

---

# KI UND INFRASTRUKTUREN

MEINE WUNSCHLISTE AN DAS RECHENZENTRUM

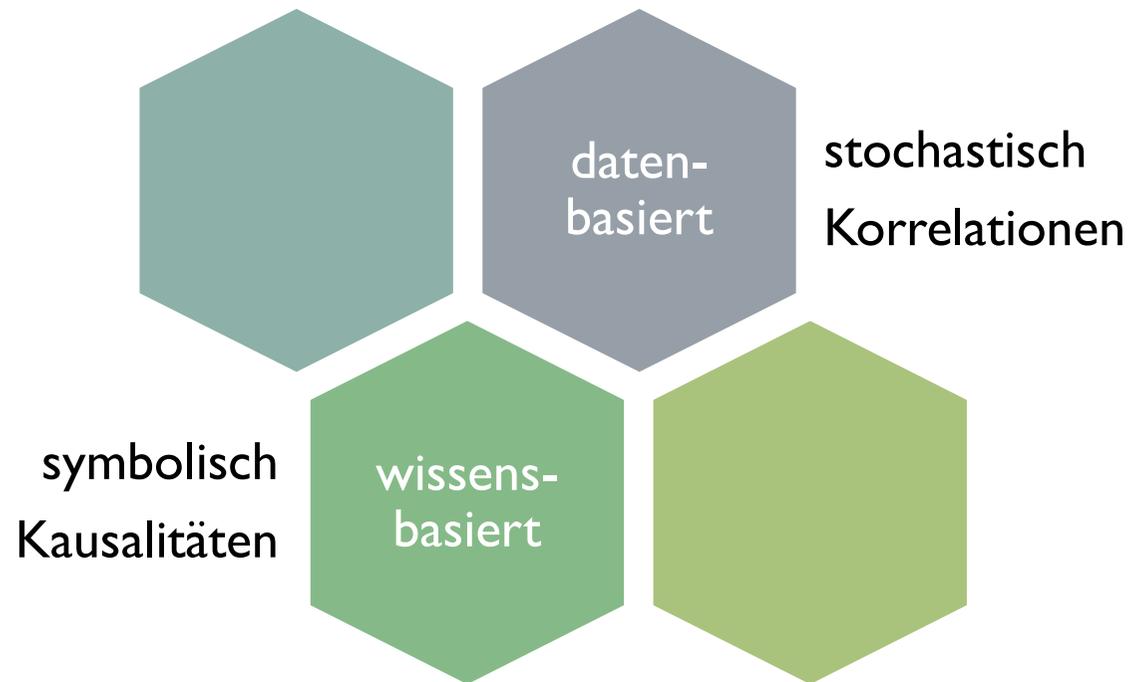
Ulrike Lucke

# EINSATZBEREICHE

- Lehrveranstaltungen
- Forschungsprojekte
- Akademischer Alltag



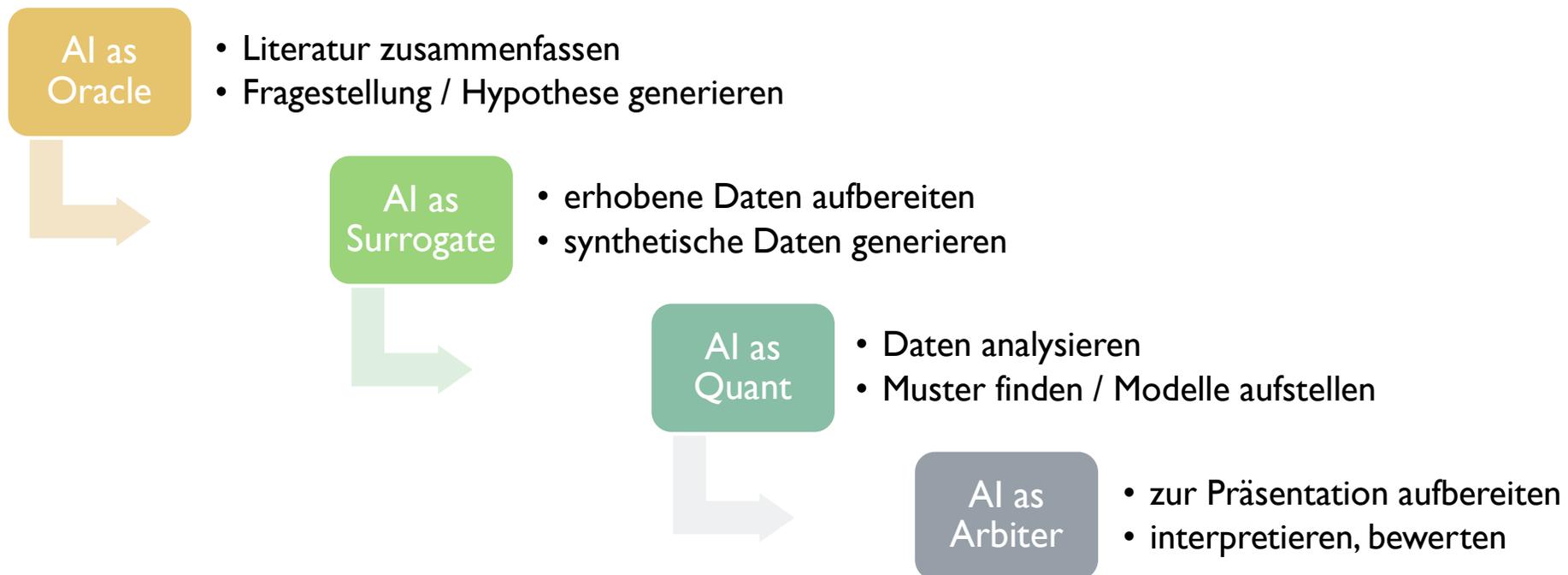
# KÜNSTLICHE INTELLIGENZ



# Die Insel der Forschung

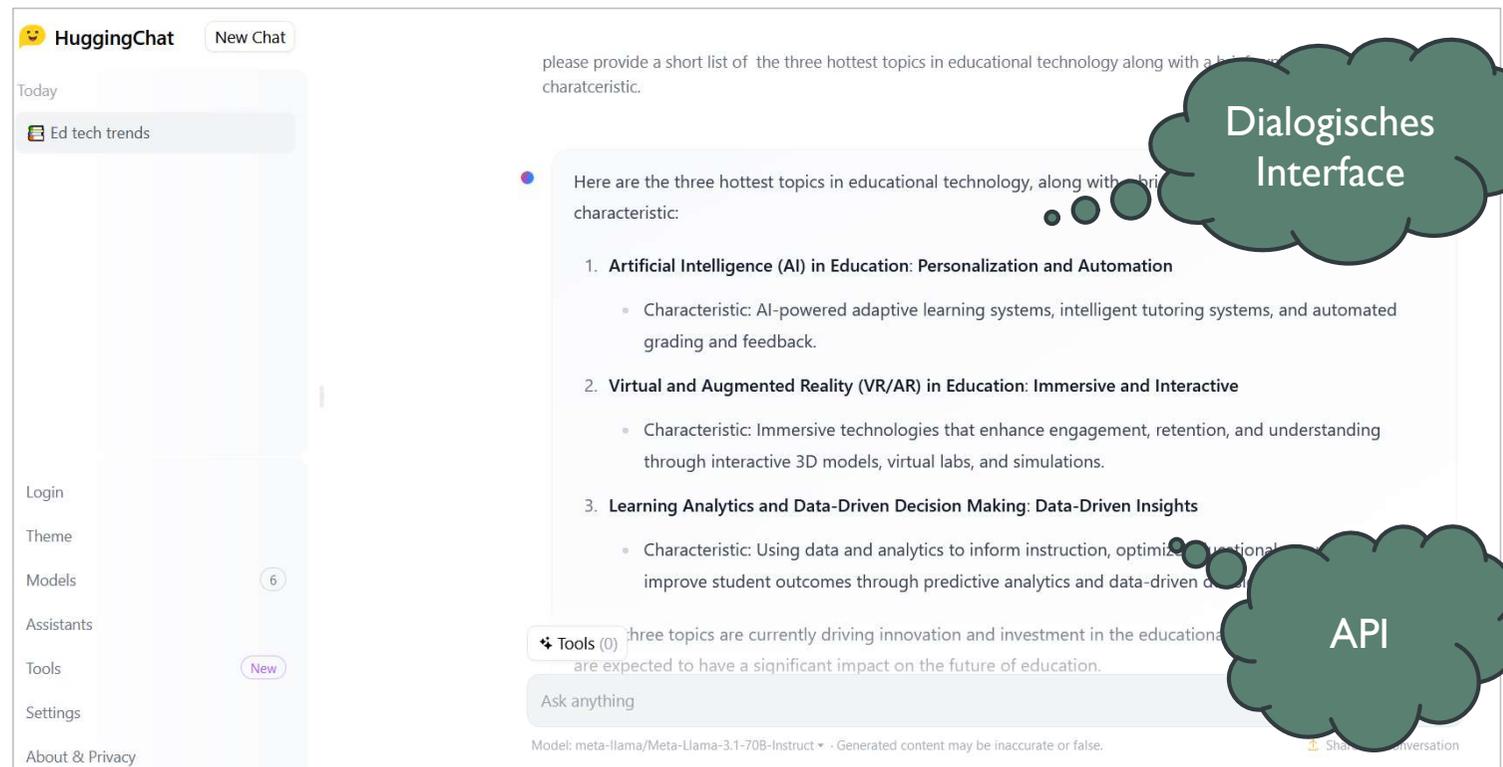


# KI-WERKZEUGE FÜR DIE FORSCHUNG



# BEISPIEL: CHATGPT & Co.

- Recherche
- Einstieg v.a. in fremde Themen
- Referenzen?
- Halluzinationen?



The screenshot shows the HuggingChat interface. On the left is a sidebar with navigation options: Login, Theme, Models (6), Assistants, Tools (New), Settings, and About & Privacy. The main chat area shows a conversation with a user asking for a list of three hottest topics in educational technology. The AI response lists: 1. Artificial Intelligence (AI) in Education: Personalization and Automation; 2. Virtual and Augmented Reality (VR/AR) in Education: Immersive and Interactive; 3. Learning Analytics and Data-Driven Decision Making: Data-Driven Insights. Two green thought bubbles are overlaid on the image: one labeled 'Dialogisches Interface' pointing to the chat area, and another labeled 'API' pointing to the 'Tools' section.

HuggingChat New Chat

Today

Ed tech trends

Login

Theme

Models 6

Assistants

Tools New

Settings

About & Privacy

please provide a short list of the three hottest topics in educational technology along with a brief characteristic.

Here are the three hottest topics in educational technology, along with a brief characteristic:

- Artificial Intelligence (AI) in Education: Personalization and Automation**
  - Characteristic: AI-powered adaptive learning systems, intelligent tutoring systems, and automated grading and feedback.
- Virtual and Augmented Reality (VR/AR) in Education: Immersive and Interactive**
  - Characteristic: Immersive technologies that enhance engagement, retention, and understanding through interactive 3D models, virtual labs, and simulations.
- Learning Analytics and Data-Driven Decision Making: Data-Driven Insights**
  - Characteristic: Using data and analytics to inform instruction, optimize educational experiences, and improve student outcomes through predictive analytics and data-driven decision making.

Tools (0) three topics are currently driving innovation and investment in the educational technology sector. These technologies are expected to have a significant impact on the future of education.

Ask anything

Model: meta-llama/meta-llama-3.1-70b-instruct - Generated content may be inaccurate or false.

Share conversation

Dialogisches Interface

API

# BEISPIEL: ELICIT

“Analyze research papers at superhuman speed. Automate time-consuming research tasks like summarizing papers, extracting data, and synthesizing your findings.”

The screenshot shows the Elicit web interface. At the top, there are navigation links for 'Notebooks' and 'Library', and a search bar containing the query 'what are currently the hottest topics in educational technology?'. Below the search bar, a 'Summary of top 4 papers' section is visible, followed by a paragraph of synthesized text. At the bottom, a list of search results is shown, including 'The Top Five Trends in Edtech According to ISTE 2017' by Torrey Trust and 'Current Trends (and Missing Links) in Educational Technology Research and Practice' by Royce Kimmons. A 'Manage Columns' sidebar is open on the right, and a green callout bubble with the word 'Lizenzen' is positioned over the interface.

# BEISPIEL: RESEARCHRABBIT.AI

Lizenzen

“Just like in Spotify, you can add papers to collections. ResearchRabbit learns what you love and improves its recommendations!”

Datenschutz /  
Souveränität

▶ Never miss a thing

▶ Visualize papers

▶ Discover author networks

▶ Share your collections



# WAS PASSIERT MIT UNSEREN DATEN?

20. September 2024

Datentracking in der W  
Verwendung bzw. Ver  
Wissenschaftsverlag  
Ein Informationspapier d  
für Wissenschaftliche B  
der Deutschen Forsch  
28. Oktober 2021  
Deutsche Forschungsgemeinschaft  
Kennzeichens-Nr. 53175 Bonn - Postfach  
Telefon: +49 228 895-1 - Telefax: +49 228



Sendung verpasst?

Startseite > Wirtschaft > Unternehmen > Nach Streik in Hollywood: Schauspieler stimmen Vertrag mit Studios zu



Nach Streik in Hollywood

## Schauspieler stimmen Vertrag mit Studios zu

Stand: 06.12.2023 08:52 Uhr

Monatelang hatten US-Drehbuchautoren und -Schauspieler gestreikt. Die Autoren fanden mit den Studios bereits eine Einigung. Jetzt stimmte auch die Darsteller-Gewerkschaft einer Vereinbarung zu - unter anderem mit einem Schutz vor KI.

July 29, 2024

## Taylor & Francis AI Deal Sets 'Worrying Precedent' for Publishing

...ore selling access to its data to  
...mprove academic research, but  
...ademic publishing, experts say.



# BEISPIEL: OPEN RESEARCH KNOWLEDGE GRAPH

The screenshot displays the ORKG Ask web interface. At the top left is the ORKG Ask logo. Navigation links for 'Search' and 'My library' are visible. A search bar contains the query 'what is the hottest topic in educational technology?'. Below the search bar are filter options for 'Year' and 'Language'. A search button is present. A yellow warning banner states: 'The answer and the extracted information was obtained with a large language model and might contain errors and inaccuracies. All information presented by ORKG Ask needs to be carefully checked.' Below this is the 'Answer (based on top 5 papers)' section, which provides a summary of educational technology. A 'Feedback' form titled 'What do you think?' is overlaid on the right, with three rating questions: 'The displayed answers are helpful', 'The displayed answers are correct', and 'The displayed answers are complete'. A 'Submit' button is at the bottom of the form. At the bottom of the page, there is a TIB logo and the text 'ORKG Ask is brought to you by TIB'.

ORKG Ask is a scholarly search and exploration system powered by Vector Search, Large Language Models and Knowledge Graphs.

Integration

# WISSENSGRAPHEN, ONTOLOGIEN, TAXONOMIEN ...

gemeinsame  
Weiterentwicklung

The screenshot shows the University of Potsdam website. At the top left is the logo and name 'Universität Potsdam'. Below it is a navigation bar with 'UP entdecken' and a dropdown menu. The dropdown menu is open, showing a list of faculties: Hochschulleitung, Hochschulpolitik, Hochschulsport, Hochschulverwaltung, Humanwissenschaftliche Fakultät, HumboldtArt, Informatik, Informationsverarbeitung und Kommunikation (highlighted), Internationales, Jüdische Studien, Jüdische Theologie, Juristische Fakultät, Klassische Philologie, Klima, Kommunikationswissenschaften, and Kulturelle Begegnungsräume. To the right of the dropdown is a search bar with 'Stichwort' and a search icon. Below the search bar is a 'Filtern' button. At the bottom of the page, there is a date '18. September 2024' and a section for '18.09.2024 - 20.09.2024' with the time '12:30 Uhr' and the text '„Transdisziplinarität: Impulse für und durch Evaluation!“ – 27. Jahrestagung der Gesellschaft für Evaluation (DeGEval)'. There is also an 'iCal' icon in the bottom right corner.

# REASONER & SOLVER

START ALLE VERANSTALTUNGEN MEINE DATENSÄTZE ABMELDEN

## Digital gestützte Lehr- und Raumplanung (DigLeR) für Lehrplaner\*innen der UP (MNF)

 **Raumplanung**

- Unterstützung bei und Optimierung von Raumplanungen

 **Veranstaltungsplanung**

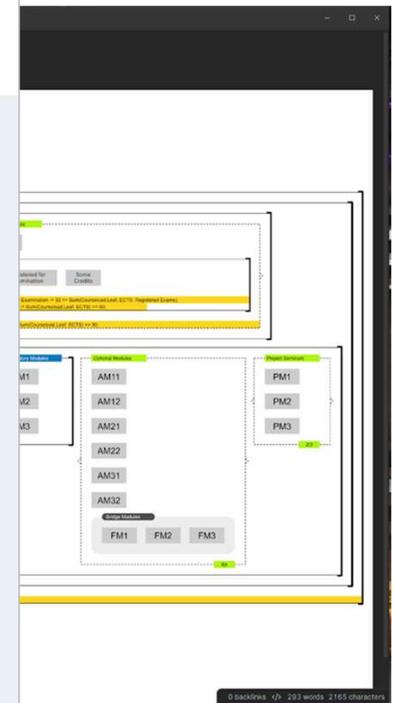
- Unterstützung bei der Veranstaltungsplanung
- Copy & Paste: Veranstaltungen und Planungen kopieren & wiederverwenden

 **Individuelle Unterstützung**

- digital-gestützte Optimierung (ASP solver)

 **Web-Technologien**

- Drupal (CMS) – Datenverwaltung
- ClingoJS – ASP solver (IfI)
- CindyJS – interactive geometry software (IfM)



# DATEN & SOFTWARE GENERIEREN

- Daten bereinigen
- Daten transformieren
- Daten auffüllen
- Daten generieren
  
- Algorithmen generieren
- Tests generieren

In conclusion, the quality of AI-generated algorithm and data can vary greatly depending on their complexity, as well as several other factors. It is essential to carefully evaluate the quality of AI-generated algorithm and data, considering factors such as data quality, algorithm design, computational resources, training data size and diversity, and evaluation metrics.

Tools (0)

Ask anything

Model: meta-llama/... Generated content may be inaccurate or false.

Share this conversation

Kompetenzaufbau

please write a java algorithm that selects the three most fitting options from a list of course offering according to the current study regulation and the individual study progress. define required data structures as necessary.

Here is a Java algorithm that selects the three most fitting options from a list of course offerings according to the current study regulation and the individual study progress.

#### Data Structures

- `Course`: Represents a course offering with its ID, name, credits, and prerequisites.
- `StudyRegulation`: Represents the current study regulation with its ID, name, and required courses.
- `StudentProgress`: Represents the individual study progress of a student with their completed courses and remaining credits.

#### Algorithm

```
import java.util.*;
```

```
// Define the StudyRegulation class
```

```
class StudyRegulation {
```

This algorithm first filters the course offerings to only include courses that are required by the study regulation and not yet completed by the student. Then, it sorts the required courses based on the number of prerequisites already completed by the student. Finally, it selects the top 3 courses with the most prerequisites already completed.

Tools (0)

Ask anything

Model: meta-llama/... Generated content may be inaccurate or false.

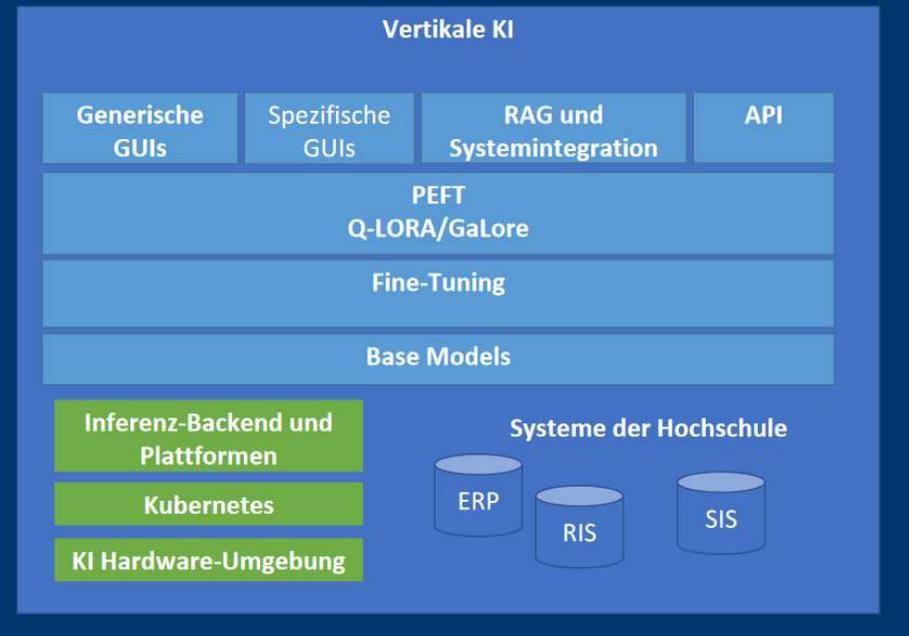
Share this conversation

# EIGENE MODELLE

vgl. Malte Dreyer:  
„KI-Infrastruktur und -Services  
an der Humboldt Universität“



## Vertikale KI



# EIGENE MODELLE UND ANALYSEN

The screenshot displays a Jupyter Book interface. On the left, a sidebar contains the 'QUADRIGA' logo, a search bar, and a navigation menu with sections: 'Waves of the Spanish Flu - Case Study', 'Corpus Collection' (Introduction: Texts as digital objects, Metadata - Conceptual Introduction), and 'Corpus Preparation' (Introduction to Optical Character Recognition (OCR), 'Data Input and Homogenisation', OCR quality). The main content area shows a notebook cell titled '2.1.1 Manually create the 'ground truth' to evaluate against'. The code in the cell is: 

```
ground_truth = input('Please insert corrected string: ')
run restart restart & run all
```

 Below the code is a text input field with the placeholder 'Please insert corrected string:'. A second code cell shows 

```
print(ground_truth)
```

 with 'run restart restart & run all' buttons. The right sidebar contains a 'Contents' table of contents with sections: '1. Types of input data for text corpora', '2. Images into digital text. OCR' (How OCR works, What OCR tools are there, '2.1. Evaluate OCR engine quality' (2.1.1 Manually create the 'ground truth' to evaluate against, 2.1.2 Measure OCR precision, recall and F-measure (Precision in OCR, Recall in OCR, F-measure (F1 Score) in OCR), 2.2 Process the whole corpus of PDF-s with the same OCR engine, 2.3. OCR postprocessing), '3. Getting digital text from the structured markup (XML)'. Below the table of contents are links to 'Introduction to the Post-Correction of OCR output', 'Rule-based Correction OCR output', and 'LLM-based correction of OCR output'. The rightmost panel shows a section titled 'Discussion of the intermediate result' with the text: 'Is this result meaningful and does it actually reflect something? One way to check that is to compare our plot with the actual data about the intensity of the pandemic.' It includes a citation: 'In (Taubenberger, J. K., & Morens, D. M. (2006). 1918 Influenza: the Mother of All Pandemics. Emerging Infectious Diseases, 12(1), 15-22. <https://doi.org/10.3201/eid1201.050979>) it is stated that 'The first pandemic influenza wave appeared in the spring of 1918, followed in rapid succession by much more fatal second and third waves in the fall and winter of 1918-1919, respectively'. They also supplement this statement with a plot from an earlier paper (Jordan E. (1927). Epidemic influenza: a survey. Chicago: American Medical Association):' Below the text is a line graph showing 'Deaths per 1,000 persons' on the y-axis (0 to 30) against dates on the x-axis (6/29, 7/27, 8/24, 9/21, 10/19, 11/16, 12/14, 1/11, 2/8, 3/8, 4/5). The graph shows two distinct waves: a smaller one in late 1918 and a larger one in early 1919. Below the graph is the text: 'Our two waves of mentions of the word 'Grippe' seem to correspond to the mortality figures, which could indicate that the method, albeit very simple, works and that historical events can sometimes be reflected in word frequency counts...'.

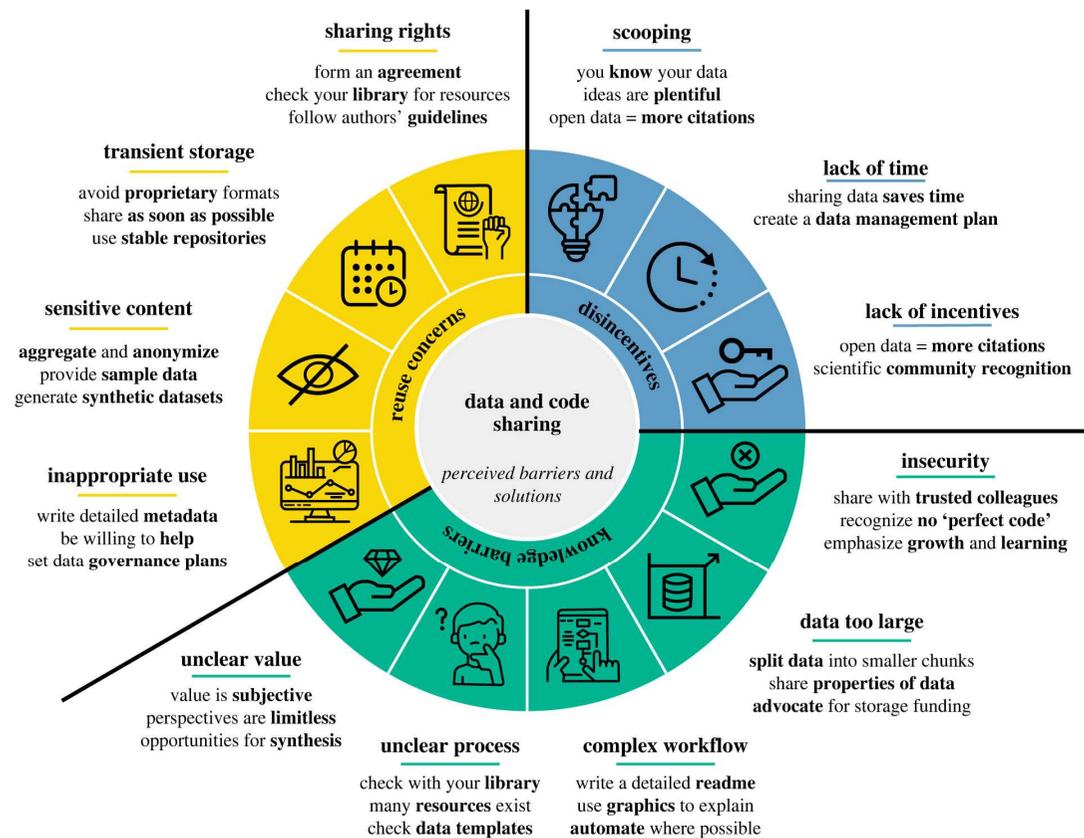
## ■ z.B. Jupyter Books

Samoilova, E., Slyter-Gähje, H., Skorinkin, D., Schnaitter, H., Trilcke, P., Lucke, U. (2024). Forschungsgeleitete Vermittlung von Datenkompetenz: Mediendidaktische Aufbereitung von Fallstudien zu Bildungsangeboten. Proc. GI Jahrestagung.

# ALL DIE VIELEN DATEN !!!

## Forschungsdaten-Repositorien

- Speicherplatz
- Formate
- Metadaten
- Support & Training



# DEEPL & Co.



The screenshot shows the DeepL website interface. At the top, there is a navigation bar with the DeepL logo, a dropdown menu for 'Übersetzer', and links for 'Produkte', 'Lösungen', 'Preise', and 'Apps'. There are also buttons for 'Anmelden' and 'Kostenloses Probeabo starten'. Below the navigation bar, there are three main service buttons: 'Text übersetzen' (33 Sprachen), 'Dateien übersetzen' (.pdf, .docx, .pptx), and 'DeepL Write' (KI-Schreibassistent). The main content area shows a translation from 'Englisch (erkannt)' to 'Deutsch'. The source text is: 'the quality of AI-generated algorithm and data can vary greatly depending on their complexity, as well as several other factors. It is essential to carefully evaluate the quality of AI-generated algorithm and data, considering factors such as data quality, algorithm design, computational resources, training data size and diversity, and evaluation metrics.' The translated text is: 'Die Qualität von KI-generierten Algorithmen und Daten kann je nach ihrer Komplexität und verschiedenen anderen Faktoren stark variieren. Es ist wichtig, die Qualität von KI-Algorithmen und -Daten sorgfältig zu bewerten und dabei Faktoren wie Datenqualität, algorithmisches Design, Rechenressourcen, Größe und Vielfalt der Trainingsdaten und Bewertungsmetriken zu berücksichtigen.' The interface includes a microphone icon, a speaker icon, and a refresh icon on the left, and a speaker icon, a thumbs up/down icon, an edit icon, a copy icon, and a share icon on the right.

# Symposium am 1. Juli 2024

BIRGIT BAUDÄCH / 23. MAI 2024 / KI-CAMPUS-HUB-NRW-VERANSTALTUNG

**Zugänge zu generativer KI schaffen –  
Lösungen zur technischen Bereitstellung an  
Hochschulen**

# MEINE WUNSCHLISTE

- Zugang zu Sprachmodellen
  - Dialogisches Interface ✓
  - API ✓
- Lizenzierung von AI Research Tools
  - Kosten ?
  - Datenschutz / Souveränität ?
- Services für
  - eigene Modelle & (note)books (✓)
  - wissensverarbeitende Systeme (✓)
- Integration in die Uni-Infrastruktur
  - Literatur ?
  - Daten ?
  - Arbeitsumgebung ?
- gemeinsame Arbeit an Ontologien / Taxonomien ?
- Kompetenzaufbau in
  - Forschung & Lehre (✓)
  - Verwaltung & Zentralen Einrichtungen (✓)

# KONTAKT

## Prof. Dr.-Ing. habil. Ulrike Lucke

---

Universität Potsdam

Institut für Informatik und Computational Science

Komplexe Multimediale Anwendungsarchitekturen

[ulrike.lucke@uni-potsdam.de](mailto:ulrike.lucke@uni-potsdam.de)

