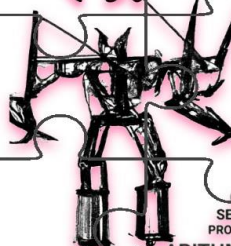
Qualität der Medien 2021/3



Text Images

Common need  
→ content, BLP & LUT  
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hallucination  
reproducibility  
objectiveness



word embeddings  
attention mechanism

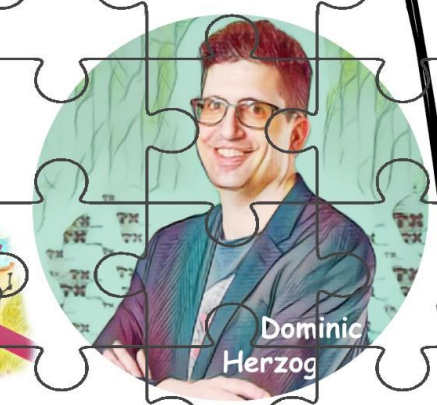
Artificial Intelligence  
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# AI/IA

Intelligence Augmentation  
enhances & supports human decision-making with suggestions

Guidelines

- Transparency
- Dos & Don'ts
- in/out of the loop
- IA or AI



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## Responsibility & Trust

source biases



- QUESTION ANSWERING
- SEMANTIC PARSING
- PROVERBS
- ARITHMETIC
- CODE COMPLETION
- GENERAL KNOWLEDGE
- READING COMPREHENSION
- SUMMARIZATION
- LOGICAL INFERENCE CHAINS
- COMMON-SENSE REASONING
- PATTERN RECOGNITION
- TRANSLATION
- DIALOGUE
- JOKE EXPLANATIONS
- PHYSICS QA
- LANGUAGE UNDERSTANDING

540 billion parameters

## Generative AI - LLM / NLP

## AI in Media - Balancing Innovation, Quality, and Responsibility

ETH  
Industry  
Days  
2023

Effects of sealing



# Navigating the Horizons



## GOLDBACH TX

markets  
ventures

Paid... Commuter... Advertisement  
... Media

improve our products & build (new) USPs

Research Media Technology Center @ ETH



faithfulness



guidelines, visions & principles

visibility of women

Meta-Data Tags Categories - entity extraction  
interests



Year	Percentage
2012	16%
2021	25%
2022	34%

Year	Male (%)	Female (%)
2012	22%	30%
2021	25%	35%
2022	30%	42%

split by gender of the author (first name)

persistent gap { Time section

Business Processes

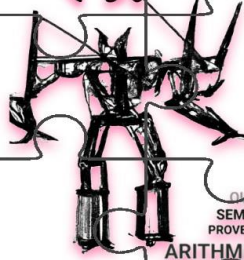


Common need  
-> content, BLP & LUT  
-> e.g. talk to your documents

W02 25%  
| TX 20% - 25%  
W27 13%

Qualität der Medien 2021/3

hallucination  
reproducibility  
objectiveness



word embeddings  
attention mechanism

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# AI/IA

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enhances & supports human decision-making with suggestions

## Responsibility & Trust

Guidelines

- > Transparency
- > Dos & Don'ts
- > in/out of the loop
- > IA or AI



Dominic Herzog

Effects of scaling

- QUESTION ANSWERING
- SEMANTIC PARSING
- PROVERBS
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- LANGUAGE UNDERSTANDING

540 billion parameters

## Generative AI - LLM / NLP

## AI in Media - Balancing Innovation, Quality, and Responsibility



# Navigating the Horizons



## GOLDBACH



Paid...  
... Media

Commuter...

Advertisement

improve our products & build (new) USPs

Research  
Media Technology Center @ ETH

### Business Processes



guidelines, visions & principles

visibility of women



Text  
Images

W02 25%  
ITX 26% - 25%  
W27 13%

2015  
2020  
2021/3  
Qualität der Medien



- comparison

split by gender of the author (first name)

Gender	2012	2021	2022
♂	22%	30%	30%
♀	35%	42%	42%

persistent gap { Time section

Metatags  
Tags  
Categories

interest  
emotions

entity extraction

who/what are we writing about?

### Diaspora

who are we writing for?

### Reproducing Stereotypes

source biases

site

Data

ownership

confidentiality

### Responsibility & Trust

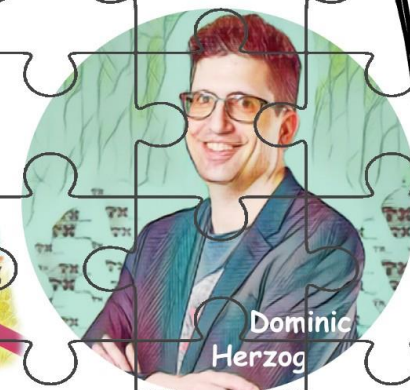
### Guidelines

→ Transparency

→ Dos & Don'ts

→ in/out of the loop

→ IA or AI



Dominic Herzog

Common need  
→ content, BLP & LUT  
→ e.g. talk to your documents

hallucination  
reproductive objectiveness

word embeddings

attention mechanism

Artificial Intelligence  
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# AI/IA

Intelligence Augmentation  
enhances & supports human decision-making with suggestions

### Generative AI - LLM / NLP

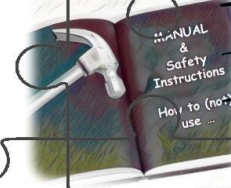
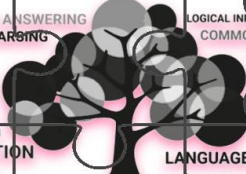
### AI in Media - Balancing Innovation, Quality, and Responsibility

ETH  
Industry  
Days  
2023

Effects of sealing

540 billion parameters

- QUESTION ANSWERING
- SEMANTIC PARSING
- PROVERBS
- ARITHMETIC
- CODE COMPLETION
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- JOKE EXPLANATIONS
- PHYSICS QA
- LANGUAGE UNDERSTANDING





# Navigating the Horizons



## GOLDBACH TX

markets

ventures

Paid...  
... Media

Commuter...

Advertisement

### Business Processes



### guidelines, visions & principles

visibility of women



### Text Images

W02 25%  
ITX 26% - 25%  
W27 13%

Qualität der Medien 2021/3



split by gender of the author (first name)

♂ 22%  
♀ 35%

30% 42%

persistent gap { Time section

Meta-Data  
Tags  
Categories  
interest  
emotions



### Diaspora

Who are we writing for?

### Reproducing Stereotypes

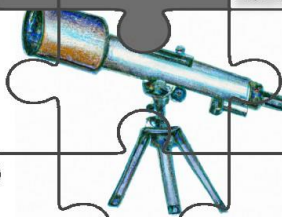


Research  
Media Technology Center @ ETH

faithfulness



ETH  
Industry  
Days  
2023



### Responsibility & Trust

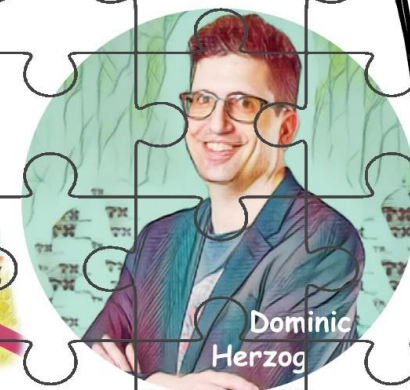
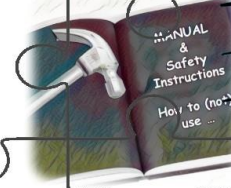
### Guidelines

→ Transparency

→ Dos & Don'ts

→ in/out of the loop

→ IA or AI

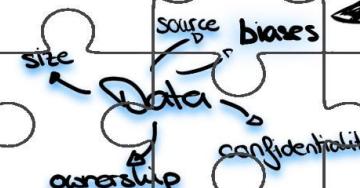


Dominic Herzog

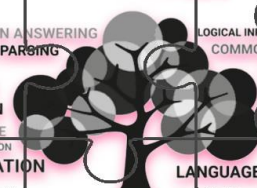
Artificial Intelligence  
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# AI/IA

Intelligence Augmentation  
enhances & supports human decision-making with suggestions



word embeddings  
attention mechanism



540 billion parameters

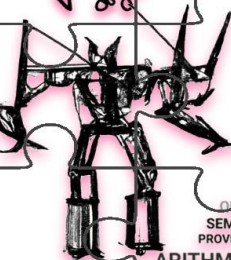
- QUESTION ANSWERING
- SEMANTIC PARSING
- PROVERBS
- ARITHMETIC
- CODE COMPLETION
- GENERAL KNOWLEDGE
- READING COMPREHENSION
- SUMMARIZATION
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- DIALOGUE
- JOKE EXPLANATIONS
- PHYSICS QA
- LANGUAGE UNDERSTANDING

### Generative AI - LLM / NLP

### AI in Media - Balancing Innovation, Quality, and Responsibility

Common need  
→ content, BLP & LUT  
→ e.g. talk to your documents

hallucination  
reproductive  
objectiveness



Effects of sealing



# Navigating the Horizons



## GOLDBACH TX

markets

ventures

Paid...  
... Media

Advertisement

### Business Processes



woz 25%  
| TX 20% - 25%  
| NZ 15%

Qualität der Medien 2021/3

word embeddings  
attention mechanism



540 billion parameters

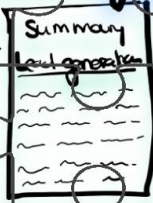
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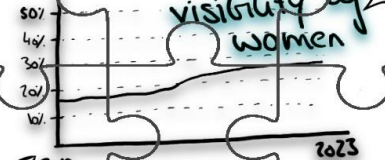
## Generative AI - LLM / NLP

### improve our products & build (new) USPs



### guidelines, visions & principles

visibility of women



2012 16%  
2021 25%  
2023 34%

Text  
Images

split by gender of the author (first name)  
♂ 22%  
♀ 35%  
30% 42%

persistent gap { Time section

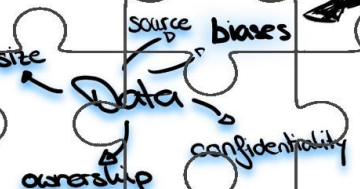
Metatags  
Tags  
Categories

entity extraction  
interest  
emotions

### Diaspora

Who are we writing for?

### Reproducing Stereotypes



### faithfulness

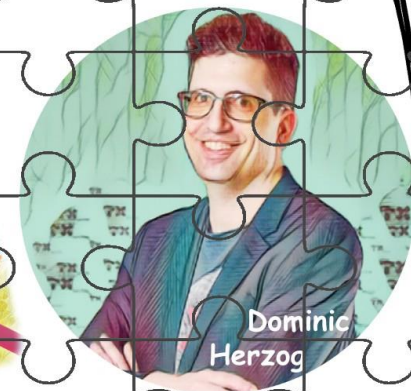
### state of the art

### weaknesses

### Responsibility & Trust

### Guidelines

- Transparency
- Dos & Don'ts
- in/out of the loop
- IA or AI



Dominic Herzog

## AI in Media - Balancing Innovation, Quality, and Responsibility



feasible  
specific USP

scale  
desirable  
required

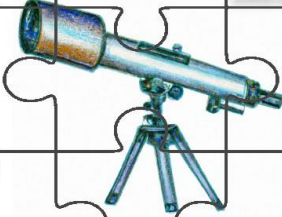
core business  
opportunity

innovate

build

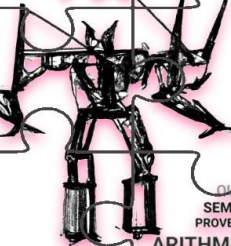
risk control

ETH Industry Days 2023



Effects of sealing

hallucination  
reproductive objectiveness



Common need  
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→ e.g. talk to your documents

Common need  
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# Navigating the Horizons



## GOLDBACH TX markets ventures

Paid... Commuter... Advertisement ... Media

improve our products & build (new) USPs

Research Media Technology Center @ETH

feasible specific USP



scale desirable required state of the art weaknesses risk control build innovate core business opportunity

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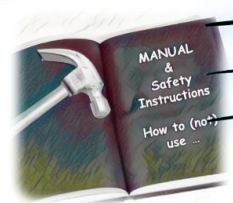
## Responsibility & Trust

Guidelines

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Dominic Herzog

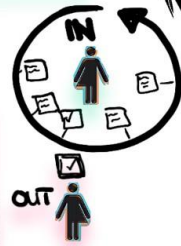


Template  
AA-BBB  
-CC  
EE-FF  
? GG  
HH

Summary level generation

NACHRICHTEN

NEWS



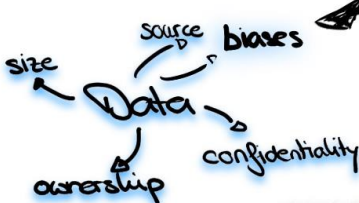
Diaspora



Reproducing Stereotypes

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guidelines, visions & principles

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Text Images

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♂ 22%  
♀ 35%

♂ 30%  
♀ 42%

persistent gap { Time section

W02 25%  
TX 26% - 25%  
W22 13%

Qualität der Medien 2021/3



2012 2023

Artificial Intelligence Automates tasks requiring human intelligence, make decisions on their own and operates without human intervention

# AI/IA



## Generative AI - LLM | NLP

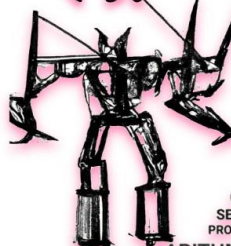
## AI in Media - Balancing Innovation, Quality, and Responsibility

### Business Processes



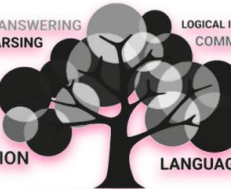
Common need  
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→ e.g. talk to your documents

hallucination  
reproducing objectiveness



word embeddings  
attention mechanism

- QUESTION ANSWERING
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540 billion parameters

Effects of scaling