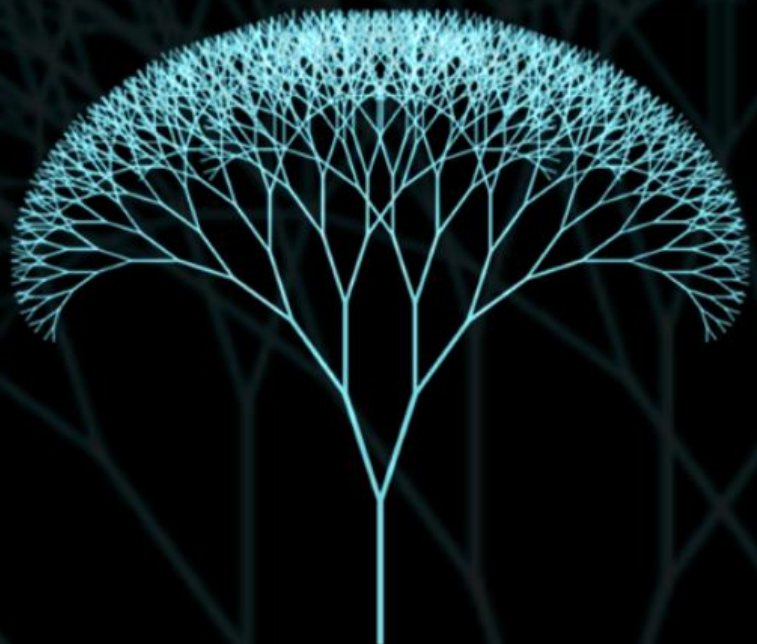




AI₄LAM

Artificial Intelligence for Libraries, Archives & Museums

Kreiranje podatkov: nesmisel!

Ines Vodopivec
Secretary General

UI v kultUri: umetna inteligenca
v muzejih, arhivih in knjižnicah
Ljubljana, 10. november 2025



Social Science Data Archive



International
Federation of
Library
Associations and Institutions

Repository of the
University of Ljubljana



Digitalna
Knjižnica
Univerze v
Mariboru



Digital Library of Slovenia



INTERNATIONAL
INTERNET
PRESERVATION
CONSORTIUM



SLOVENIAN
OPEN SCIENCE
COMMUNITY



europeana



SICRIS

Slovenian Current
Research Information
System

Open Science Slovenia

ACCESS TO KNOWLEDGE FROM SLOVENIAN RESEARCH ORGANIZATIONS

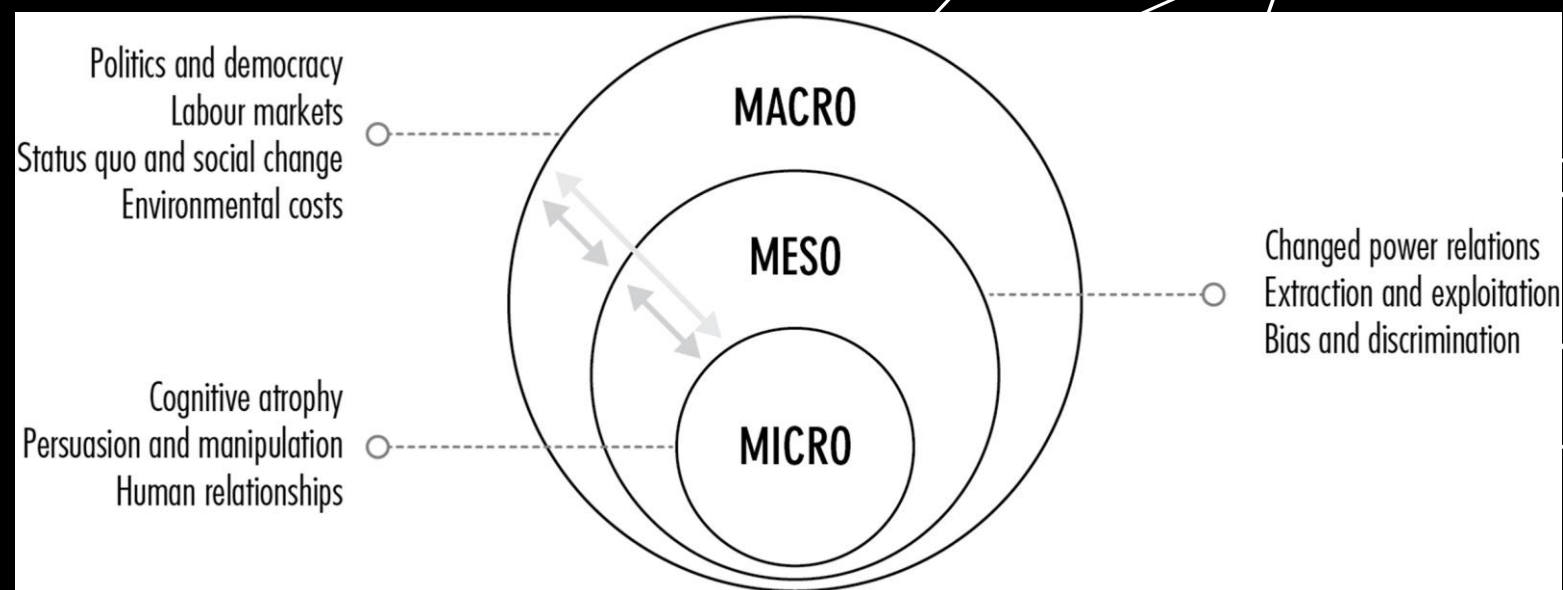
DIGITALIZACIJA

DOSTOPNOST

PONOVNA UPORABA



UMETNA INTELIGENCA JE TUKAJ IN NE BO ODŠLA!



Henrik Skaug Sætra, Generative AI: Here to stay, but for good?, Technology in Society, Vol. 75, 2023, ISSN 0160-791X,
<https://doi.org/10.1016/j.techsoc.2023.1a02372>.



ScienceDirect®

The background of the slide is a dark blue abstract graphic. It features a stylized globe in the center, composed of a grid of small dots. Overlaid on the globe and the background are various digital elements: binary code (0s and 1s) in different colors (cyan, white, red), glowing lines, and some faint, larger numbers like '45' and '65'. The overall aesthetic is high-tech and digital.

UI IN SPREMEMBE V DELOVNIH PROCESIH

1. **Globalni preobrat**
2. Uporabniška perspektiva
3. Institucionalne spremembe
4. (Meta)podatkovna percepcija

A collection of colorful sticky notes (yellow, white, purple, blue, pink) is scattered on a dark wooden surface. Each sticky note features a simple black line drawing of a person's head and shoulders. The notes are arranged in a way that suggests a collaborative workspace or a brainstorming session.

USTVARJALCI IN UPORABNIKI PODATKOV KULTURNE DEDIŠČINE

ZAPOSLENI

- Strah pred spremembami
 - Pomanjkanje znanja
 - Novi strokovni profili
 - Kakovost storitev



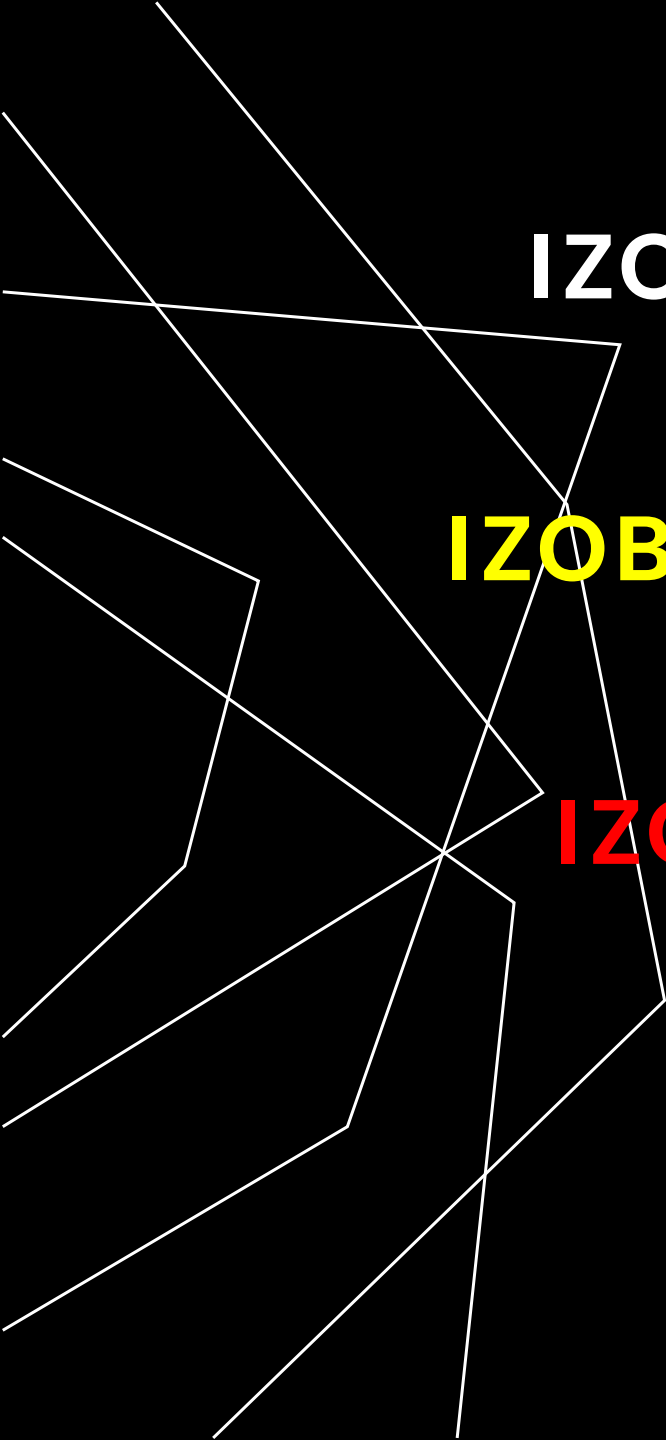
SPREMENJEN NAČIN, KAKO UPORABNIKI:

- dostopajo do informacij
- iščejo informacije
- pričakujejo informacije
- uporabljajo informacije



**A fool with a tool is
still a fool.**

Grady Booch



IZOBRAŽEVANJE IN USPOSABLJANJE!

IZOBRAŽEVANJE IN USPOSABLJANJE!

IZOBRAŽEVANJE IN USPOSABLJANJE!



INSTITUCIJE

INSTITUCIONALNE UI AKTIVNOSTI

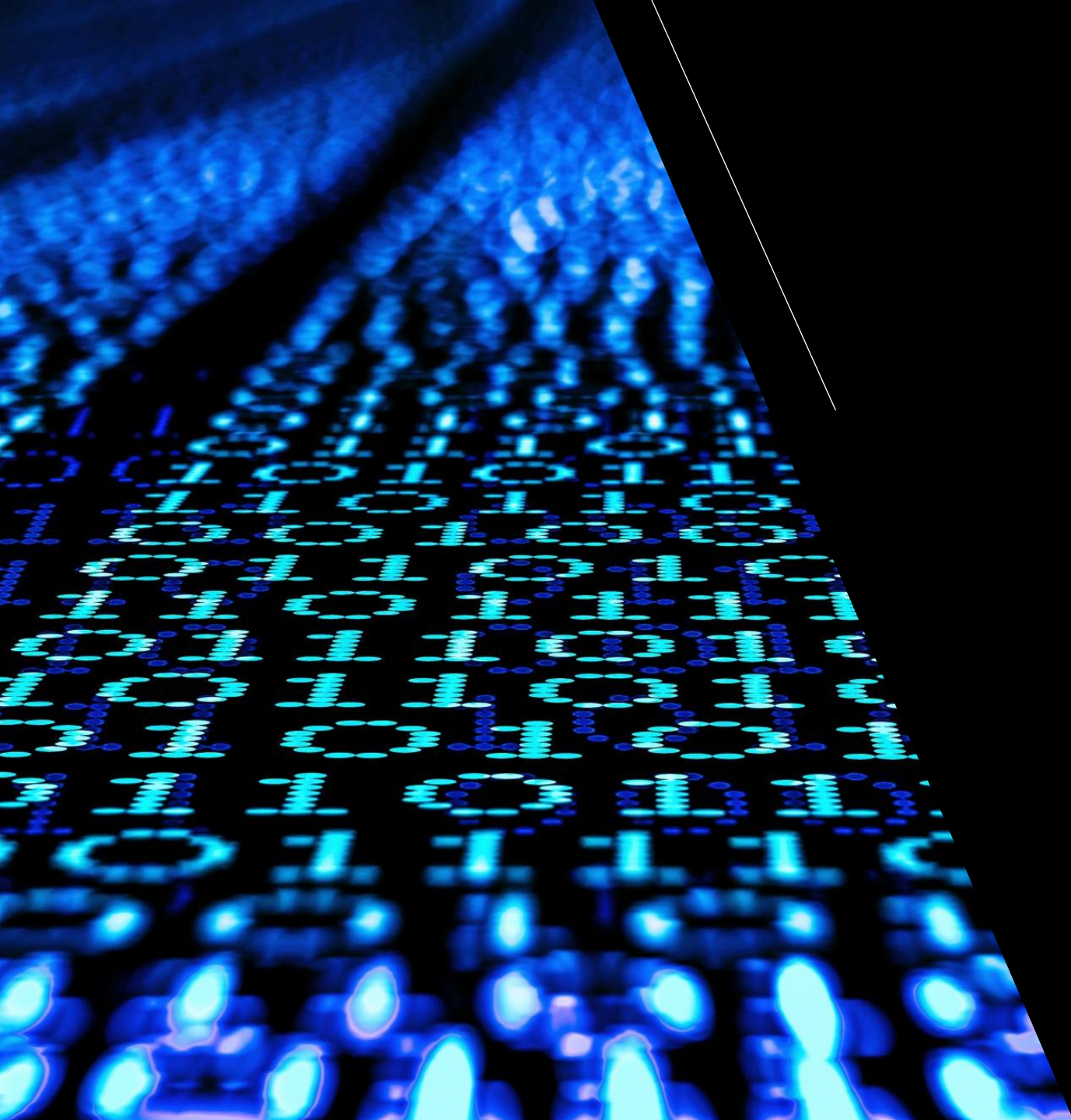
- Prepoznavanje vrzeli in potreb
- Izobraževanje in usposabljanje zaposlenih
 - Izobraževanje in usposabljanje uporabnikov
- Iskanje novih veščin in zaposlovanje novih profilov
 - Spreminjanje delovnih postopkov
 - Obravnavanje etičnih vprašanj
- Prilagajanje in sprejemanje politik ter strategij



"AI literacy will be invaluable in helping to equip our students and faculty for a world permeated by this technology."

Leo Lo, Dean of library

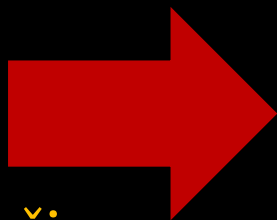
AI Librarian



PODATKI

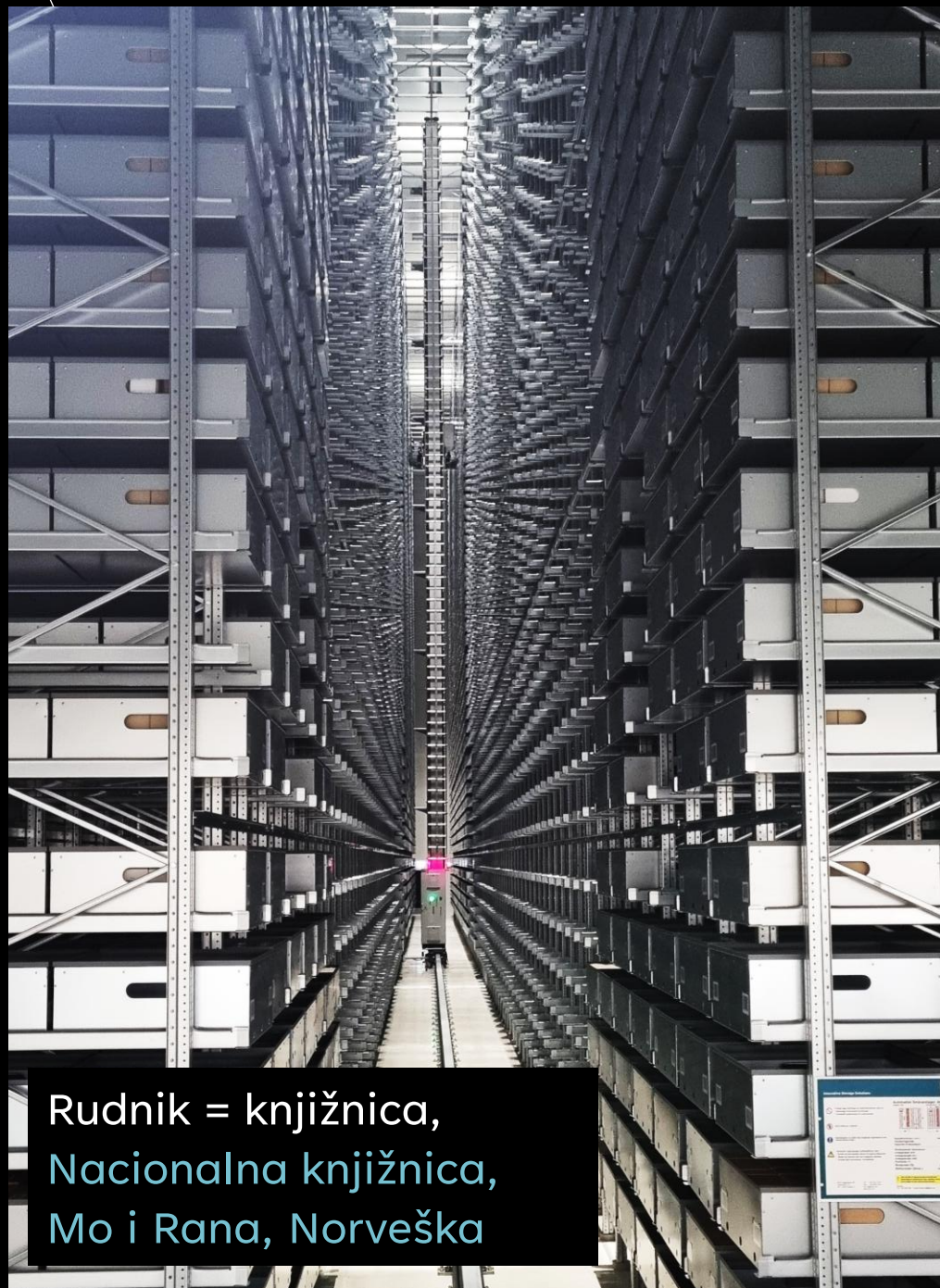
(META)PODATKI!

- Digitalizirano gradivo
- Izvorno digitalno gradivo
- Shranjeni splet
- Podatkovne zbirke in repozitoriji
- Raziskovalni podatki
- E-viri

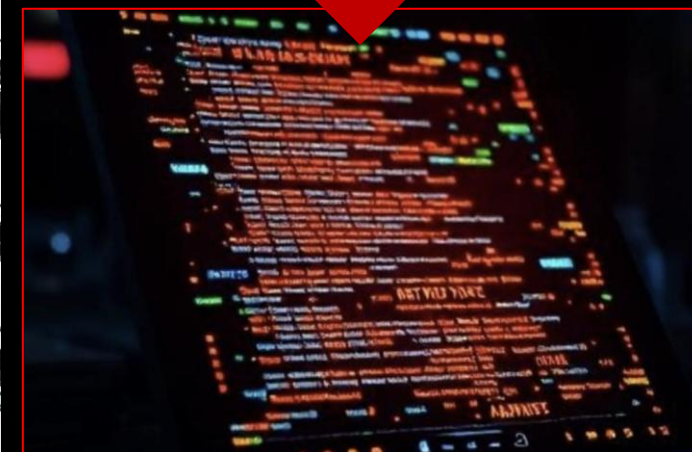


Spremenjen način:

- ustvarjanja
- upravljanja
- dostopa
- (ponovne) uporabe



Rudnik = knjižnica,
Nacionalna knjižnica,
Mo i Rana, Norveška





**ZAKAJ ODPRTI PODATKI V
ZNANOSTI (ODPRTA
ZNANOST), IN NE TUDI V
KULTURNI DEDIŠČINI?**



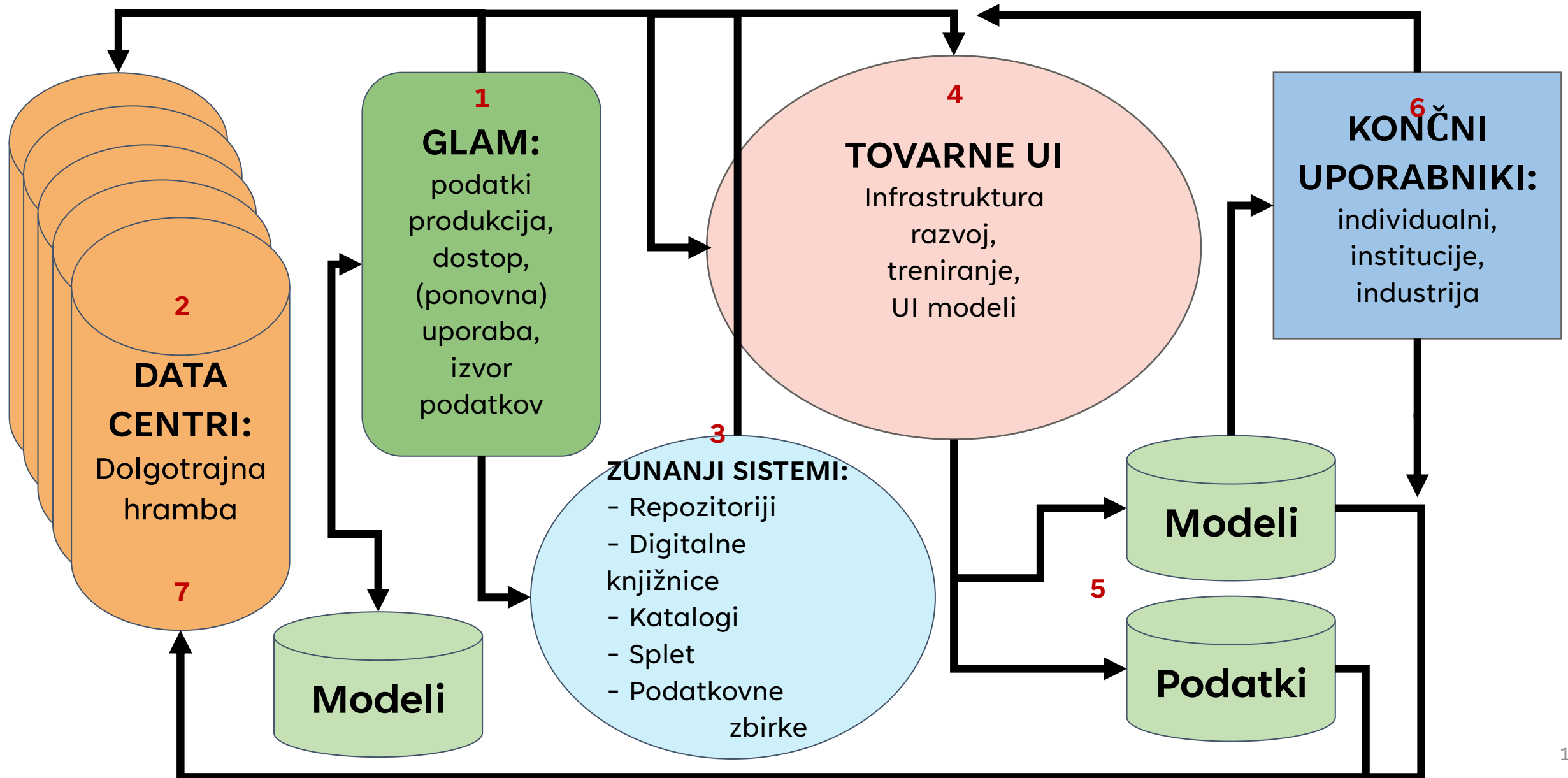
POT DO USPEHA:
SODELOVANJE!

MEDSEKTORSKO SODELOVANJE

- Ne-izoliranost
- Celostno reševanje problemov
- Skupni viri in strokovno znanje
- Obravnavanje podobnih vprašanj in izzivov
- Motivacija za vključevanje inovacij



KULTURNI PODATKI V DIGITALNEM OKOLJU UI

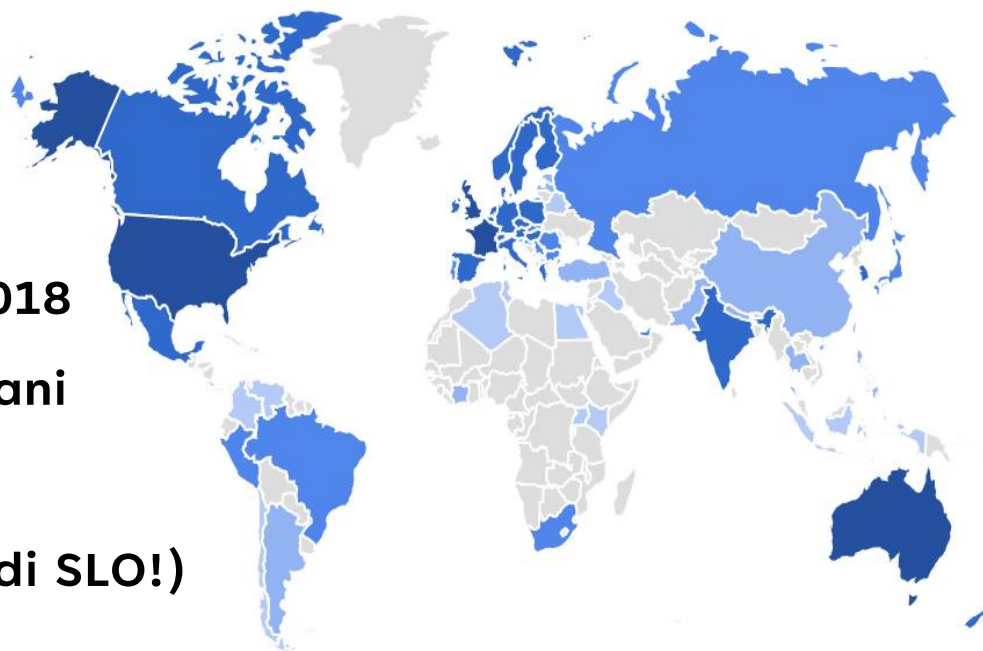


**UMETNA INTELIGENCA
ZA KNJIŽNICE, MUZEJE
IN ARHIVE**



Globalni doseg in sodelovanje

- Prvi memorandum AI4LAM leta 2018
- Globalna mreža z več kot 1.500 člani
- Delovne skupine in področja
- Nov memorandum v letu 2025 (tudi SLO!)



COUNTRY

United States

Australia

United Kingdom

France

Netherlands

Germany

Norway

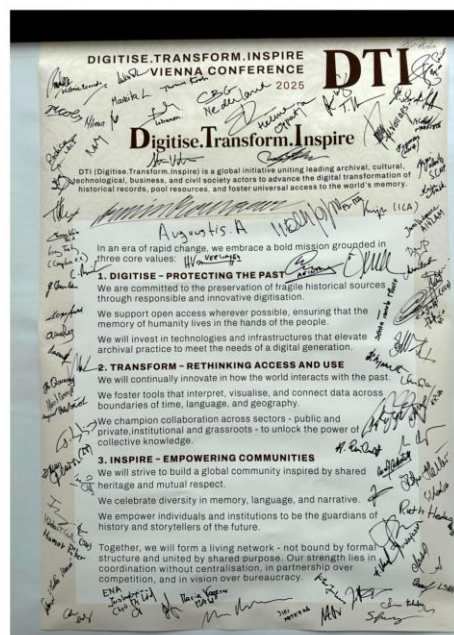


LIBRARY



{ BnF





DTI Initiative Digitise. Transform. Inspire. Dunaj, 2025



AI4LAM SKUPNOST

Za koga?
Od koga?

GLAM:

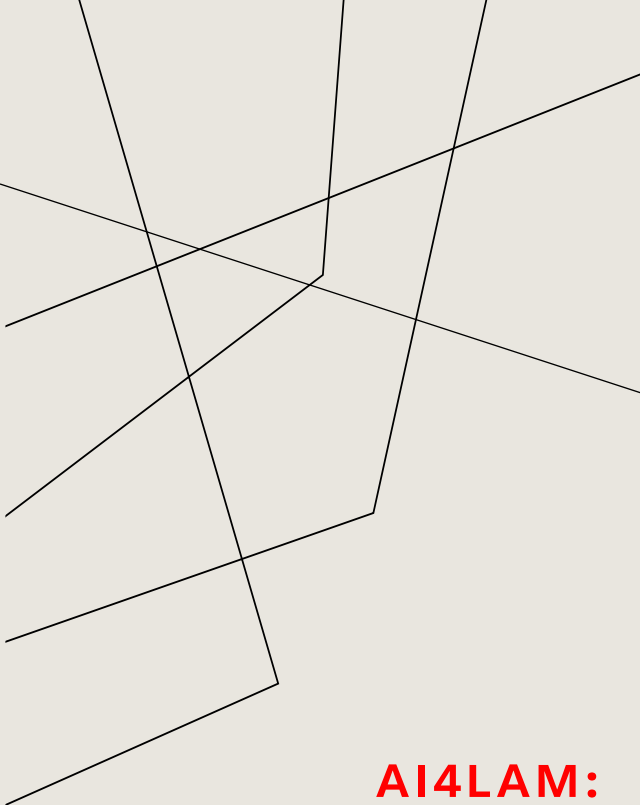
- Vodje, direktorji,
- Knjižničarji, raziskovalci, skrbniki zbirk, arhivisti ...
- Razvijalci informacijskih sistemov
- Upravljalci podatkov in podatkovni skrbniki

Univerze:

- Profesori, predavatelji
- Knjižničarji
- Študenti
- Sodelavci odprte znanosti
- ...

IT:

- razvijalci umetne inteligence
- razvijalci infrastrukture
- podatkovni znanstveniki
- raziskovalci jezikovnih modelov (LLM)
- ...

An abstract graphic design featuring a light gray background with several thin, dark gray lines intersecting at various angles. The lines create a complex, geometric pattern of overlapping shapes and triangles. In the bottom right corner, the text "AI4LAM:" is displayed in a bold, red, sans-serif font.

AI4LAM:



AI4LAM: MOČ SPREMEMB

POSAMEZNO SMO POČASNI IN IZOLIRANI.
SKUPAJ LAHKO GREMO HITREJE IN DLJE!

- Moč skupnosti, globalni vpliv
- Spodbujanje inovacij v sektorju GLAM
- Odgovorne, zanesljive in zaupanja vredne rešitve UI
- Ambasadorji pozitivnih sprememb in digitalne preobrazbe



GLAVNA PODROČJA DELA:



Pospeševanje

- razvoja,
- testiranja,
- vrednotenja in
- vključevanja

orodij in storitev UI v institucionalne postopke za inovativne rešitve in boljšo dostopnost.

Nadgrajevanje

- strokovnih znanj s pomočjo
 - izobraževalnih programov in sodelovanja
- za večjo učinkovitost in natančnost.

Fantastic Futures 2025

London, British Library, 3-5 december



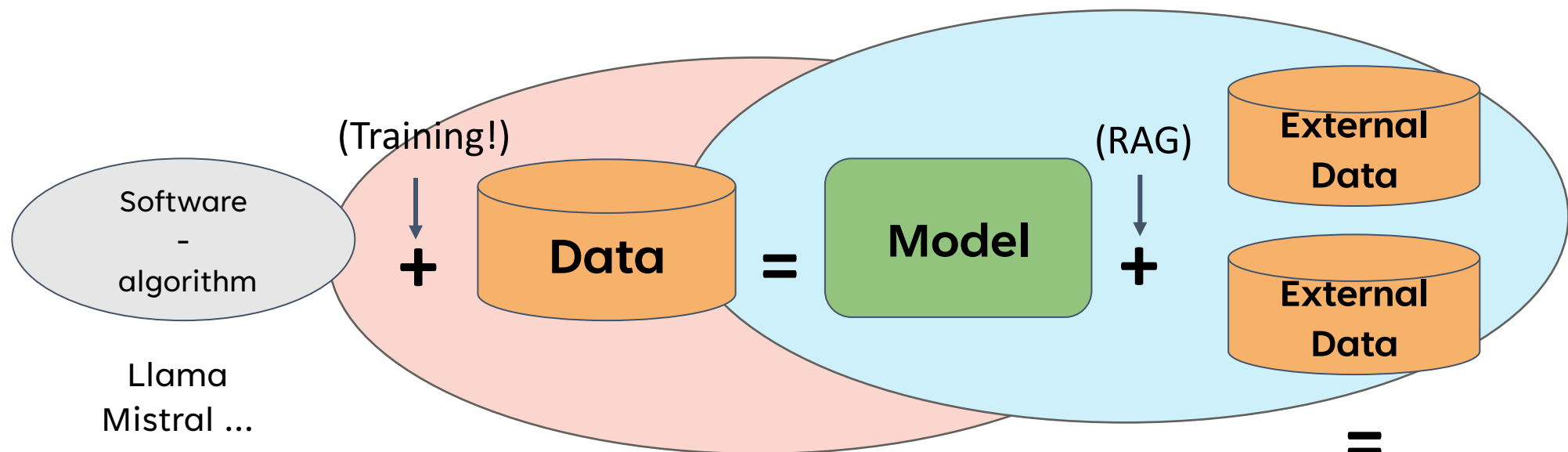
**RAZUMEVANJE,
ZAKAJ SO PODATKI GLAM
(NE)POMEMBNI?**



Priporočilo Evropske komisije za pospeševanje digitalizacije
kulturne dediščine
Skupni evropski podatkovni prostor za kulturno dediščino
Objavljeno: 22. november 2021



<https://socialstudieshelp.com/the-role-of-the-internet-in-cultural-exchange/>



GLAM DATA!

- Digitised / Digitally Born Cultural Heritage
- Different Media Types to support user experience (for persons with disabilities etc.)

- Natural Language Processing (NLP)
- Chatbots
- Transcribers
- Analytical tools
- Recommendation Systems
- Virtual Assistants and Onsite Visitor
- Translations and exhibition guides

- Scientific support (any scientific field)
- Industry and tourism
- Culture
- Education

OSTANIMO V IGRI!

KAKO?

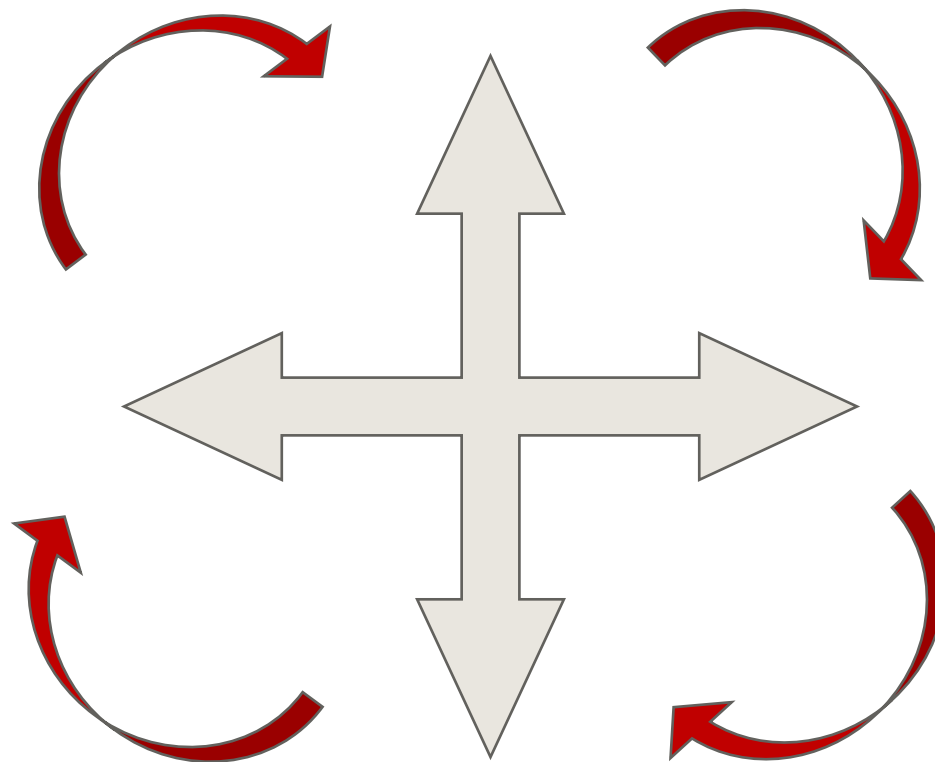
UI rešitve iz trga

TESTIRANJE,
EVALVACIJA,
PRIMERJAVA

Za interno rabo:

- Kreiranje metapodatkov,
- Pospeševanje automatizacije,
- Podpora dela,
- Izboljšava OCR itd.

REŠEVANJE
NOTRANJNH
IZZIVOV



UI rešitve razvite v GLAM

RAZUMEVANJE IN
UPOŠTEVANJE
UPORABNIŠKIH POTREB TER
VEDENJA

Za zunanje uporabnike:

- Chatboti, iskalniki, priporočilni sistemi,
- Raziskovanje in izobraževanje,
- Segmentacija podatkov,
- Vodiči po razstavah itd.

RAZVOJ STORITEV PO MERI
UPORABNIKOV

A series of white, overlapping geometric lines and polygons on a black background, located on the left side of the slide.

DIGITALNA HUMANISTIKA



~~DIGITALNA HUMANISTIKA~~

Raziskovanje na področju humanistike
je danes skoraj nemogoče brez
digitalne infrastrukture in orodij.



UMETNA INTELIGENCA = NOVA TEHNOLOGIJA

Generični termin



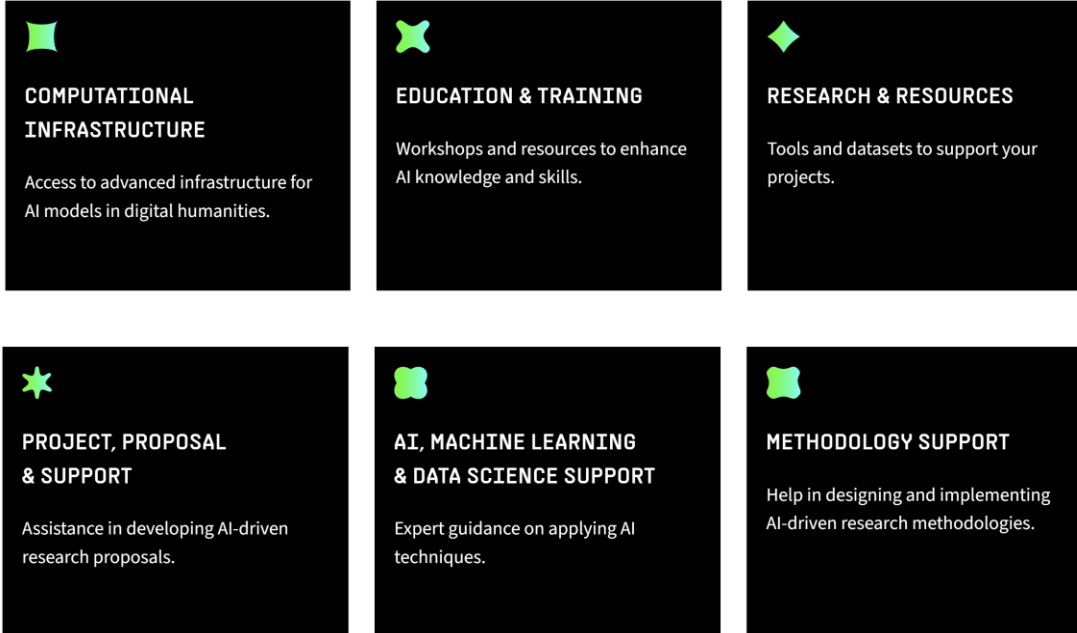
~~UMETNA INTELIGENCA~~ = NOVA TEHNOLOGIJA

Nova napredna tehnologija za različna področja raziskovanja in upravljanja kulturne dediščine:

- besedilne raziskave
- vektorska analiza
- 3D rekonstrukcija predmetov z umetno inteligenco
- izboljšano upravljanje podatkov in dostop itd.

CENTRE OF EXCELLENCE FOR ARTIFICIAL INTELLIGENCE IN DIGITAL HUMANITIES

Our mission is to empower digital humanities and social science researchers to apply state of the art AI technologies, driving new discoveries and advancing knowledge in their fields.



- Univerza v Ljubljani,
- €2.5 mio Horizon Europe, ERA Chair project.
- *Računalništvo in humanistične raziskave*

PRIMERI IZ PRAKSE: AI4LAM PARTNERJI



LIBRARY OF CONGRESS

Implementacija strategije

Abigail Potter



Principles for AI Use at the Library of Congress

Strengthen Trust

The Library will ensure that we are collecting, stewarding, and providing authentic and authoritative information in keeping with the mission of the Library.

Enhance Public Benefit

The Library will use AI technologies to support the broad availability and accessibility of our resources and services when, where, and how Congress and the American public need them.

Increase Accountability

The Library will ensure AI implementations are transparent and are used to augment the staff's responsibilities to serve Congress and the American people.

Foster Equity

The Library will proactively identify and reduce potential harms from biases and imbalances inherent in data-driven AI technologies by collaborating with communities and setting high quality standards for equitable outcomes.

Ensure Security

The Library will implement AI only as appropriate after thoughtful consideration of information technology security and privacy risks and will take steps to mitigate those risks.

Protect Rights

The Library's AI implementations will protect the intellectual property, privacy, civil liberties, and civil rights of Congress, staff, and the American people.



NACIONALNA KNJIŽNICA NORVEŠKE

Avtomatizacija digitalizacije časopisov in revij

NLN AI-lab, Rolv Arild Braathen and Freddy Wetjen



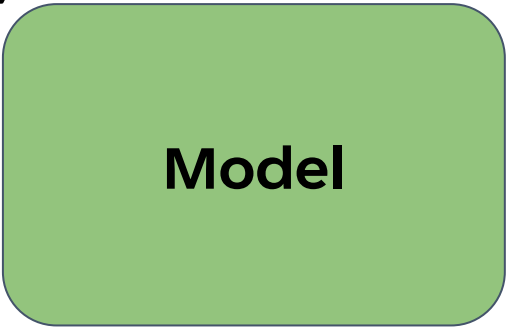
Digitalizacija



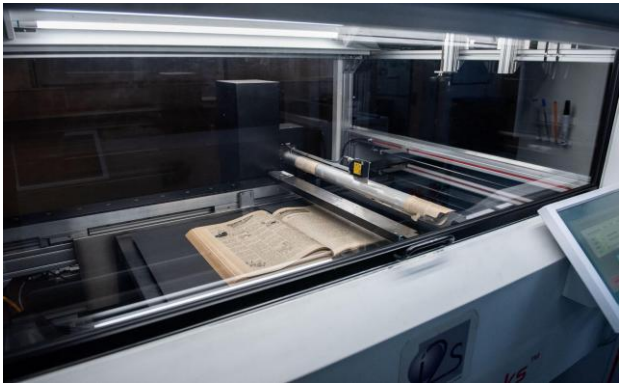
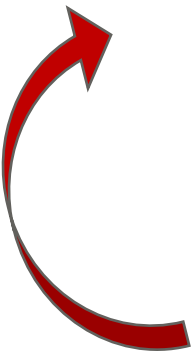
(Treniranje!)

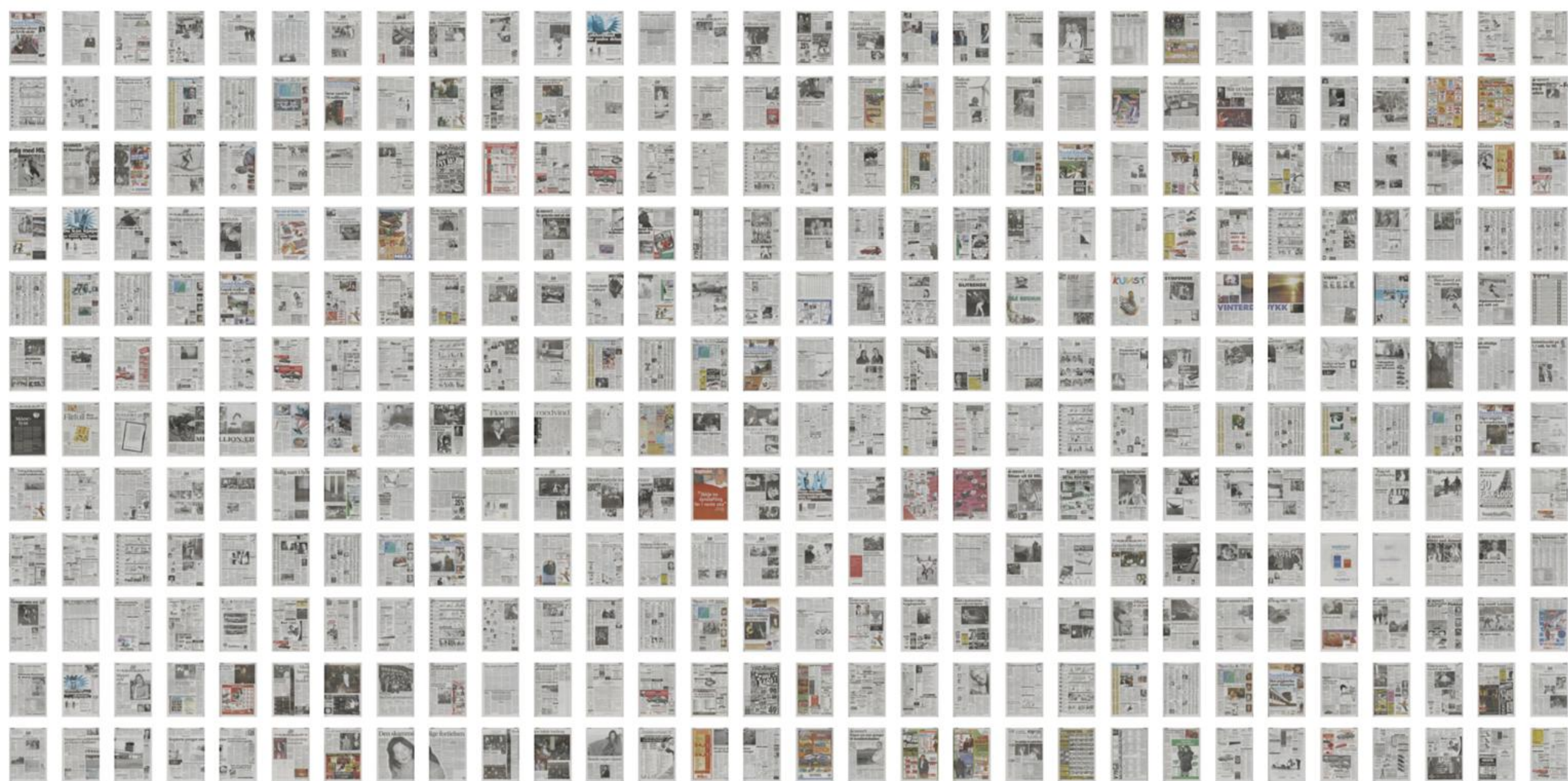


+



=









NACIONALNA KNJIŽNICA NORVEŠKE

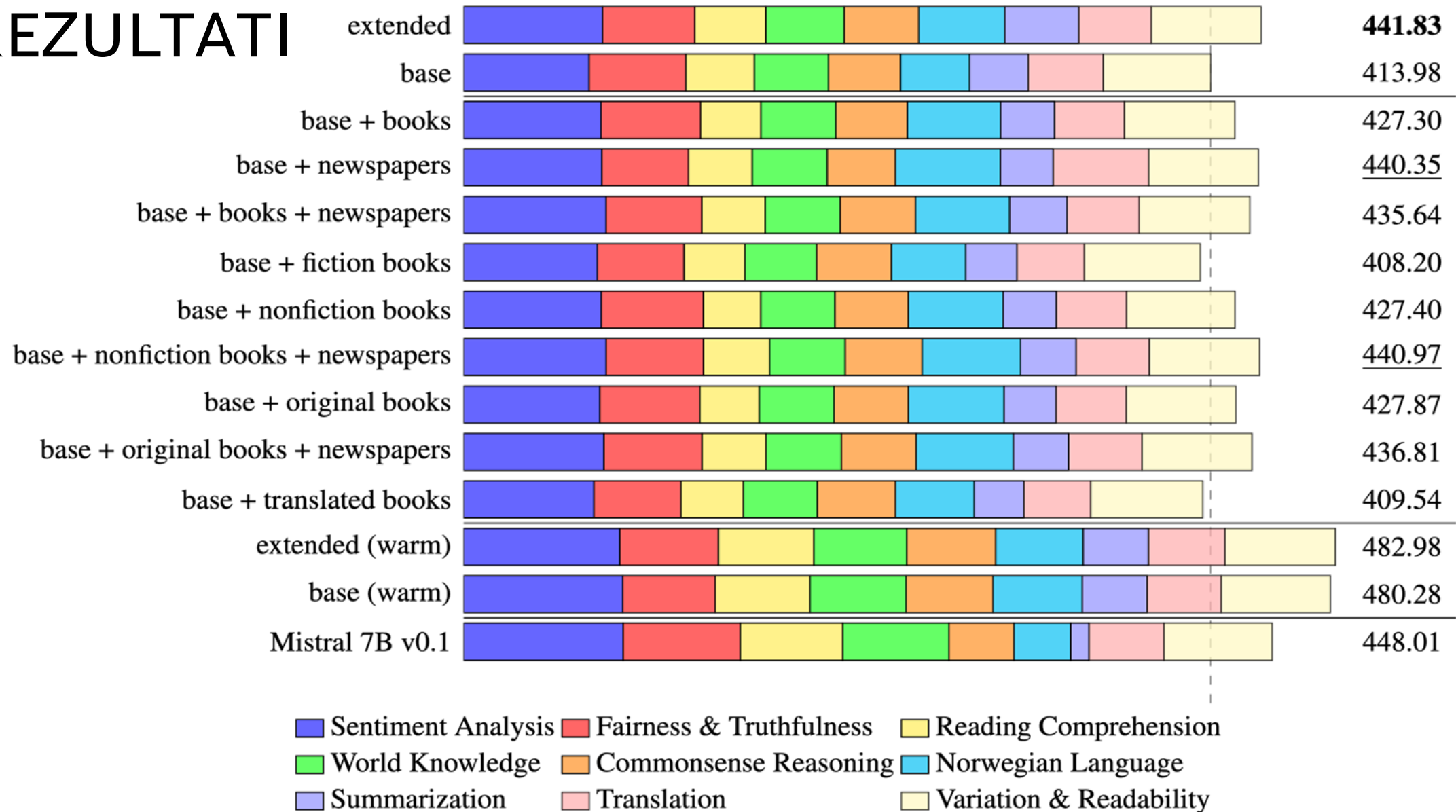
**Preverjanje, ali avtorsko zaščiteno gradivo
izboljša učinkovitost velikih jezikovnih modelov
(LLM)?**

NLN AI-lab, Javier de la Rosa et al.





REZULTATI



Projekt Mímir

- Treniranje z avtorsko zaščitenim gradivom
- Analiza vpliva avtorsko zaščitenega gradiva na jezikovno kakovost jezikovnih modelov.

PODATKI:

- Prosto dostopni podatki
- Podatki z omejenim dostopom zaradi avtorskih pravic
- Podatki z omejenim dostopom zaradi zaupnosti in varstva zasebnosti

VELIKI JEZIKOVNI MODELI (LLM) V ZDRAVSTVENIH IN OSKRBOVALNIH STORITVAH: NORVEŠKI PRIMER



NACIONALNA KNJIŽNICA FRANCIJE

**Samodejno indeksiranje obsežnih slikovnih
zbirk v Gallici**

Jean-Philippe Moreux

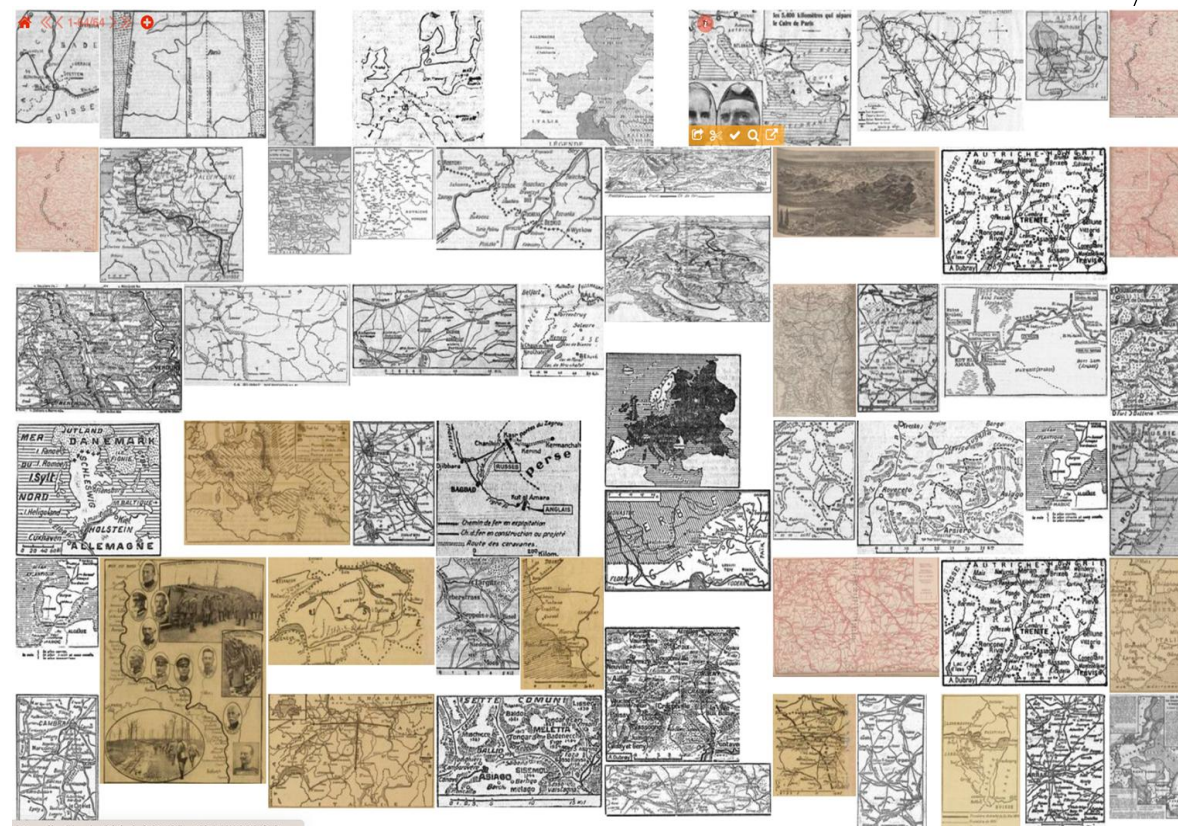
{BnF

GALLICA SLIKOVNA ZBIRKA

{ BnF

PODATKI:

- 50–100 milijonov ilustracij
- Iskanje informacij
- Razvrščanje slik kulturne dediščine
- Vizualna podobnost
- Segmentacija in rotacija
- Zaznavanje tehnik in žanrov
- Odprte vsebine: brezplačno iskanje in dostop prek API-jev
- IIIF različica 3, Gallica API-ji



gallicapix.bnf.fr: mape in periodične publikacije (1910-1920)



ISKANJE Z UI BREZ METAPODATKOV IN EKSTRAKCIJA METAPODATKOV

Archipanion

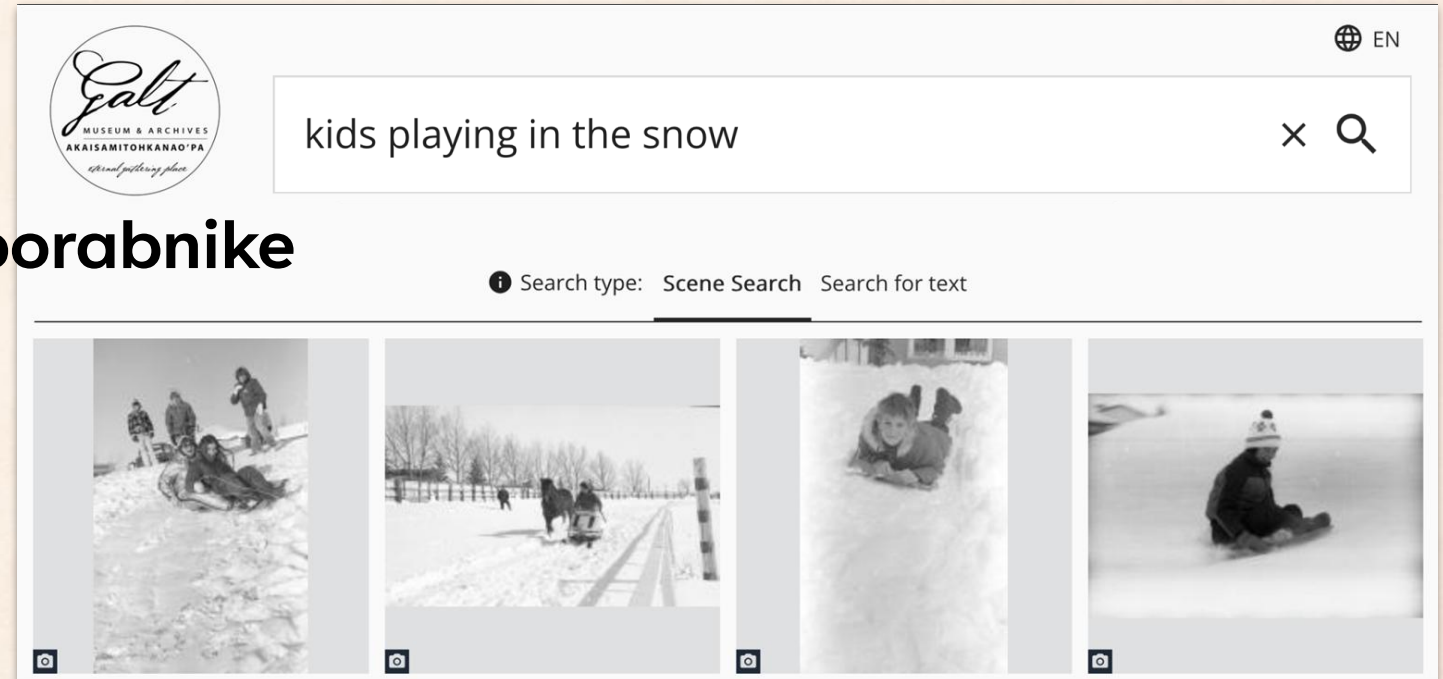
markus@4eyes.ch

Archipanion

UPORABA AI ZA ODKRIVANJE SLIK IN VIDEO GRADIVA BREZ METAPODATKOV

18.000 fotografij

- **Metapodatki niso potrebni**
- **Enostaven dostop za vse uporabnike**



Galt Museum & Archives, Lethbridge, Alberta
<https://galt.archipanion.com>

IZ SKENOV V STRUKTURIRANE PODATKE

20'000 POW kart → uporabni podatki

- Imena, datumi, mesta
- Tipkano in rokopisno
- Hitra katalogizacija

Nom:	France TABACCHI	Prénom:	ANDRE
Arme:	Génie	Classe:	1920
Rgt:	10 ^{em} Génie	Bat:	358 Sapeurs
né le:	3 Octobre 1900	à	Baumont
		Dép.:	



	A	B
1	Lastname	Tabacchi
2	Firstname	Andre
3	Birthdate	1900-10-03

Swiss Federal Archives

VERJETNOSTNO INDEKSIRANJE KOMPLEKSNIH ARHIVSKIH ZBIRK

[Transkriptorium.com](https://transkriptorium.com)

Valencia, Spain



TEXTUAL UNDERSTANDING SUPPORT THROUGH AUTOMATED TRANSCRIPTION

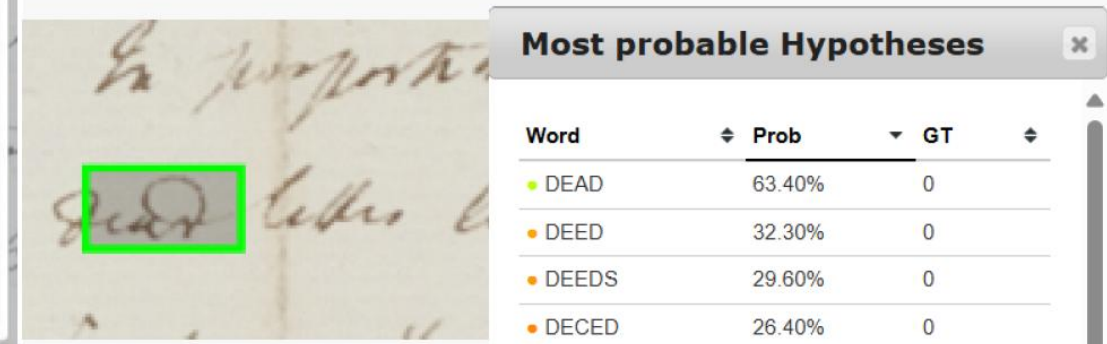
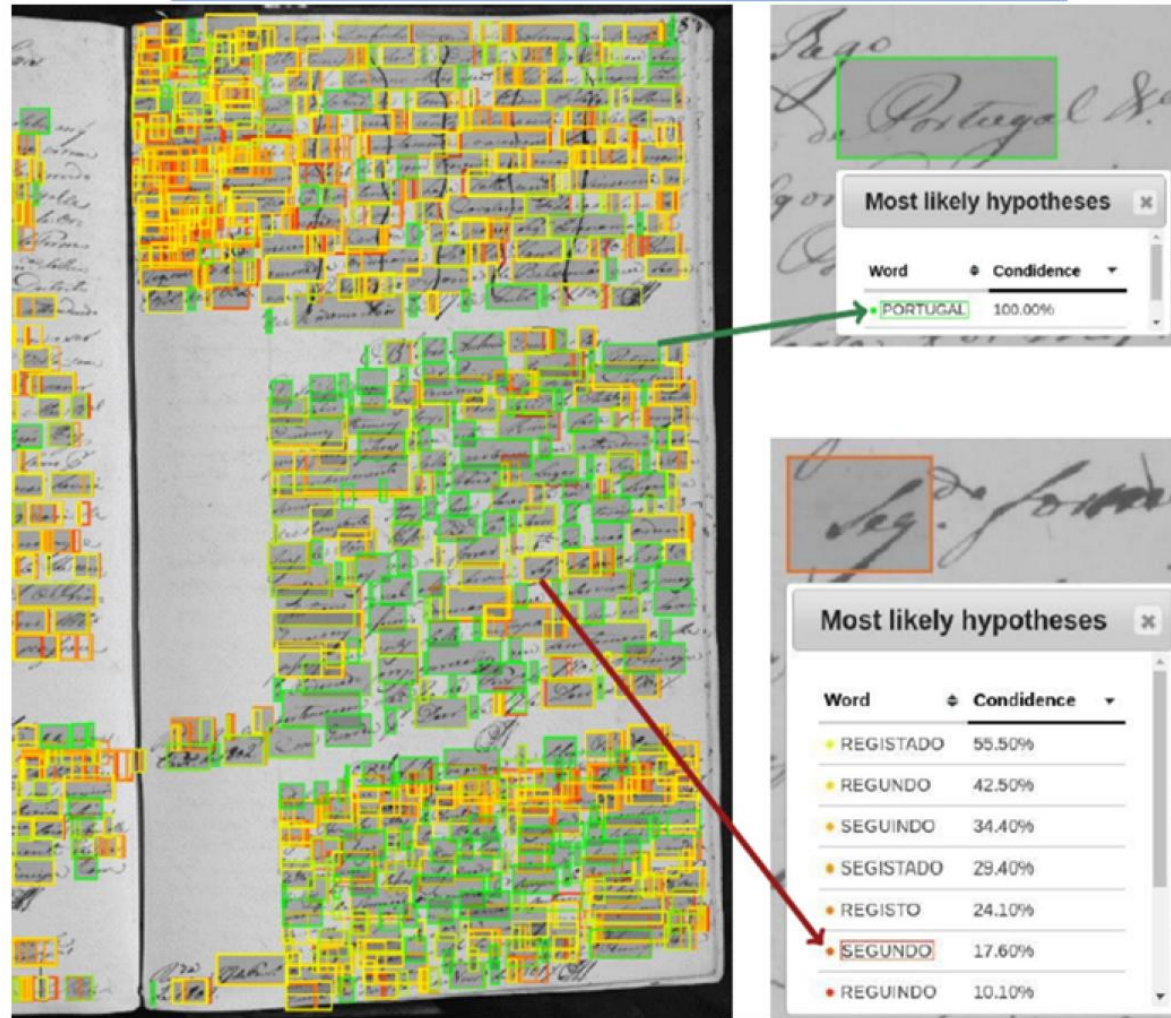
• 75-95% SUCCESS RATE

PRIX - SMARTER ACCESS TO ARCHIVES

- 90% ACCURACY, BEYOND OCR & HTR
- AUTOMATES UP TO 80% OF COLLECTIONS
- TRANSCRIPTION AID & METADATA EXTRACTION
- RECOGNIZES NAMES, DATES, SEALS, MUSIC
- FITS ANY MANAGEMENT SOFTWARE
- FLEXIBLE, TAILORED, ARCHIVIST-FRIENDLY

☛ WE EMPOWER ARCHIVISTS, NOT REPLACE THEM

PROBABILISTIC INDEXING WITH JUST TWO CLICKS!





NACIONALNA GALERIJA ZDA

Pridobivanje podatkov iz arhivskega gradiva s
pomočjo UI

Abby Foster, Keith Krut

National Gallery of Art

AI-Powered Data Extraction from Archival Items

Azure Cognitive Services Custom Data Extraction Model

Training:

classificationNumber
connects archival item
to art object

Document Intelligence Studio > Custom extraction model > IAD Data Sheets > Label data

Label data

Drag & drop file here or
Browse for files

- ☒ 44A7_... NN.pdf
- ☒ 44A7_... NN.pdf
- ☒ 44A7_1... -5.pdf
- ☒ 44A7_1... 22.pdf
- ☒ 44A7_1... 45.pdf
- ☒ 44A7_1... 24.pdf
- ☒ 44A7_1... 86.pdf
- ☒ 44A7_1... -6.pdf
- ☒ 44A7_1... 75.pdf
- ☒ 44A7_1... 0a.pdf
- ☒ 44A7_1... 02.pdf
- ☒ 44A7_1... 12.pdf
- ☒ 44A7_1... 6b.pdf
- ☒ 44A7_1... 15.pdf
- ☒ 44A7_1... 93.pdf
- ☒ 44A7_1... 56.pdf
- ☒ 44A7_1... -1.pdf

Run layout
 Auto label
 Draw region

+ Add a field

1	●	classificationNumber	
		FLA - TE 24	X
2	●	documentDate	
		September 27, 1938	X
3	●	objectName	
		SAMPLER	X
4	●	objectDate	
		1813	X
5	●	objectStyle	
			X
6	●	objectOriginalOwner	
		Eunice W Cook	X
7	●	objectDesignedBy	
		Eunice W Cook	X
8	●	objectMadeBy	
		Eunice W Cook	X
9	●	objectMadeWhere	
		Vermont	X

< 1 of 1 >
🔍 🔍 🔄 ↺

National Gallery of Art

What Does this Data Work Make Possible?

National Gallery of Art

Art Object Page in Speculative IAD Cross-Collection Prototype

Related archival items:

Overview >

Inscription >

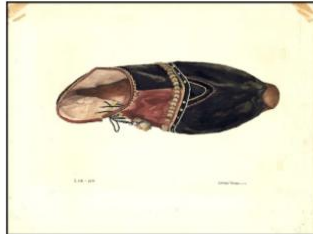
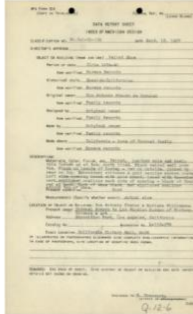
Provenance >

Exhibition History >

Bibliography >

Overview

This is a drawing of a historical shoe from circa 1834-40. The drawing was made by Gerald Transpota in California as part of a nationwide project called the [Index of American Design](#), which was established by the U. S. federal government during the Great Depression. More information about the object can be found in the archival image(s) below, created during the project.



Data Sheet

Preparatory Drawing

Extracted data from archival data sheets:

What was reported about this object

Made by: Don Antonio Franco de Co
Made where: California
Original owner: Don Antonio Franco de Co

In some cases, this content has been extracted from the historical data sheets using a combination of OCR and AI technologies, which may have inadvertently introduced typos or errors—particularly if the original text was handwritten. We will continue working to fix any issues as they are identified.

Natural History

Description and remarks from the historical data sheet

[Statement on limitations of historical content](#)

Velvet. Leather sole and heel; sole turned up at toe; cloth lined. Black velvet well over toe. Black on inside of instep - red on outside, joined by seam on top. Embroidery stitches & gold sequins across instep. Left side opening bound with gold braid; laced with tasseled cord. Appliqued scallops on each side of opening - black at front, red at back. Back of...

[Read more](#)



RUDOLFOVO – ZNANSTVENO IN TEHNOLOŠKO SREDIŠČE NOVO MESTO

Analiza in segmentacija figuralnih prizorov s
pomočjo umetne intelligence

Slavko Arh, Vesna Pungerčar, Lucijano Berus,
Jakob Fabjan, Primož Zobec



ANALIZA: DETEKCIJA GRAFITOV NA FRESKAH

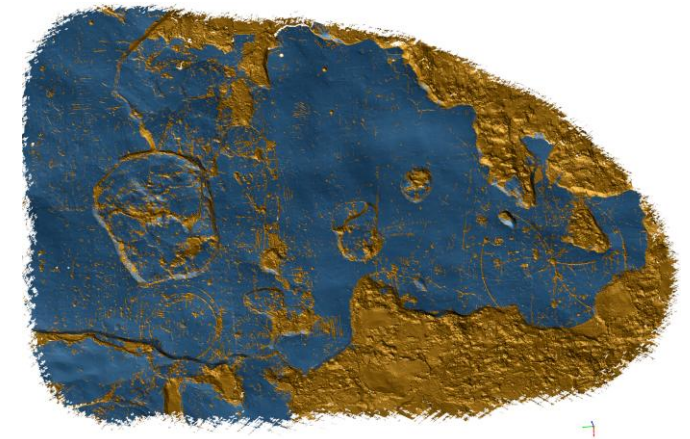
Freske so bile najprej 3D skenirane, saj so bili vanje vrezani grafiti; nato so bili vrezani znaki s pomočjo UI orodja ločeni od površine fresk.



3D scanning of frescoes



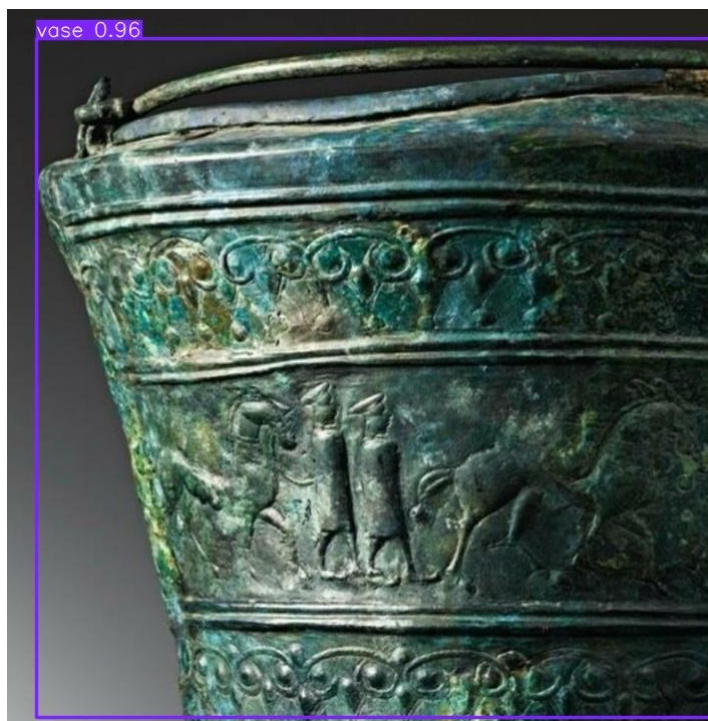
Labeling / annotation of frescoes



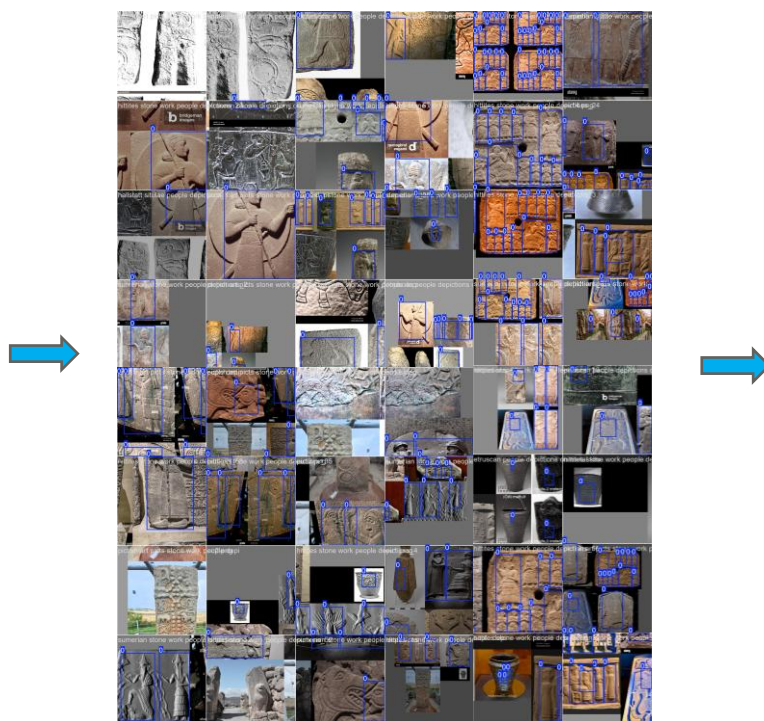
AI-detection of graffiti

{ ANALIZA: SEGMENTACIJA FIGURALNIH SCEN NA SITULAH

3D skeniranje situl iz zgodnje železne dobe, razvijanje površin, izboljšanje slikovnega gradiva, samodejna analiza in prepoznavanje motivov (človeške figure).



Object detection (Bronze situla)



Pretraining on a large dataset



Human-figure detection



SPEECH-TO-TEXT EKSTRAKCIJA

Co-chairs:

- Tom Cramer (Stanford University Libraries)
- Javier de la Rosa (National Library of Norway)
- Owen King (GBH Archives / American Archive of Public Broadcasting)
- Svein Arne Brygfjeld (National Library of Norway)

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AI4LAM WORKING GROUP

WEBVTT

01:13.460 --> 01:18.980

Good evening from the Fleet Center in Boston. I'm Jim Lara and I welcome you to our special

01:18.980 --> 01:24.340

PBS NewsHour coverage of the second night of the Democratic National Convention. Once

01:24.340 --> 01:29.540

again we will offer the major events from the podium and floor, combined with analysis

01:29.540 --> 01:34.520

and commentary from Mark Shields and David Brooks, plus historians Michael Beschloss,

01:34.740 --> 01:40.040

Richard Norton-Smith and Ellen Fitzpatrick, among others. Gwen Ifill on the floor has

01:40.040 --> 01:42.720

the official Democratic lineup for the evening. Gwen?

01:43.460 --> 01:47.120

First, of course, Ted Kennedy, the liberal line of the party. We expect to hear from

01:47.120 --> 01:52.040

him shortly, followed by some vanquished foes of John Kerry's, Dick Gephardt and Howard

01:52.040 --> 01:56.840

Dean, a couple of rising stars of the party, Christy Vilsack of Iowa, Janet Napolitano,

01:56.840 --> 02:01.280

the governor of Arizona, and we're going to hear from Barack Obama, the keynote speaker

- Kdo so različni govorniki?
- Ali so imena pravilno zapisana? (npr. "Jim Lara" ali "Jim Lehrer")
- Na kateri zvočni posnetek se nanašajo časovne oznake?
- Kateri model za samodejno prepoznavanje govora (ASR) je ustvaril ta prepis?
- Katere programske nastavitve so bile uporabljene?
- Kakšni so znani vzorci napak tega ASR modela?
- Koliko natančnejši so novejši ASR modeli?
- Kakšen je najučinkovitejši način za ročno popravljanje ASR prepisov?

GBH Archives / American Archive of Public Broadcasting)

Transcript courtesy the American Archive of Public Broadcasting

<https://americanarchive.org/catalog/cpb-aacip-507-j96057dm3w>

NACIONALNA KNJIŽNICA LUXEMBOURGA

Chatbot v eLuxemburgensiji

Yves Maurer et al.



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29/09/2023 11:45

[Who was the first Prim...](#)

27/09/2023 10:47

[What are the most play...](#)

27/09/2023 10:45



Fasse die Debatten runum das Maulkorbgesetz zusammen



Das Maulkorbgesetz war ein umstrittenes Thema in Luxemburg im Jahr 1937. Es wurde eine Gesetzesvorlage eingebracht, die darauf abzielte, den Kommunismus zu bekämpfen und die politische und soziale Ordnung zu schützen. Die Diskussionen darüber fanden sowohl in der Chambre des Députés als auch in der Öffentlichkeit statt. Die Befürworter des Gesetzes argumentierten, dass es notwendig sei, um die verfassungsmäßige Ordnung zu wahren und die Aktivitäten kommunistischer Gruppen zu unterbinden. Die Gegner hingegen waren der Ansicht, dass das Gesetz gegen die Meinungsfreiheit und die demokratischen Prinzipien verstoße. Sie betonten, dass der Kommunismus keine ernsthafte Bedrohung darstelle und dass das Gesetz unnötig sei. Trotz dieser kontroversen Debatten wurde das Gesetz schließlich von der Mehrheit der Chambre des Députés angenommen. Allerdings fand kurz darauf ein Referendum statt, bei dem das Volk das Gesetz ablehnte. Dieses Referendum war das zweite und bisher letzte Referendum in der Geschichte Luxemburgs. Es zeigt, dass die Bevölkerung das Maulkorbgesetz nicht unterstützte und die Meinungsfreiheit verteidigte. Dieses Ereignis hatte einen großen Einfluss auf die politische Entwicklung des Landes und markierte das Ende der Diskussionen um das Maulkorbgesetz.



My answer is based on these articles:



Union (L')

#1 • 1868-03-22



Union (L')

#2 • 1868-03-29



Avenir (L')

#3 • 1870-02-22

Send a message in French, German, English or Luxembourgish. (Shortcut: ENTER)







NACIONALNA KNJIŽNICA NORVEŠKE

Digitalna kulturna ustanova prihodnosti?

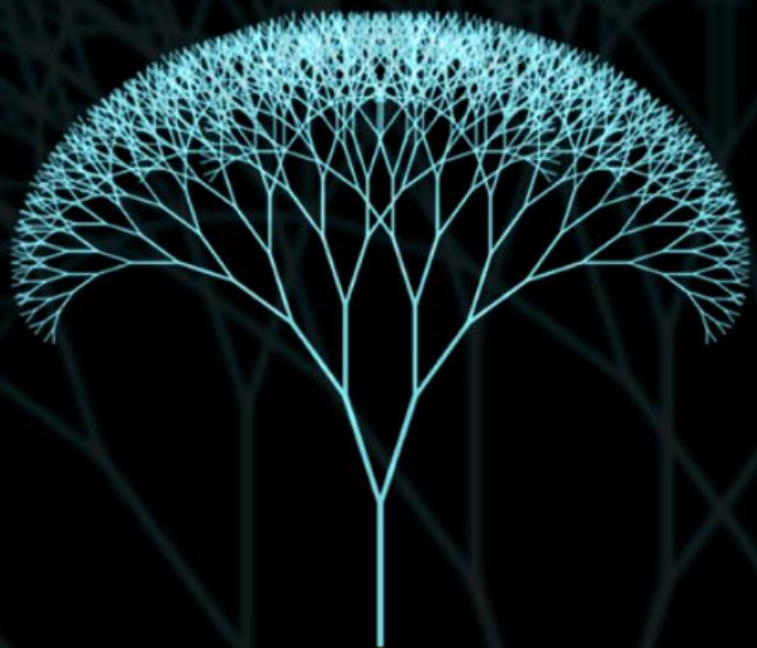




DEFINICIJA NOVIH UPORABNIKOV:

- **Medicinska stroka?**
- **Google?**

Rudnik,
Norveška Nacionalna knjižnica,
Mo i Rana



Artificial Intelligence for Libraries, Archives & Museums

Vprašanja?

AI4LAM

Hvala za pozornost!

Ines Vodopivec

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