

„Was kann Machine Learning und wie kann es helfen,
Sammlungen zu erschließen?“

10.10.22

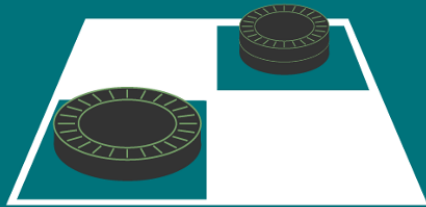
Sonja Thiel

FG Dokumentation im Deutschen Museumsbund e.V. –
Institut für Museumsforschung, Staatliche Museen zu Berlin



KÜNSTLICHE INTELLIGENZ

KI-Forschung erregt erste Aufmerksamkeit



MASCHINELLES LERNEN

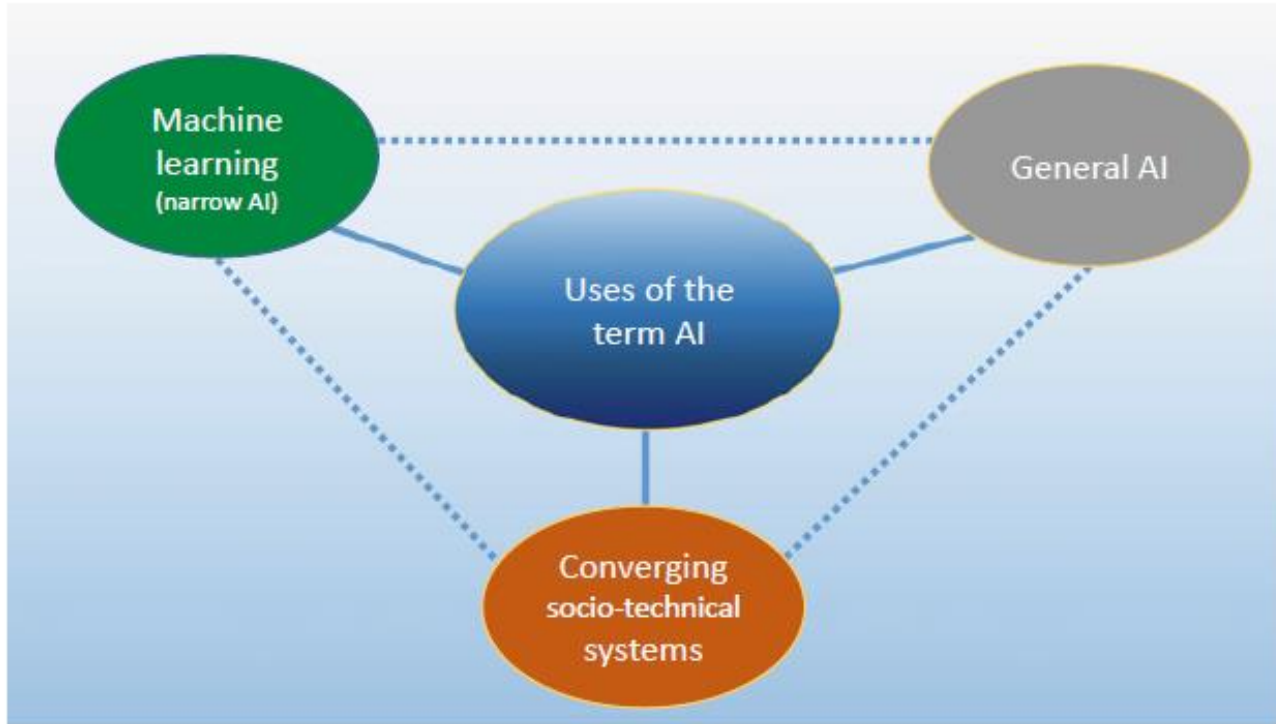
Die Blütezeit von ML beginnt



DEEP LEARNING

Durchbrüche durch DL treiben die KI-Forschung





Stahl, Bernd Carsten (2021): Artificial Intelligence for a Better Future. An Ecosystem Perspective on the Ethics of AI and Emerging Digital Technologies. Cham: Springer International Publishing AG (SpringerBriefs in Research and Innovation Governance Ser). Online verfügbar unter <https://ebookcentral.proquest.com/lib/kxp/detail.action?docID=6522091>.

Fig. 2.1 Uses of the term “AI”

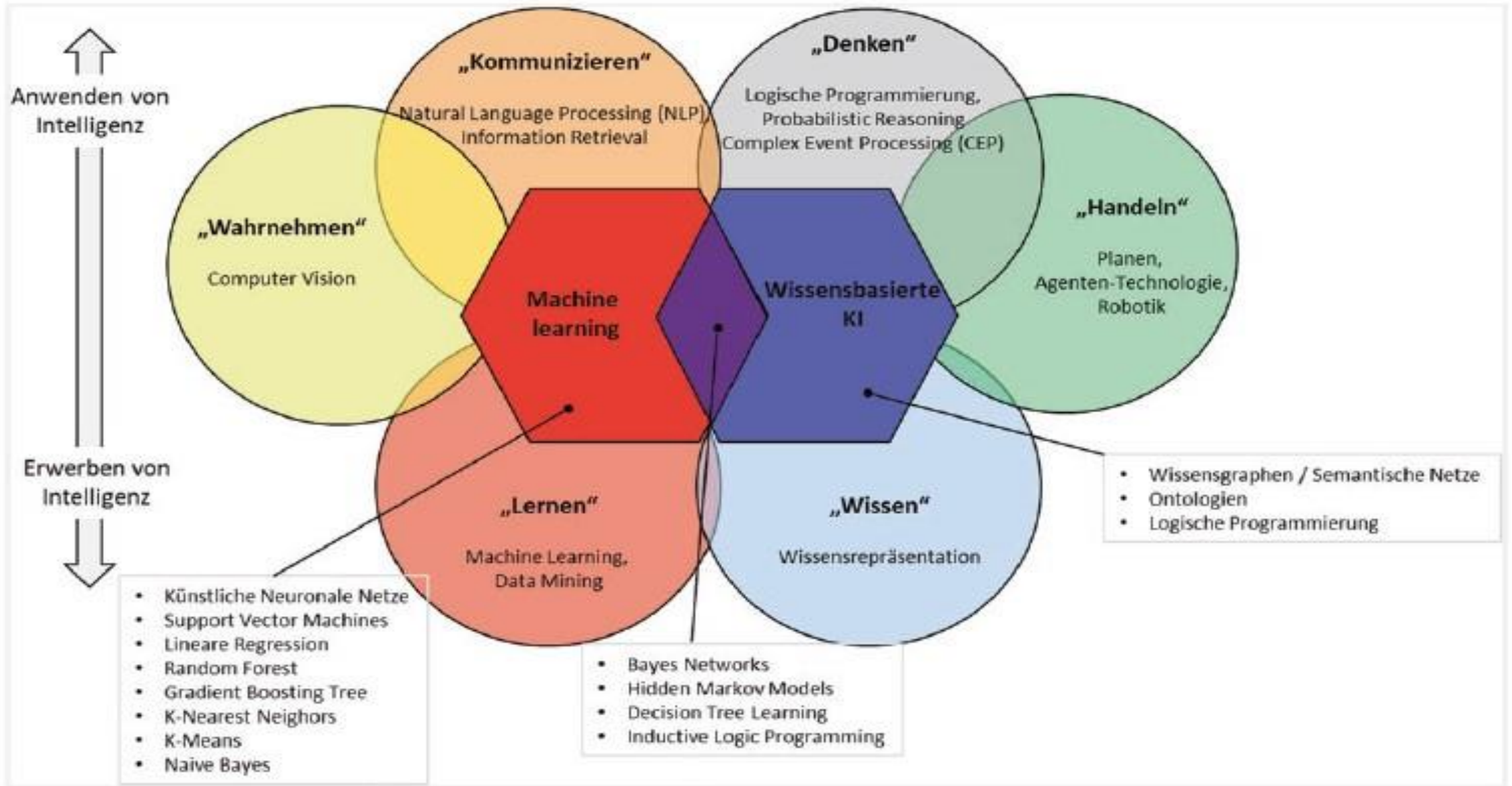


Abb. 2.1 Landkarte der KI (nach Humm 2020)

Gethmann, Carl Friedrich; Buxmann, Peter; Distelrath, Julia; Humm, Bernhard G.; Lingner, Stephan; Nitsch, Verena et al. (2022): Künstliche Intelligenz in der Forschung. Neue Möglichkeiten und Herausforderungen für die Wissenschaft. Bern: Springer Nature (Springer eBook Collection, Band 48). Online verfügbar unter <https://link.springer.com/book/10.1007/978-3-662-63449-3>.

Hilfreiche Anlaufstellen

AEOLIAN Network
Artificial Intelligence for Cultural Organisations

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Case Studies

Case Study 2: Computer Vision and Cultural Heritage

The second case study is written by Catherine Nicole Coleman. This case study on computer vision applied to cultural heritage looks at critical points of intersection between research questions, the affordances of the technology and curatorial desires. The primary focus...

AEOLIAN
20th April 2022 | 2 minute read

[Read more](#)

Case Study 1: The National Archives (UK)

The first case study is written by Lise Jaillant, Annalina Caputo, and Katherine Aske on The National Archives UK (TNA). The study examines TNA's current strategies, projects and policies concerning the use of AI to make born-digital records more accessible...

aeolian-admin
19th November 2021 | 1 minute read

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Events

Online Workshop 5: Creating and interrogating all document types and unlocking new data.

This workshop will be held online and hosted by University of...

Online Workshop 6: What sorts of new and emerging methods will enable new breakthroughs in working with digital collections?

This workshop will be held online and hosted by Glasgow University...

[View more events](#)

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<https://www.aeolian-network.net>

<https://pro.europeana.eu/project/ai-in-relation-to-glams>

<https://themuseumsai.network/>

AI for Libraries, Archives, and Museums

AI4LAM is an international, participatory community focused on advancing the use of artificial intelligence in, for and by libraries, archives and museums.

10 followers <http://ai4lam.org> contact@ai4lam.org

Overview Repositories 3 Projects Packages People 6

Popular repositories

fastai4GLAMS

Forked from davanstrien/fastai4GLAMS

A study group for v4 of the fastai introduction to deep learning course with a focus on applications in GLAM settings

Jupyter Notebook 13 2

full-stack-deep-learning-4-glams

A study group for the Full Stack Deep Learning Course with a focus on using ML in GLAM settings

4

metadata-working-group

A collection of Jupyter notebooks used for interactive learning sessions in the AI4LAM Metadata working group meetings. Jupyter Book available at <https://ai4lam.github.io/metadata-working-group/>

mIRC Script 3 1

Repositories

Find a repository...

Type Language Sort

metadata-working-group

A collection of Jupyter notebooks used for interactive learning sessions in the AI4LAM Metadata working group meetings. Jupyter Book available at <https://ai4lam.github.io/metadata-working-group/>

mIRC Script 3 1 2 0 Updated on 12 Jul

<https://github.com/AI4LAM>

Übersicht

Inhaltserstellung

Informationsanalyse

Inhaltsverbesserung

Informationsverbesserung

Nach: Anantrasirichai, Nantheera; Bull, David (2022): Artificial intelligence in the creative industries: a review. In: *Artif Intell Rev* 55 (1), S. 589–656. DOI: 10.1007/s10462-021-10039-7.

Datentools

Breve. See your data.

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Mobile_Food_Facilit... Map errors and gaps Map by data types Sort by values


Field	Value
locationid	733
Applicant	733
FacilityType	727
cnn	733
LocationDescription	695
Address	732
blocklot	723
block	723
lot	723
permit	733
Status	733
FoodItems	730
Schedule	733
dayshours	704
NOISent	4
Approved	606
Received	733
PriorPermit	733
ExpirationDate	669
Location	674

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Download as CSV

And sort by values.

<http://hdlab.stanford.edu/breve/>

 **OpenRefine**

A free, open source,
powerful tool for working
with messy data

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Welcome!

OpenRefine (previously Google Refine) is a powerful tool for working with messy data: cleaning it; transforming it from one format into another; and extending it with web services and external data.

OpenRefine always keeps your data private on your own computer until YOU want to share or collaborate. Your private data never leaves your computer unless you want it to. (It works by running a small server on your computer and you use your web browser to interact with it)

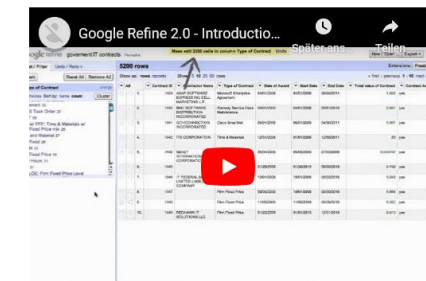
OpenRefine is available in more than 15 languages.

OpenRefine is part of [Code for Science & Society](#).

Introduction to OpenRefine

1. Explore Data

OpenRefine can help you explore large data sets with ease. You can find out more about this functionality by watching the video below.

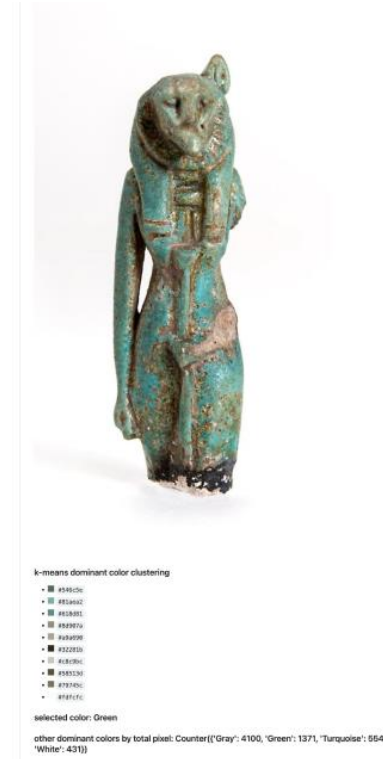


<https://openrefine.org/>

Suche verbessern



davinci_clip_text_lion



Literatur:

Tony Russell-Rose: Rethinking 'Advanced Search': an AI-based approach to search strategy formulation. In: Haynes, David; Vernau, Judi (2019): The Human Position in an Artificial World: Creativity, Ethics and AI in Knowledge Organization. ISKO UK Sixth Biennial Conference London, 15-16th July 2019. 1. Auflage. Baden-Baden: Ergon Verlag.

Anwendung: Tagging

UI mockup of a museum search interface for the tag 'doll'.

Navigation bar: All 53, People 0, Objects 53, Documents 0

View: [Grid icon] [List icon]

Filter search [Filter icon]

Clear all filters

- > Image
- > Category
- > Collection
- > On Display
- > Object type
- > Maker
- > Place of origin
- > Date

Object 1: **Statue depicting Florence Nightingale**
Nursing & Hospital Furnishings
1851-1900

Object 2: **Ceramic teaching doll to show treatment for polio**
Orthopaedics
1930-1950

Object 3: **Poured wax doll**
Materials Science Gallery
c. 1900

Object 4: **Barbie doll**
Materials Science Gallery
Late 1970's and 1980's.

Object 5: **Black Barbie Doll**
Materials Science Gallery
Late 1970's and 1980's.

Object 6: **Shoulder papier-mache doll accompanying English wooden doll. Circa 1840**
Materials Science Gallery
c. 1840

Example: Science Museum Group (2022): Search our collection.
<https://collection.sciencemuseumgroup.org.uk/search/imgtag/doll>

Research: Villaespesa, Elena; Murphy, Oonagh (2021): This is not an apple! Benefits and challenges of applying computer vision to museum collections. In: *Museum Management and Curatorship* 36 (4), S. 362–383. DOI: 10.1080/09647775.2021.1873827.

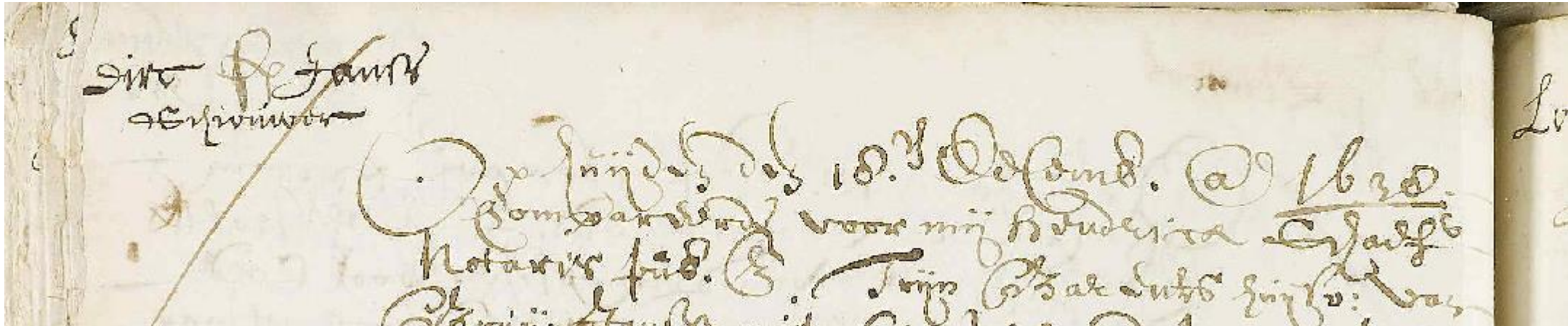
Anwendung: Tagging



State Library of NSW (2021): TIGER: using artificial intelligence to discover our collections. Online verfügbar unter <https://www.sl.nsw.gov.au/blogs/tiger-using-artificial-intelligence-discover-our-collections>

Tool: Handschriftenerkennung

“Transkribus: A platform for the transcription, recognition and searching of historical documents”



<https://readcoop.eu/transkribus/start/>

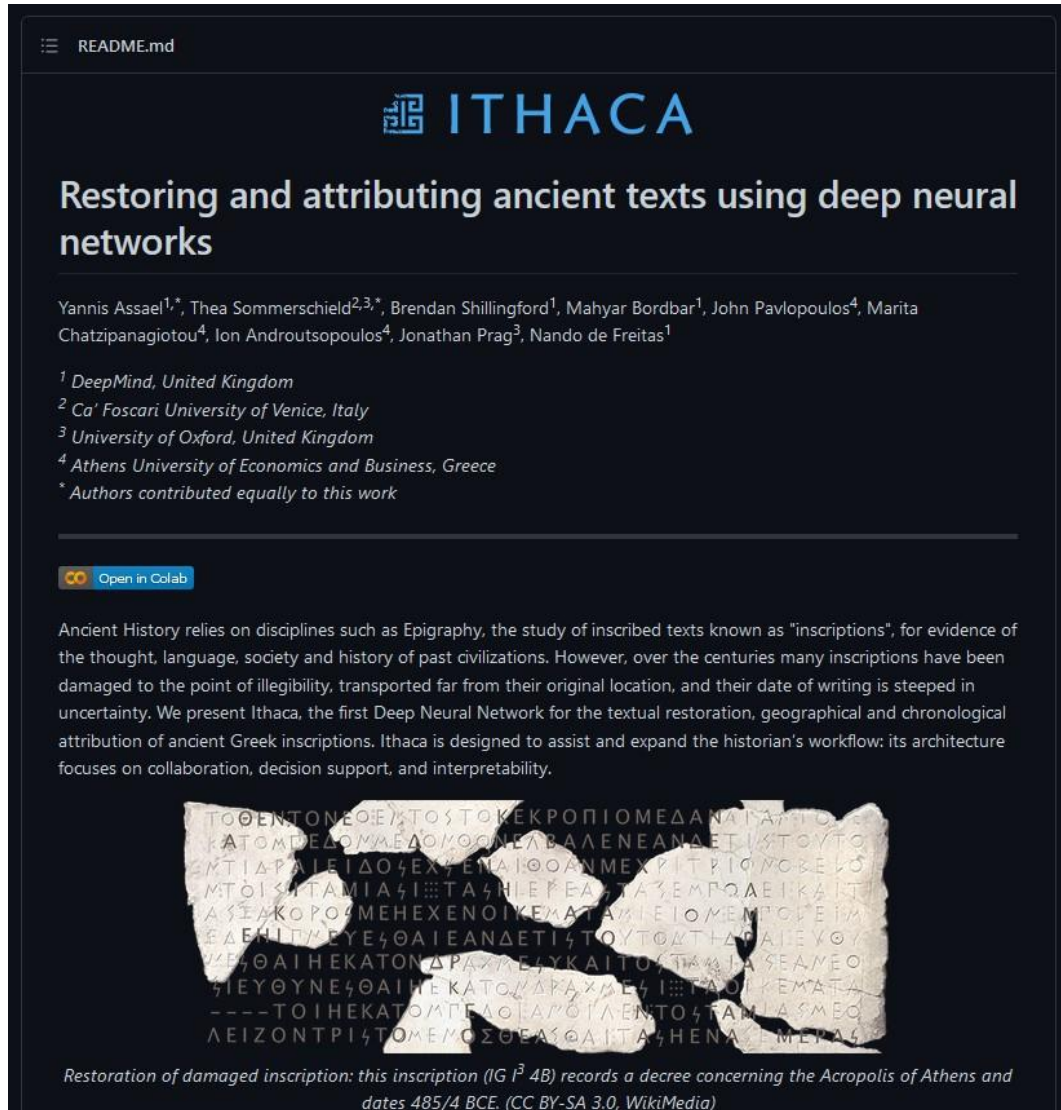
Dirc Jansz
Schiower

Op **h**Huiden den 18en. Decemb. @ 1638.
Compareerde voor mij Hendrick Schaef
Notaris **p**Pub. etc. Trijn Barents huijsv**r**: van

Quelle: AI4LAM Lookbook:

https://docs.google.com/presentation/d/1iWG9RpPaMlikUAe8mfVIYQeoCiNH8ct2ILFtbMI7P_o/edit?usp=sharing

Tool: Restaurierung und Beschreibung antiker Texte




☰ README.md

ITHACA


Restoring and attributing ancient texts using deep neural networks

Yannis Assael^{1,*}, Thea Sommerschild^{2,3,*}, Brendan Shillingford¹, Mahyar Bordbar¹, John Pavlopoulos⁴, Marita Chatzipanagiotou⁴, Ion Androutsopoulos⁴, Jonathan Prag³, Nando de Freitas¹

¹ DeepMind, United Kingdom
² Ca' Foscari University of Venice, Italy
³ University of Oxford, United Kingdom
⁴ Athens University of Economics and Business, Greece
* Authors contributed equally to this work

 Open in Colab

Ancient History relies on disciplines such as Epigraphy, the study of inscribed texts known as "inscriptions", for evidence of the thought, language, society and history of past civilizations. However, over the centuries many inscriptions have been damaged to the point of illegibility, transported far from their original location, and their date of writing is steeped in uncertainty. We present Ithaca, the first Deep Neural Network for the textual restoration, geographical and chronological attribution of ancient Greek inscriptions. Ithaca is designed to assist and expand the historian's workflow: its architecture focuses on collaboration, decision support, and interpretability.



Restoration of damaged inscription: this inscription (IG I³ 4B) records a decree concerning the Acropolis of Athens and dates 485/4 BCE. (CC BY-SA 3.0, WikiMedia)

GitHub (2022): deepmind/ithaca: Restoring and attributing ancient texts using deep neural networks. Online verfügbar unter <https://github.com/deepmind/ithaca>

Assael, Yannis; Sommerschild, Thea; Shillingford, Brendan; Bordbar, Mahyar; Pavlopoulos, John; Chatzipanagiotou, Marita et al. (2022): Restoring and attributing ancient texts using deep neural networks. In: *Nature* 603 (7900), S. 280–283.
DOI: 10.1038/s41586-022-04448-z.

Forschung: Semantische Beschreibung von Münzen



Cooper, Jessica; Arandjelović, Ognjen (2020): Learning to Describe: A New Approach to Computer Vision Based Ancient Coin Analysis. In: *Sci 2* (2), S. 27. DOI: 10.3390/sci2020027.

Tool: Erkennen von Zeiten in Volltexten

HeidelTime Demo

Configuration

HeidelTime is a **multilingual** and **cross-domain** temporal tagger.
Please click the question marks for additional instructions.

Document type: ⓘ

Language: ⓘ

Document creation time:

Input

Choose between manually entering text and inserting a text file (up to 2 MB, ensure it's encoded in UTF-8).

Text File

Output

Extracted temporal expressions are marked in blue. To see their normalization value, click them.
You may also receive a TimeML-annotated file (ensure your browser isn't blocking popups).

I want to receive a TimeML-annotated file

Resulting document:

Not available

GitHub (2022): [texttechnologylab/heideltime](https://github.com/texttechnologylab/heideltime): A multilingual, cross-domain temporal tagger developed at the Database Systems Research Group at Heidelberg University. Online verfügbar unter <https://github.com/texttechnologylab/heideltime>.

Lücking, Andy; Stoeckel, Manuel; Abrami, Giuseppe; Mehler, Alexander (2022): I still have Time(s): Extending HeidelTime for German Texts. Online verfügbar unter <https://arxiv.org/pdf/2204.08848>.

Verbindung: Sach-Erschließung & Citizen Science

Amplify

BROWSE SEARCH COLLECTIONS ABOUT FAQ TUTORIAL TRACK MY PROGRESS ▾

A meeting place for cultural collections and artificial intelligence

Amplify delivers audio material from a number of cultural institutions including libraries and museums across Australia. These oral histories, many of which have been preserved digitally from their original format, are being delivered online for the first time, paired with machine-generated transcripts. Here you can explore hours of fascinating interviews that capture Australian life, people and history. You can also help enrich these important cultural documents by correcting any errors in the transcripts you may find as you listen along.

Select a recording below to get started.

Filter by: All Themes ▾ All Institutions ▾ All Collections ▾ Search title/description

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SOMERVILLE HOUSE CE...
Interview with Felicity



LIVES OF NOVOCASTRIA...
Lives of Novocastrians



ARMY NURSE INTERVIE...
Ethel Adelaide Baxter



AUSTRALIAN FISHING I...
Interview with Gordon



BRIDGE BUILDERS
Bridge Builders [Tape



POSTCARDS FROM LUNA...
Peter Webber (Tape 2



WARRAWONG, PORT KE...
George Murray Part 1

State Library of New South Wales (2022):
Amplify. Online verfügbar unter
<https://amplify.gov.au/>



SOMERVILLE HOUSE CE...
 Interview with Felicity Williams, 7 Feb 1995. [Part 1, Side B]
 Miss Williams was on the staff at Somerville...
 26m 10s 5 contributors
 ● 100% have edits
 ● 1% awaiting review



LIVES OF NOVOCASTRIA...
 Lives of Novocastrians - Bruce Prigg Part 2
 Bruce was the Senior Commissionaire for City...
 10m 36s 0 contributors



ARMY NURSE INTERVIEW...
 Ethel Adelaide Baxter interviewed by Jan Bassett
 F617 Colonel Ethel Adelaide Baxter was one of...
 41m 20s 8 contributors
 ● 100% have edits
 ● 5% awaiting review



AUSTRALIAN FISHING I...
 Interview with Gordon (Snowy) Archibald Maltman, 17 Apr 1990. [Part 2, Side A]
 Snowy Maltman spent most of his time fishing...
 30m 44s 4 contributors
 ● 51% have edits
 ● 3% awaiting review



BRIDGE BUILDERS
 Bridge Builders [Tape 24 Part 2] Interview with Bill O'Brien
 Interview summary: Bill O'Brien discusses his...
 20m 17s 9 contributors
 ● 100% have edits



POSTCARDS FROM LUNA...
 Peter Webber (Tape 2 Side B) 16th December 1999, interviewed by Nan Manefield
 Peter Webber was the NSW Government Architect...
 31m 23s 1 contributor



WARRAWONG, PORT KE...
 George Murray Part 1
 George Murray was born in Scotland and arrived...
 52m 50s 1 contributor



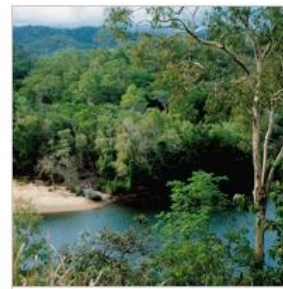
ANTARCTIC EXPEDITIONS
 Susan Filson interviewed by Ingrid McGaughey
 Recorded on 23rd March 2011 in Sandy Bay...
 29m 59s 6 contributors
 ● 100% have edits
 ● 2% awaiting review



20TH CENTURY RYDE
 Interview with Thomas Stanley (Stan) Beal, Tape 1, Side A
 Stan Beal (with input from his wife Muriel)...
 31m 36s 5 contributors



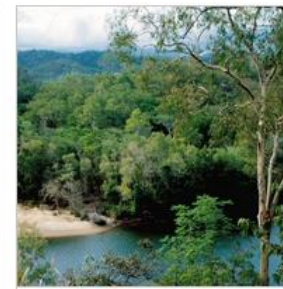
AUSTRALIAN DANCE
 Graeme Murphy interviewed by Martin Portus
 Interview summary: Graeme Murphy discusses the...
 2h 2m 3s 47 contributors
 ● 100% have edits
 ● 5% awaiting review



BLOOMFIELD RIVER ORA...
 Interview with Bob Harlow, 8 May 1995 [Part 2]
 Bob Harlow was raised on the Daintree and came...
 31m 42s 3 contributors
 ● 100% have edits



BRIDGE BUILDERS
 Bridge Builders [Tape 26 Part 2] Interview with Reg Saunders
 Interview summary: Reg Saunders discusses his...
 29m 58s 14 contributors



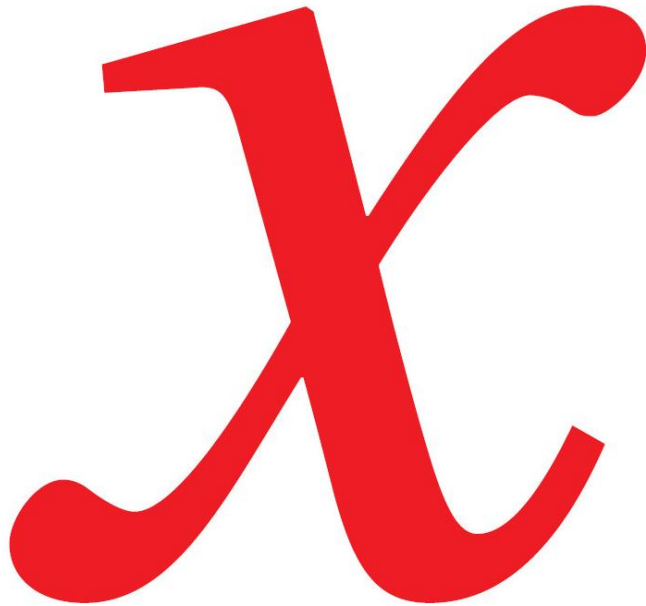
BLOOMFIELD RIVER ORA...
 Interview with Herbert Olufson, 23 Apr 1995 [Part 5]
 The Olufson family has the longest history on...
 31m 42s 1 contributor
 ● 100% have edits



20TH CENTURY RYDE
 Interview with Joan Murray, Tape 1, Side A
 Joan and her husband Max moved to North Ryde...
 31m 30s 5 contributors
 ● 100% have edits

Literatur

- AEOLIAN Network – Artificial Intelligence for Cultural Organisations (2022). Online verfügbar unter <https://www.aeolian-network.net/>,
- AI4LAM (2022): « Les Futurs Fantastiques » – Les défis de l’IA dans les galeries, bibliothèques, archives et musées. Online verfügbar unter <https://www.youtube.com/watch?v=4CFDdGmilGk>, Anantrasirichai, Nantheera; Bull, David (2022): Artificial intelligence in the creative industries: a review. In: *Artif Intell Rev* 55 (1), S. 589–656. DOI: 10.1007/s10462-021-10039-7.
- Europeana AI in GLAMS Taskforce: AI in relation to GLAMs Task Force Report. Online verfügbar unter https://pro.europeana.eu/files/Europeana_Professional/Europeana_Network/Europeana_Network_Task_Forces/Final_reports/AI%20in%20relation%20to%20GLAMs%20Task%20Force%20Report.pdf, zuletzt geprüft am 18.01.2022.
- Gethmann, Carl Friedrich; Buxmann, Peter; Distelrath, Julia; Humm, Bernhard G.; Lingner, Stephan; Nitsch, Verena et al. (2022): Künstliche Intelligenz in der Forschung. Neue Möglichkeiten und Herausforderungen für die Wissenschaft. Bern: Springer Nature (Springer eBook Collection, Band 48). Online verfügbar unter <https://link.springer.com/book/10.1007/978-3-662-63449-3>.
- Haynes, David; Vernau, Judi (2019): The Human Position in an Artificial World: Creativity, Ethics and AI in Knowledge Organization. ISKO UK Sixth Biennial Conference London, 15-16th July 2019. 1. Auflage. Baden-Baden: Ergon Verlag.
- Hochrangige Expertengruppe für künstliche Intelligenz (2019): Ethik Leitlinien für eine vertrauenswürdige KI. Hg. v. Europäische Kommission. Online verfügbar unter <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>
- Menzel, Sina; Schnaitter, Hannes; Zinck, Josefine; Petras, Vivien; Neudecker, Clemens; Labusch, Kai et al. (2021): Named Entity Linking mit Wikidata und GND – Das Potenzial handkuratierter und strukturierter Datenquellen für die semantische Anreicherung von Volltexten. In: Michael Franke-Maier (Hg.): Qualität in der Inhaltserschließung. Unter Mitarbeit von Anna Kasprzik, Andreas Ledl und Hans Schürmann. Berlin/Boston: Walter de Gruyter GmbH (Bibliotheks- und Informationspraxis Ser, v.70), S. 229–258.
- Science Museum Group (2022): Search our collection. Online verfügbar unter <https://collection.sciencemuseumgroup.org.uk/search/imgtag/doll>
- Staatsbibliothek zu Berlin (2022): QURATOR-SPK. Online verfügbar unter <https://github.com/qurator-spk>, zuletzt aktualisiert am 09.10.2022, zuletzt geprüft am 09.10.2022.
- State Library of New South Wales (2022): Amplify. Online verfügbar unter <https://amplify.gov.au/>, zuletzt aktualisiert am 09.10.2022, zuletzt geprüft am 09.10.2022.
- State Library of NSW (2021): TIGER: using artificial intelligence to discover our collections. Online verfügbar unter <https://www.sl.nsw.gov.au/blogs/tiger-using-artificial-intelligence-discover-our-collections>
- The Museums + AI Network (2020): AI: A Museum Planning Toolkit. Online verfügbar unter https://themuseumsainetwork.files.wordpress.com/2020/02/20190317_museums-and-ai-toolkit_rl_web.pdf.
- Villaespesa, Elena; Murphy, Oonagh (2021): This is not an apple! Benefits and challenges of applying computer vision to museum collections. In: *Museum Management and Curatorship* 36 (4), S. 362–383. DOI: 10.1080/09647775.2021.1873827.



sonja.thiel@landesmuseum.de  @projektthiel

<https://www.landmuseum.de/digital/projekt-museum-der-zukunft/kuenstliche-intelligenz-museum>

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