Encontros IA e Biblioteconomia: em questão os vocabulários controlados

Grupo de Informação e Documentação Jurídicas do Distrito Federal - GIDJ-DF

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Fonte: https://www.nypl.org/blog/2016/01/05/share-public-domain-collections

UnB

A UnB quem faz **é a gente**

Quem sou eu: institucionalidade

Universidade de Brasília
Faculdade de Ciência da Informação

Laboratório de Inteligência de Redes
http://dgp.cnpq.br/dgp/espelhogrupo/547278
Biblioteca Central

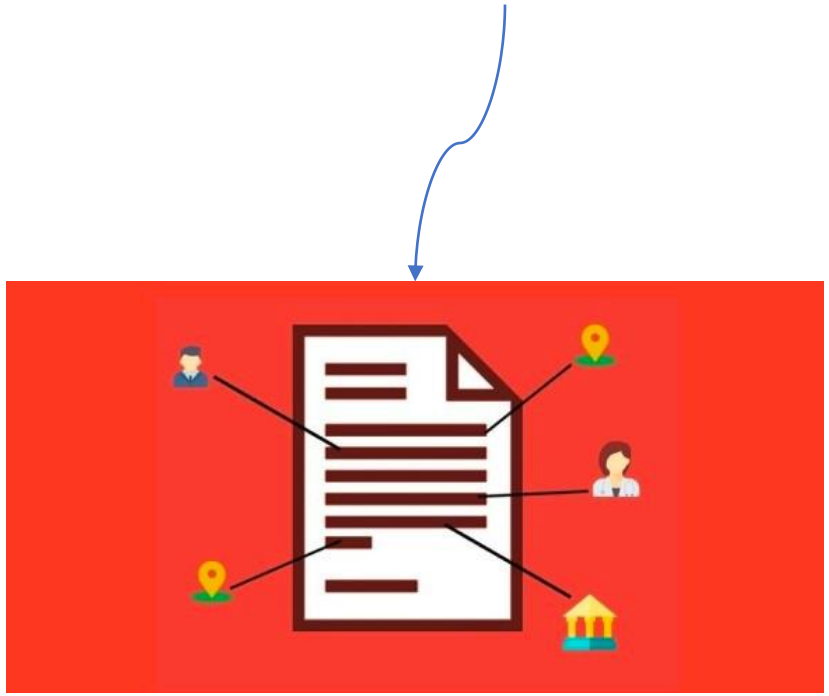
Quem somos nós: principais projetos

Tainacan

- **Pesquisa e desenvolvimento do Tainacan:** software para repositório digital para organização, gestão e difusão de acervos digitais em rede.
- Em uso pelo IBRAM, FUNARTE, IPHAN, entre várias outras instituições;
- Mais informações: https://tainacan.org/

Quem somos nós: principais projetos

- Reconhecimento e reconciliação semântica de entidades em texto;
- Geração automática e semiautomática de metadados.



Pela primeira vez documentada no século XIII, Berlim foi sucessivamente a capital do Reino da Prússia (1701), do Império Alemão (1871-1918), da República de Weimar (1919-1932) e do Terceiro Reich (1933-1945). Depois da Segunda Guerra Mundial, a cidade foi dividida. Berlim Oriental se tornou a capital da República Democrática Alemã (RDA), enquanto Berlim Ocidental continuou sendo parte da República Federal da Alemanha (RFA).18 Com a reunificação alemã em 1990, a cidade passou a ser capital de toda a Alemanha.

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Contexto atual
Características do problema

Contexto atual

- Sintomas do problema:
  - **Onde estão as referências** que eu anotei como importantes para o projeto?
  - Como **encontro o arquivo da apresentação** que fiz no ano passado com esse mesmo tema?
  - Me enviaram um documento de texto, mas quando o abro ele está **sem formatação** e não consigo reutilizar imediatamente!
  - Fiz minha apresentação em um formato que o computador onde vou apresentar **não abre!!!**
  - Estou tentando encontrar aquela foto que publiquei em uma mídia social e **não acho de forma alguma!**
  - Estou **procurando por um conceito** em um documento mas não o encontro da forma que escrevo!

Fonte: https://unsplash.com/photos/gcsNOsPEXfs

Contexto atual

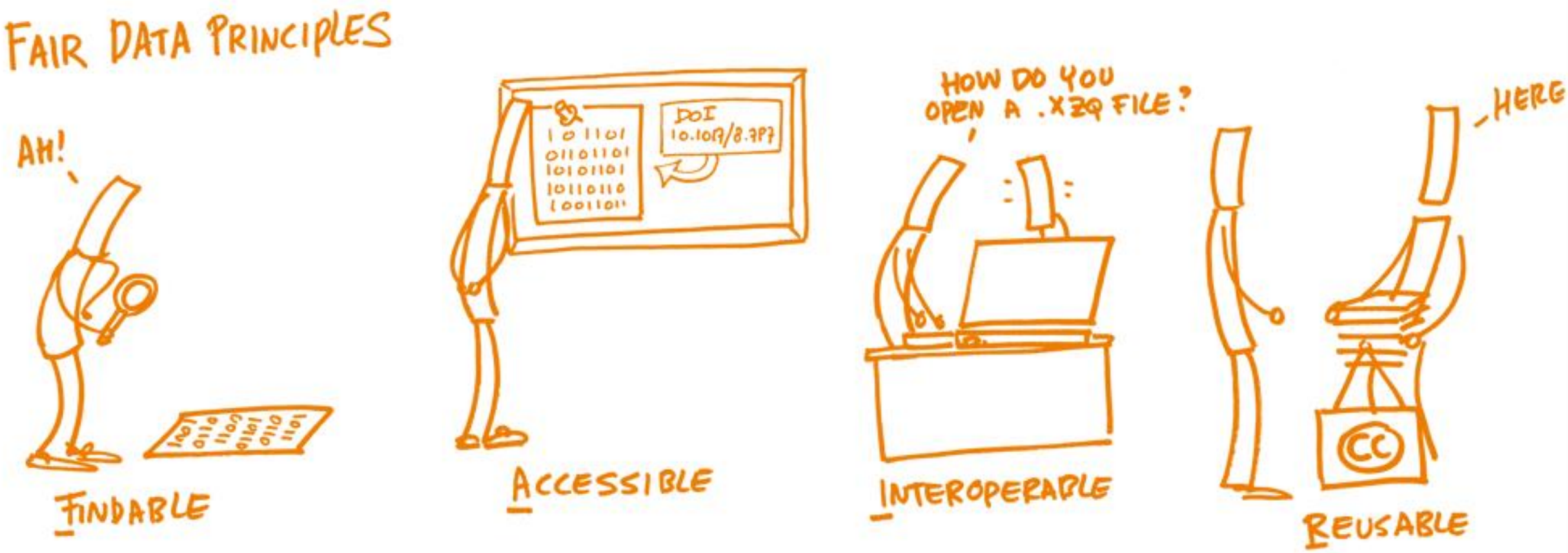
- Características do problema:
  - Enorme **produção de documentos e informações** em formato digital e baixa capacidade de organização;
  - Demanda contínua pela **digitalização de documentos físicos** legados: memória e pesquisa;
  - **Multiplicidade de sistemas** e baixa conectividade e interoperabilidade entre eles;
  - **Vários equipamentos** (celulares, tablets, notebooks, câmeras...) facilitando a convergência digital e **baixa capacidade de utilizar** isso de forma coordenada e eficiente;
  - **Sobrecarga cognitiva e stress** na tentativa de lidar com o fluxo.

Fonte: https://unsplash.com/photos/SYTO3xs06fU

Em resumo, grandes dificuldades de gerar valor social da convergência digital da sociedade

O problema:
Como potencializar a capacidade de extrair valor social dos objetos digitais?

4 princípios operacionais para maximizar o uso de objetos digitais

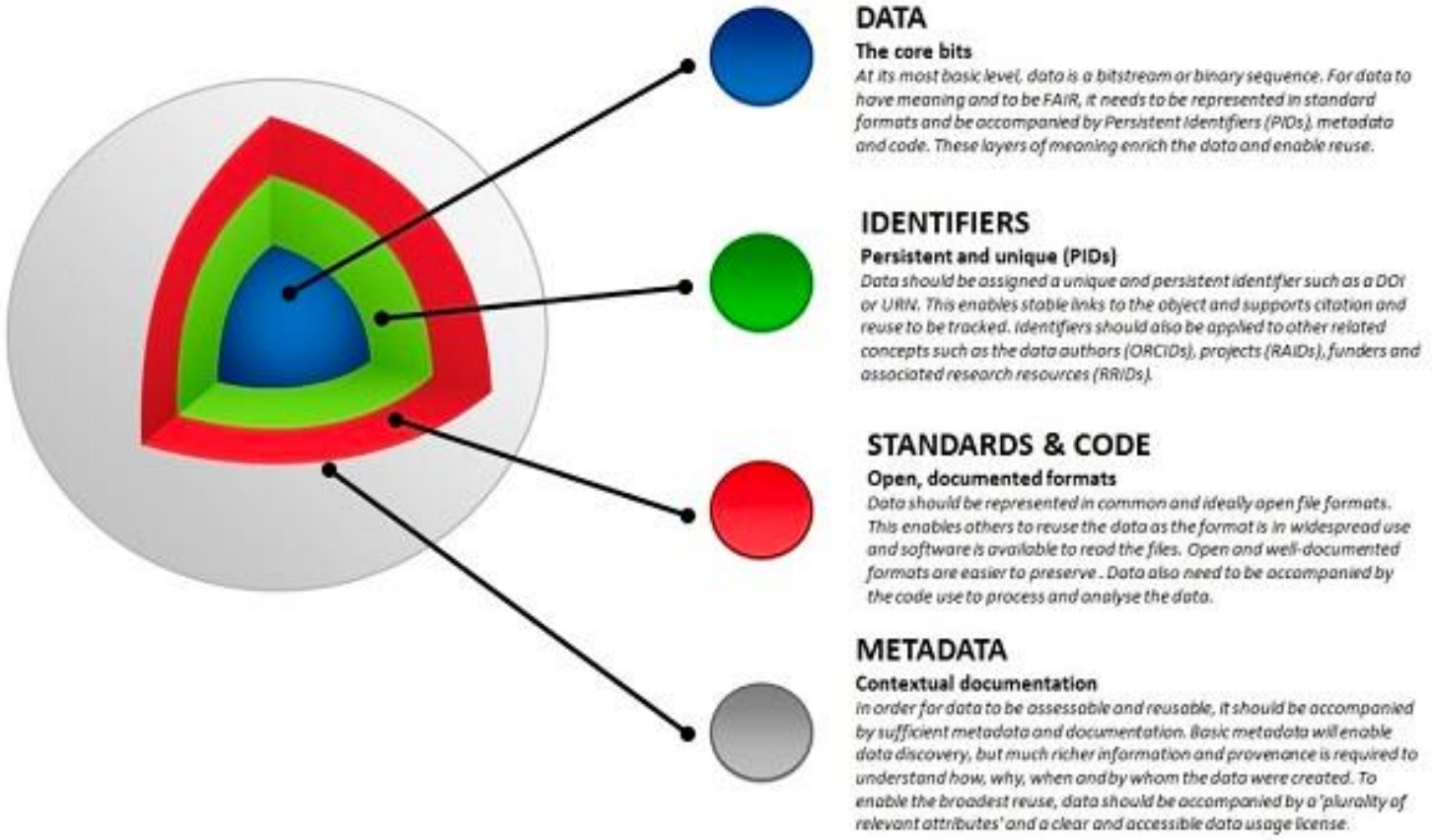


Fonte: https://www.fosteropenscience.eu/learning/assessing-the-fairness-of-data/#/id/5c52e8cf0d3def29462d8cb5

Esses princípios podem ser implementados a partir de uma compreensão dos objetos digitais em camadas

Modelo em camadas de tratamento dos objetos digitais

- Camadas para um uso eficiente dos objetos digitais:
  - **Dados:**
    - os arquivos digitais
  - **Identificadores:**
    - formas únicas e persistentes de identificação dos arquivos
  - **Padrões e códigos:**
    - linguagens documentárias (listas de termos, tesauros, taxonomias, ontologias, etc...), códigos de classificação (CDU, CDD...) e padrões de catalogação
  - **Metadados:**
    - informação contextual sobre os documentos (data, título, características, etc...



Fonte http://aims.fao.org/activity/blog/fair-principles-digital-objects-role-metadata

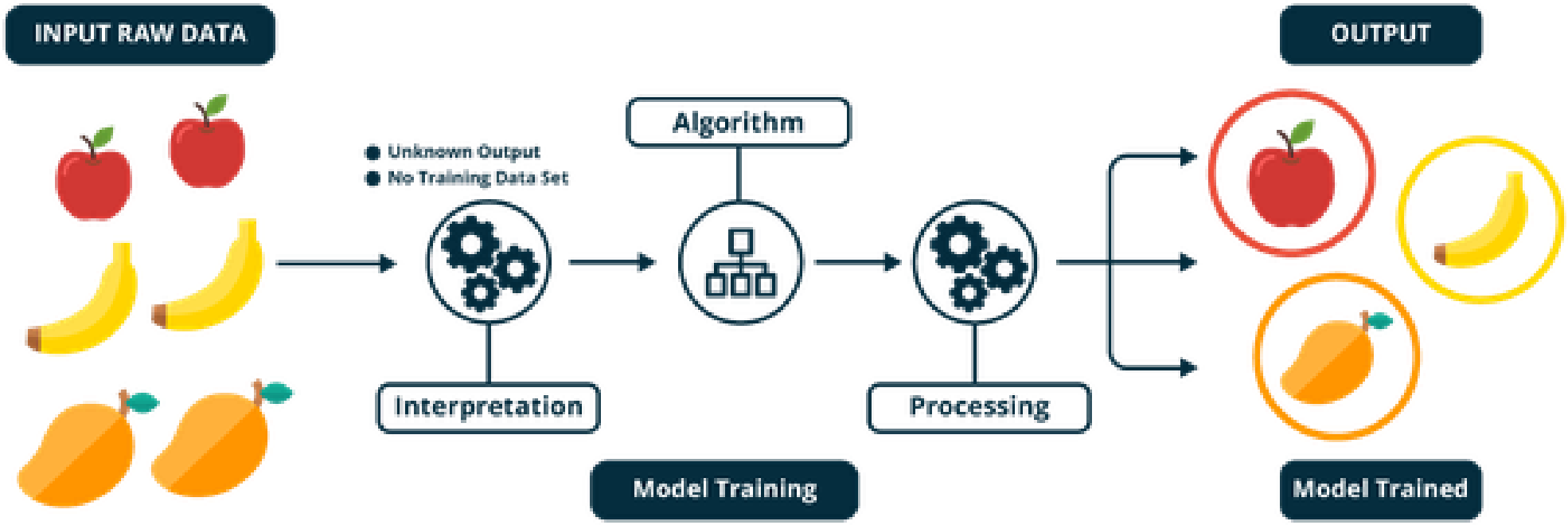
E o que isso tudo tem a ver com inteligência artificial e aprendizagem de máquina?

Algumas definições

- Inteligência artificial:
  - Conceito definido em 1955 por John McCarthy
    - http://jmc.stanford.edu/artificial-intelligence/index.html
  - ”denota qualquer tipo de inteligência que não surge de processos naturais (...)”
  - Coloquialmente, se refere a programas de computador que tomam decisões e julgamentos que tradicionalmente são atribuídos a seres humanos.

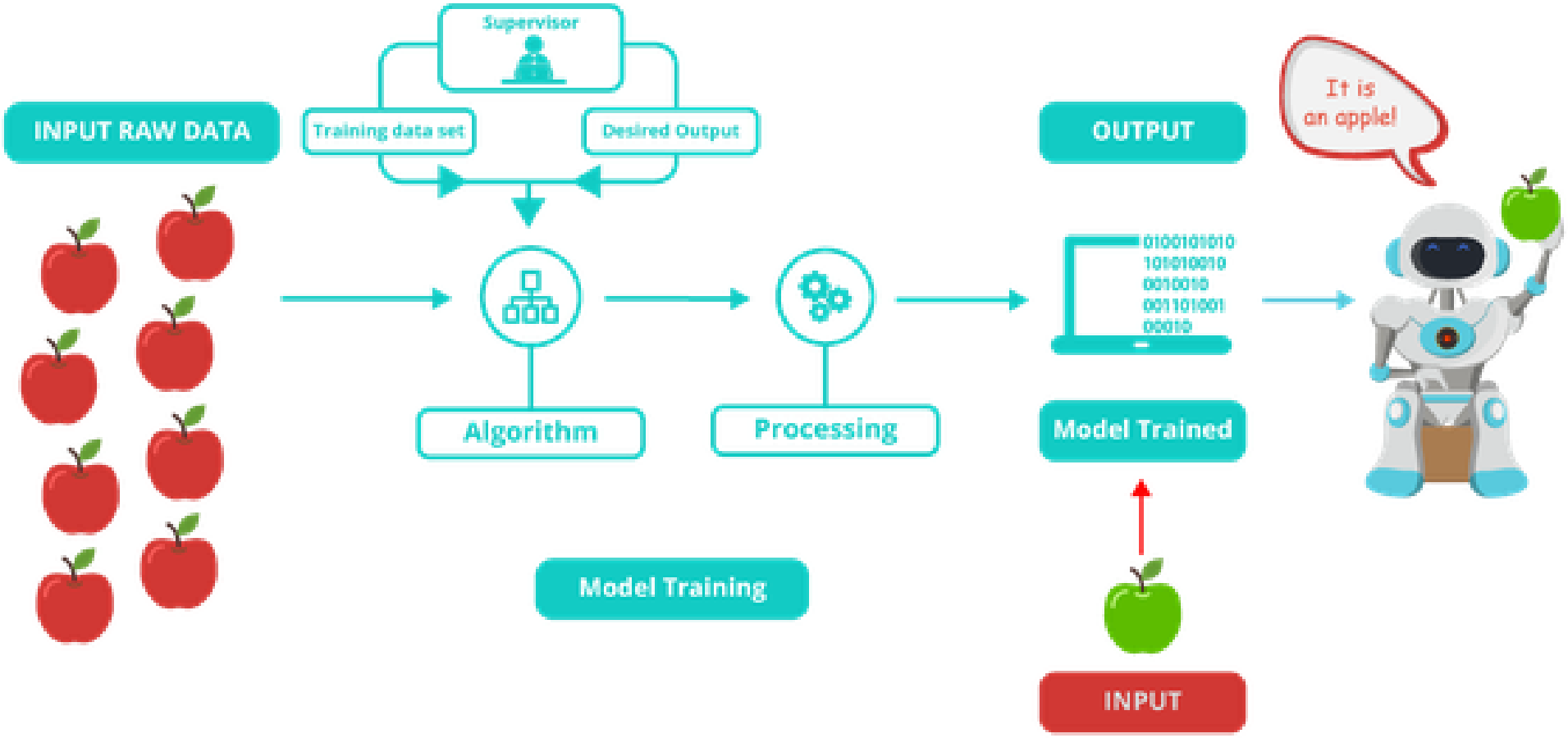
De maneira simplista, podemos dizer que existem duas grandes abordagens de inteligência artificial: supervisionada e não-supervisionada

Modelos não-supervisionados



Fonte: https://medium.com/better-programming/an-introduction-to-machine-learning-a4a6506c4bc7

Modelos supervisionados

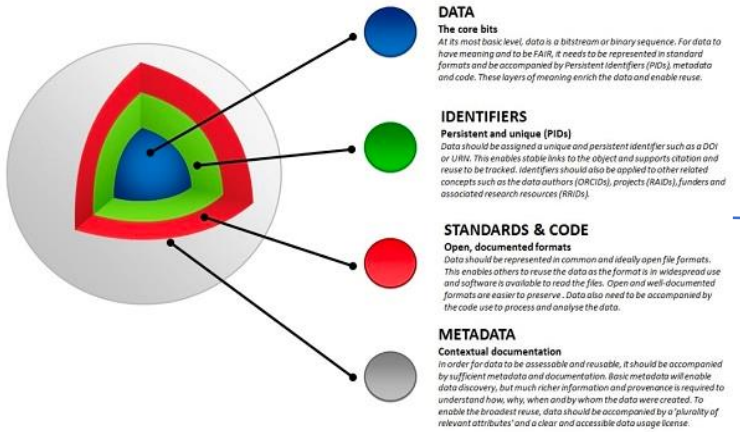


Fonte: https://medium.com/better-programming/an-introduction-to-machine-learning-a4a6506c4bc7

E onde entra a questão da **qualidade da informação**? E como isso se relaciona a forma com a qual lidamos com os **objetos digitais**?

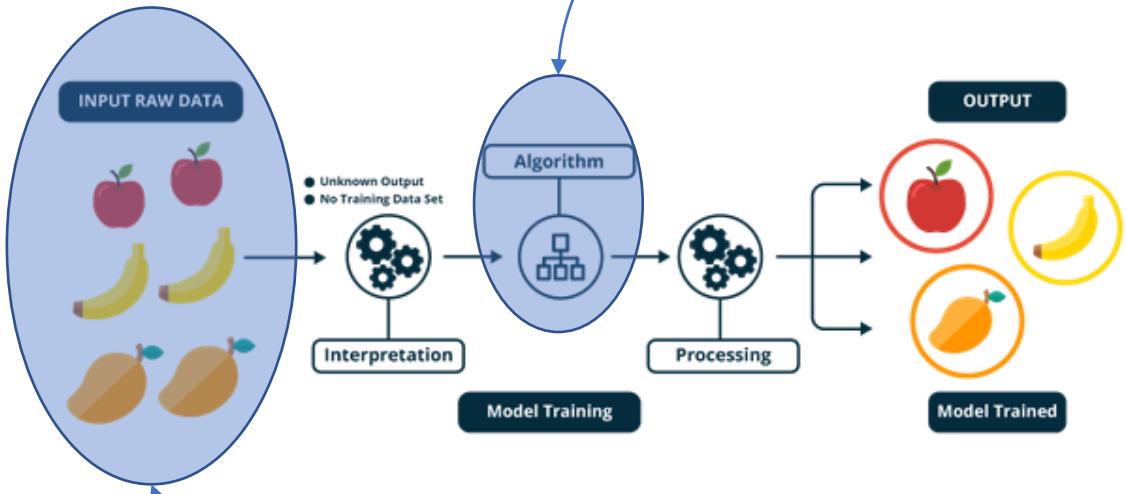
Modelo de Qualidade da informação para a IA

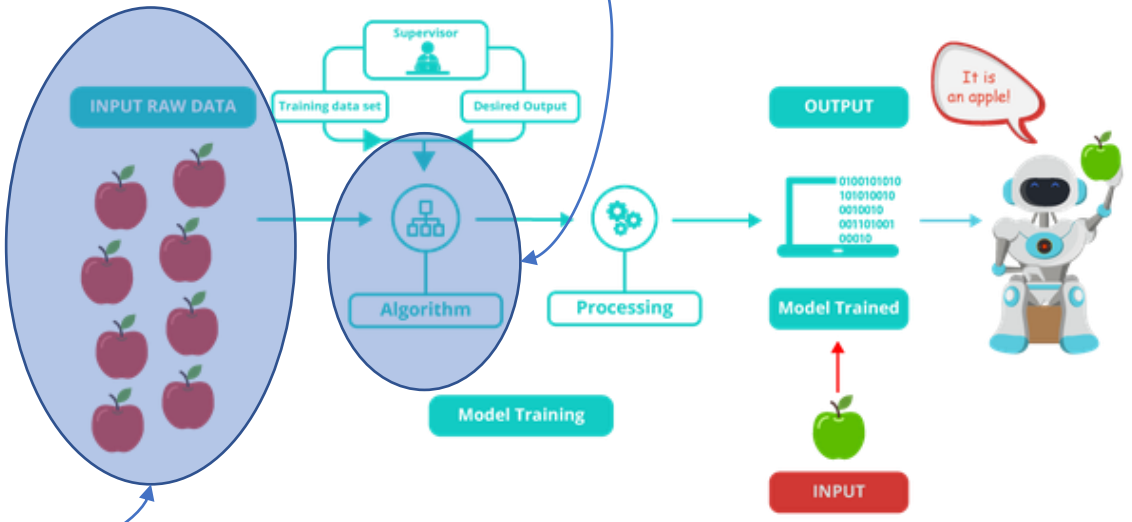
Os algoritmos podem selecionar para processar que tipo de informações? Podem aproveitar e se beneficiar de todo o esforço humano na catalogação, adoção de padrões e documentação ao longo do tempo?



Camadas de descrição de objetos digitais

Seleção e processamento de informação

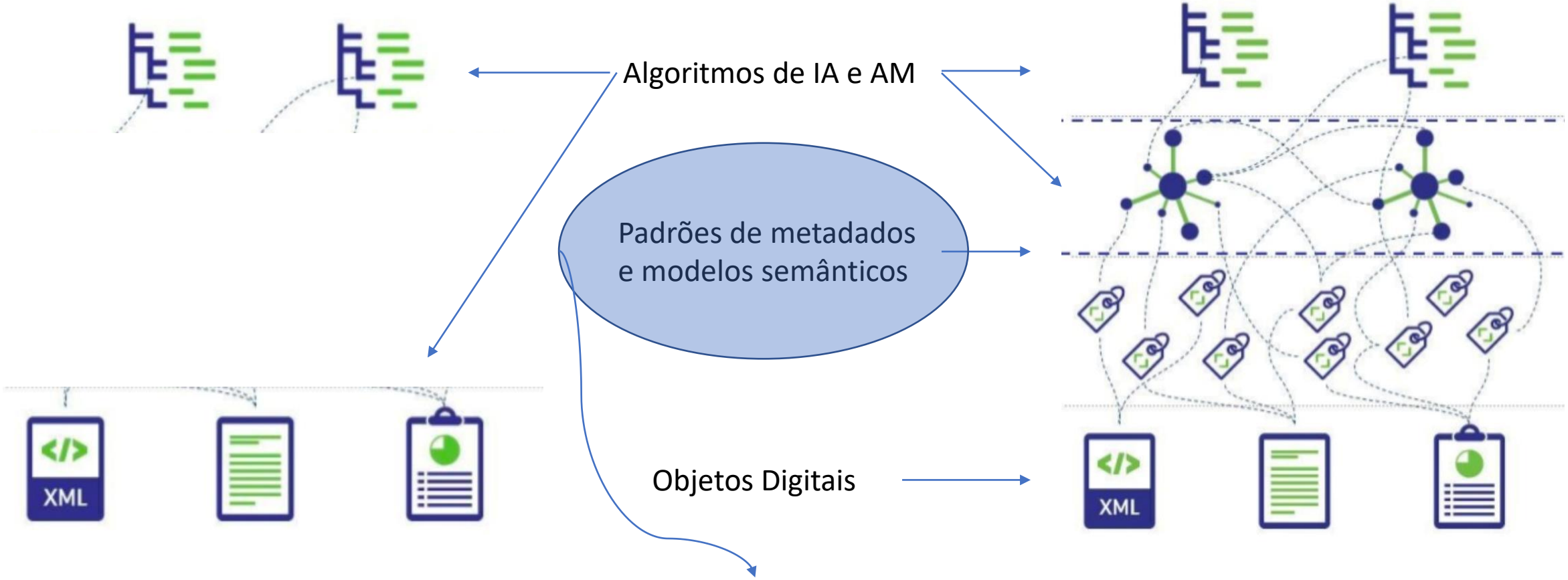




Objetos Digitais

Abordagem **tradicional** da IA

Abordagem **semântica** da IA

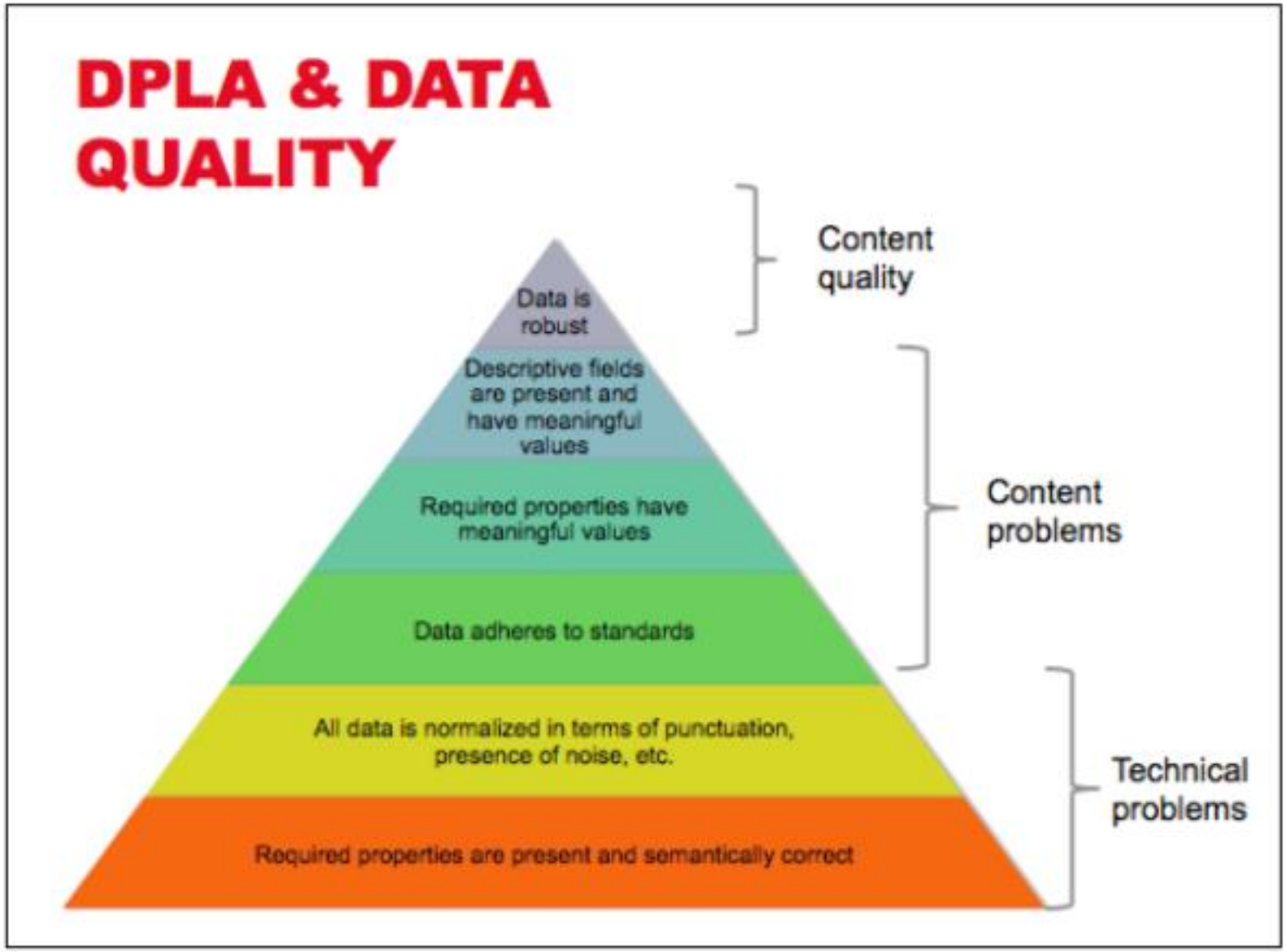


Camada fundamental para melhoria da qualidade e controle dos dados sobre os objetos digitais

E onde entra a questão da **qualidade da informação**? E como isso se relaciona a forma com a qual lidamos com os **objetos digitais**?

A qualidade dos dados em camadas

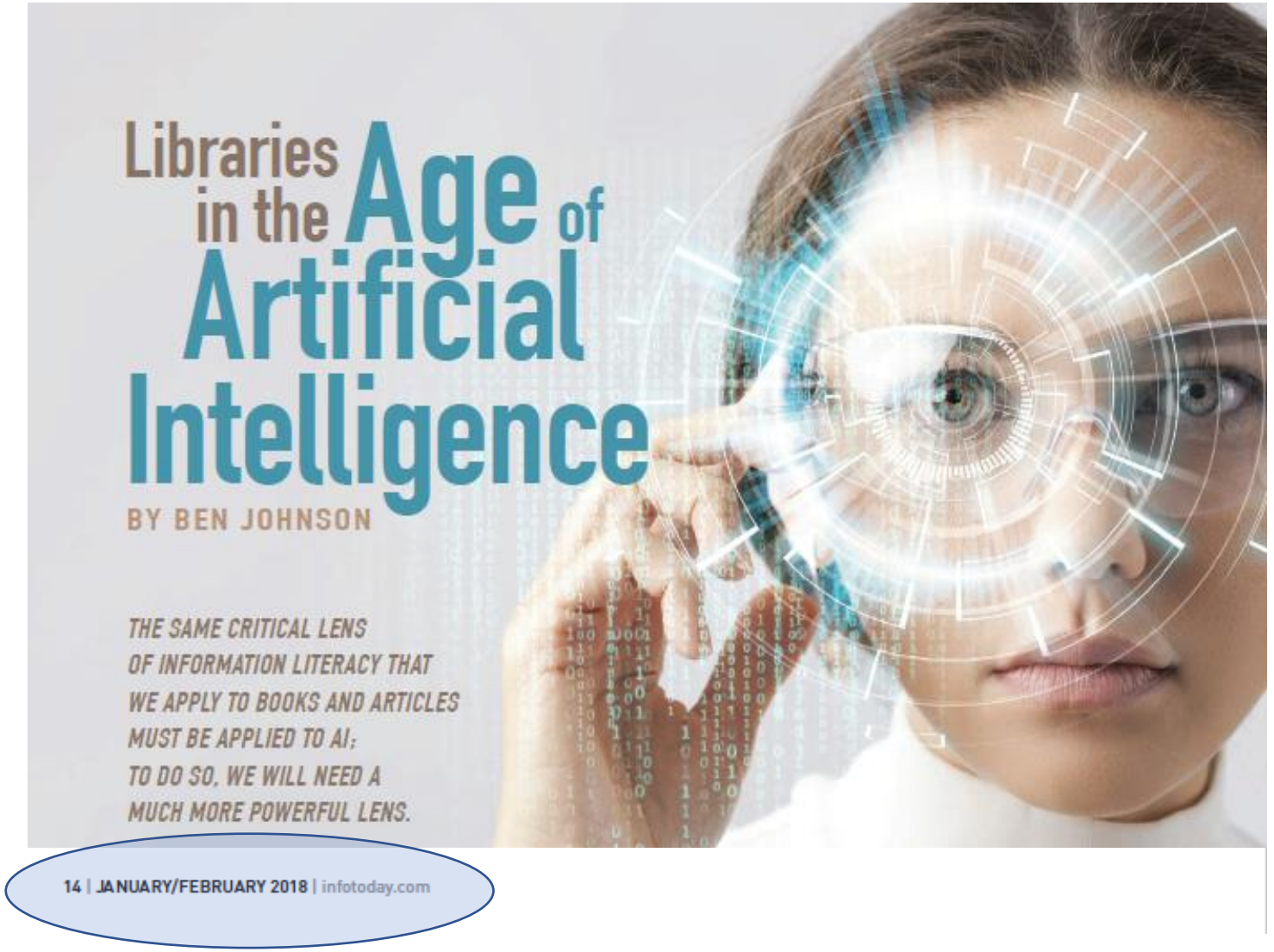
- **2 níveis principais de problemas**:
  - **Técnicos:**
    - falta de dados (campos em branco)
    - Semântica incorreta: datas invertidas, estado no campo cidade, etc...
  - **Conteúdo:**
    - Não adere aos padrões: não usa o mesmo vocabulário controlado
    - Valores com significado: nomes de pessoas, lugares
    - Campos descritivos presentes: todos os campos preenchidos



Fonte: https://pro.dp.la/hubs/documentation

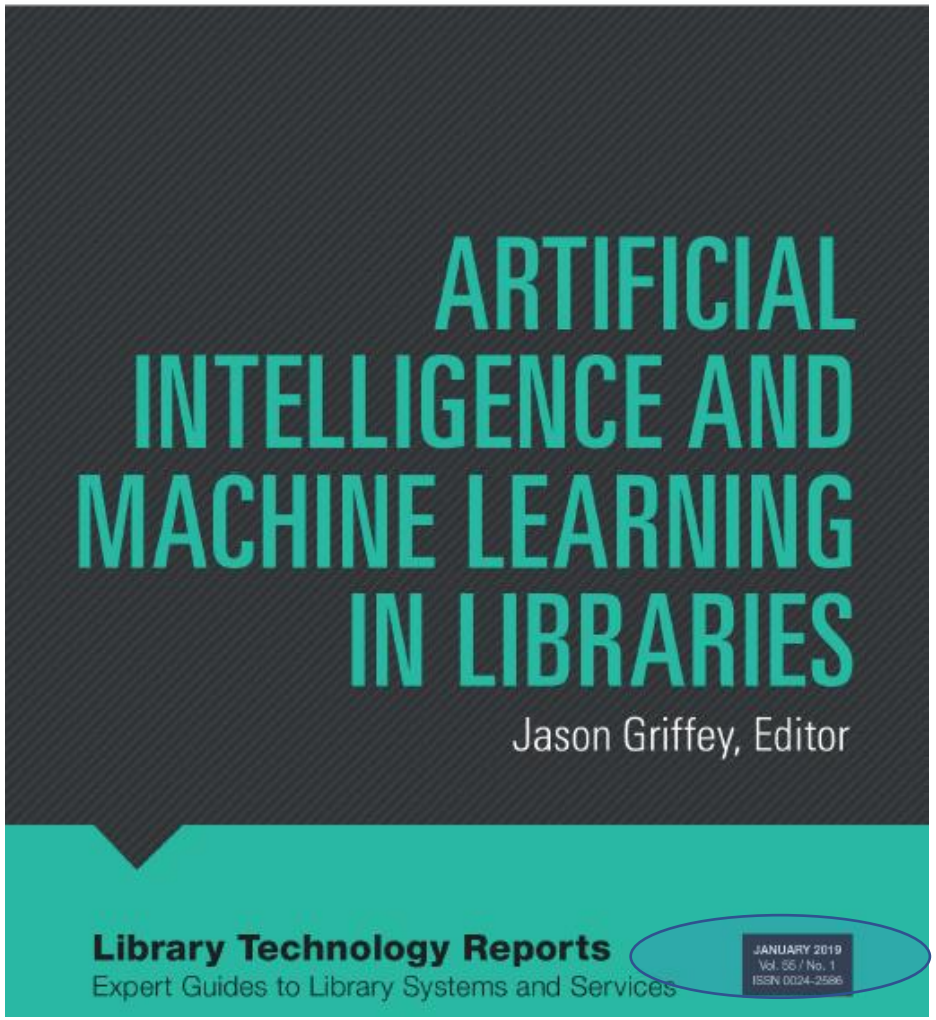
De que forma isso parece afetar o mundo da Biblioteconomia e da Ciência da Informação?

Aprendizagem de máquina e inteligência artificial aplicadas às bibliotecas: um tema emergente



Revista InfoToday
2018

Aprendizagem de máquina e inteligência artificial aplicadas às bibliotecas: um tema emergente



American Library Association
2019
Caderno especial de tecnologia para as bibliotecas.

Aprendizagem de máquina e inteligência artificial aplicadas às bibliotecas: um tema emergente

from the PRESIDENT

Exploring AI

How libraries are starting to apply artificial intelligence in their work

Loida Garcia-Febo

have recently started to hear more phrases such as, "I don't have to visit a library; I just ask Alexa [or Siri or Google Assistant] and it tells me everything I need to know. I speak to it all day."

The impact of even this early wave of artificial intelligence (AI)—including voice assistants and machine learning (ML)—is still uncertain in many fields, but it is time to include AI on our professional agenda and in our national conversation. In talking with librarians working in this area, it's clear that while AI can be useful, it also raises familiar concerns about privacy, intellectual freedom, authority, and access. And there are diversity considerations, as well, including access for people with different linguistic styles or abilities.

Fortunately, librarians are looking at AI from several perspectives. Some are using it to teach information literacy and critical-thinking skills to help patrons formulate questions for these devices and learn how to evaluate responses. University of Rhode Island, for example, is hosting its collaborative efforts around AI in the library.

Cambridge (Mass.) Public Library (CPL) partnered with MIT Libraries and Harvard metaLAB to host the installation "Laughing Room," in which participants enter an artificially intelligent room that plays a laugh track whenever something is said that the room's algorithm deems funny. CPL Director Maria McCauley says this helped people to consider the impact of surveillance and AI on their lives. To further engage library users with big issues in science and technology shaping our society, the library will host a public dialogue about humor, culture, and AI with Harvard Law School's Cyberlaw Clinic this spring.

At MIT, Chris Bourg, director of libraries, is focusing on building a technical infrastructure so its collections are accessible by APIs and therefore can be used by machine-learning algorithms. MIT Libraries is working with AI/ML researchers at the university to analyze various library tasks and workflows that might be enhanced by AI. As Bourg says, it is important for academic libraries to make their collections accessible to AI tools like Alexa so that when someone asks a voice assistant for information, reputable scholarly literature is available. To make this successful, libraries will have to work to ensure scholarly information is openly accessible, not locked behind paywalls.

All this may be a lot of new information to process. But Catherine Nicole Coleman, digital research architect at Stanford Libraries in Palo Alto, California, has a good approach: Last year, Coleman conducted "Library AI Conversations" to help library workers familiarize themselves with the latest research and issues. She also worked mostly with bibliographers, archivists, and catalogers to explore the possibilities of AI for metadata and collection development. Additionally, they are collaborating with computer science faculty and faculty in the humanities and social sciences to explore human–machine collaboration, interaction, and interface (bit.ly/stanfordAI).

At ALA, we have resources to help library workers understand AI, these new devices, and the role of libraries. The Center for the Future of Libraries has written about voice-control devices (bit.ly/CFLvoice); the January issue of *Library Technology Reports* (bit.ly/LibTechAI) explores AI and ML; and many of our conferences—including the Library and Information Technology Association's forum and the Association of College and Research Libraries national conference—include sessions on AI.

My fellow library workers, the future of libraries will continue to be about the communities we serve. Librarians and library professionals will need to be at the forefront to support communities as these technologies transform our world. Let's continue the conversation and learn together. AL

Library professionals will need to continue to be at the forefront to support communities as emerging technologies transform our world.

LOIDA GARCIA-FEBO is an international library consultant.

American Library Magazine
2019
Editorial especial

Aprendizagem de máquina e inteligência artificial aplicadas às bibliotecas: um tema emergente

PERSPECTIVES

AI and Machine Learning

The challenges of artificial intelligence in libraries

dispatches

by Jason Griffey

Artificial intelligence (AI) and machine learning are everywhere, giving driving directions and identifying objects in photographs. They are so engrained in our technology that often people don't realize what they're experiencing is a machine learning system. Everyone with a smartphone has an AI system that uses machine learning.

For example, Google's Android operating system records, measures, and collects information and sends that data to servers. These servers use billions of data points collected from tens of millions of users as input for their machine learning systems. When you ask an Android phone to show you photos from the beach, a complex set of data moves back and forth between your phone and Google's servers, comparing your photos to the billions in its data set. The search results include pictures that the AI decided were most likely to be related.

Since Google has billions of photos to assess and millions of people helping it train its AI, the decisions that the AI makes are generally good. But AI is only as effective as its training data and the weighting given to the system as it learns to make decisions. If the data is biased, contains bad examples of decision making, or is simply collected in a way that doesn't represent the full problem set, the system will produce broken, unrepresentative, or bad outputs.

Apple, on the other hand, has chosen to model its AI and machine learning by analyzing and weighting your data locally on the iOS devices themselves. Your devices use the same machine learning algorithms to include your photos in Apple's preset weights, but they aren't pushed to Apple's servers. Because each data set is analyzed locally, there is no shared decision making as there is with Google. Each device must do heavy lifting itself, rather than rely on remote servers for the bulk of the work.

For data privacy and security concerns, localized machine learning has an advantage. If you don't need to send photos and data back and forth from server to client, and if providers don't need to store and host data, the data's vulnerability to attack is greatly reduced.

The examples above focus on object and image recognition in photos by a machine learning system. This is only one of dozens of uses for AI and machine learning systems.

It's also easy to see how an AI system is useful for libraries and archives in creating metadata from digitization projects. AI systems can be trained to recognize locations from a single photograph—including where the photographer was standing—based on angle, geography, and other factors. These systems can be enormously useful in making the processing and cataloging of archives and collections more discoverable.

As more libraries and library vendors move into developing AI and machine learning systems, we should be sensitive to the privacy implications of collecting and storing the data that's needed to train and update those systems. As with existing systems where we outsource data collection and retention to vendors, libraries need to be aware of the mechanisms by which that data is protected and how it may be shared with others through training sets. Where libraries can provide local analysis in the style of Apple and iOS, they should.

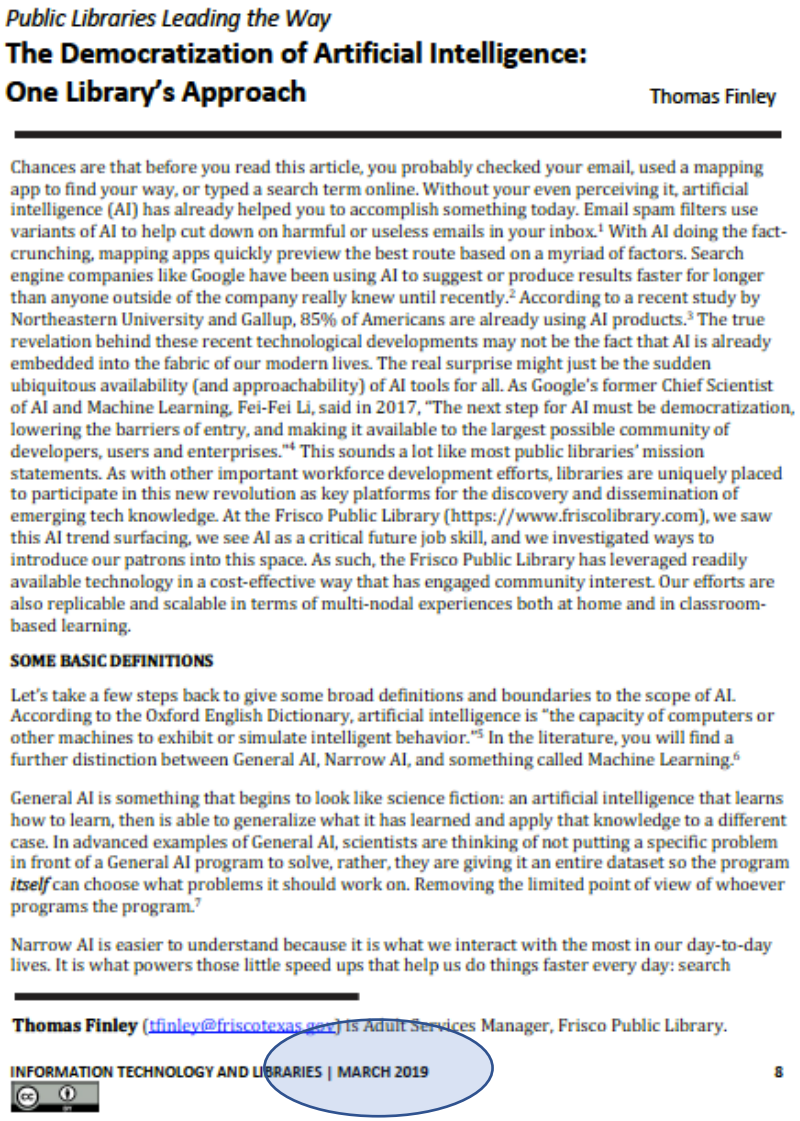
The opportunities associated with new machine learning systems to reform large portions of library activities will be rich and varied. While it will be some time before AI will conduct full conversations or reference interviews with students and patrons, the use of AI as an increasingly powerful lever inside other systems will progress quickly over the next three to five years. Libraries can watch these systems as they develop, work with vendors, and create their own services and systems so that our values and ethics are baked into the technology at the outset.

For data privacy and security concerns, localized machine learning has an advantage.

JASON GRIFFEY is a librarian and technologist and the founder and principal at Evenly Distributed. Adapted from "Artificial Intelligence and Machine Learning in Libraries," *Library Technology Reports* vol. 55, no. 1 (Jan. 2019).

American Library Magazine
2019
Análise de tendências

Aprendizagem de máquina e inteligência artificial aplicadas às bibliotecas: um tema emergente



Public Libraries Leading the Way

The Democratization of Artificial Intelligence: One Library's Approach

Thomas Finley

Chances are that before you read this article, you probably checked your email, used a mapping app to find your way, or typed a search term online. Without your even perceiving it, artificial intelligence (AI) has already helped you to accomplish something today. Email spam filters use variants of AI to help cut down on harmful or useless emails in your inbox.[1] With AI doing the fact-crunching, mapping apps quickly preview the best route based on a myriad of factors. Search engine companies like Google have been using AI to suggest or produce results faster for longer than anyone outside of the company really knew until recently.[2] According to a recent study by Northeastern University and Gallup, 85% of Americans are already using AI products.[3] The true revelation behind these recent technological developments may not be the fact that AI is already embedded into the fabric of our modern lives. The real surprise might just be the sudden ubiquitous availability (and approachability) of AI tools for all. As Google's former Chief Scientist of AI and Machine Learning, Fei-Fei Li, said in 2017, "The next step for AI must be democratization, lowering the barriers of entry, and making it available to the largest possible community of developers, users and enterprises."[4] This sounds a lot like most public libraries' mission statements. As with other important workforce development efforts, libraries are uniquely placed to participate in this new revolution as key platforms for the discovery and dissemination of emerging tech knowledge. At the Frisco Public Library (https://www.friscolibrary.com), we saw this AI trend surfacing, we see AI as a critical future job skill, and we investigated ways to introduce our patrons into this space. As such, the Frisco Public Library has leveraged readily available technology in a cost-effective way that has engaged community interest. Our efforts are also replicable and scalable in terms of multi-nodal experiences both at home and in classroom-based learning.

SOME BASIC DEFINITIONS

Let's take a few steps back to give some broad definitions and boundaries to the scope of AI. According to the Oxford English Dictionary, artificial intelligence is "the capacity of computers or other machines to exhibit or simulate intelligent behavior."[5] In the literature, you will find a further distinction between General AI, Narrow AI, and something called Machine Learning.[6]

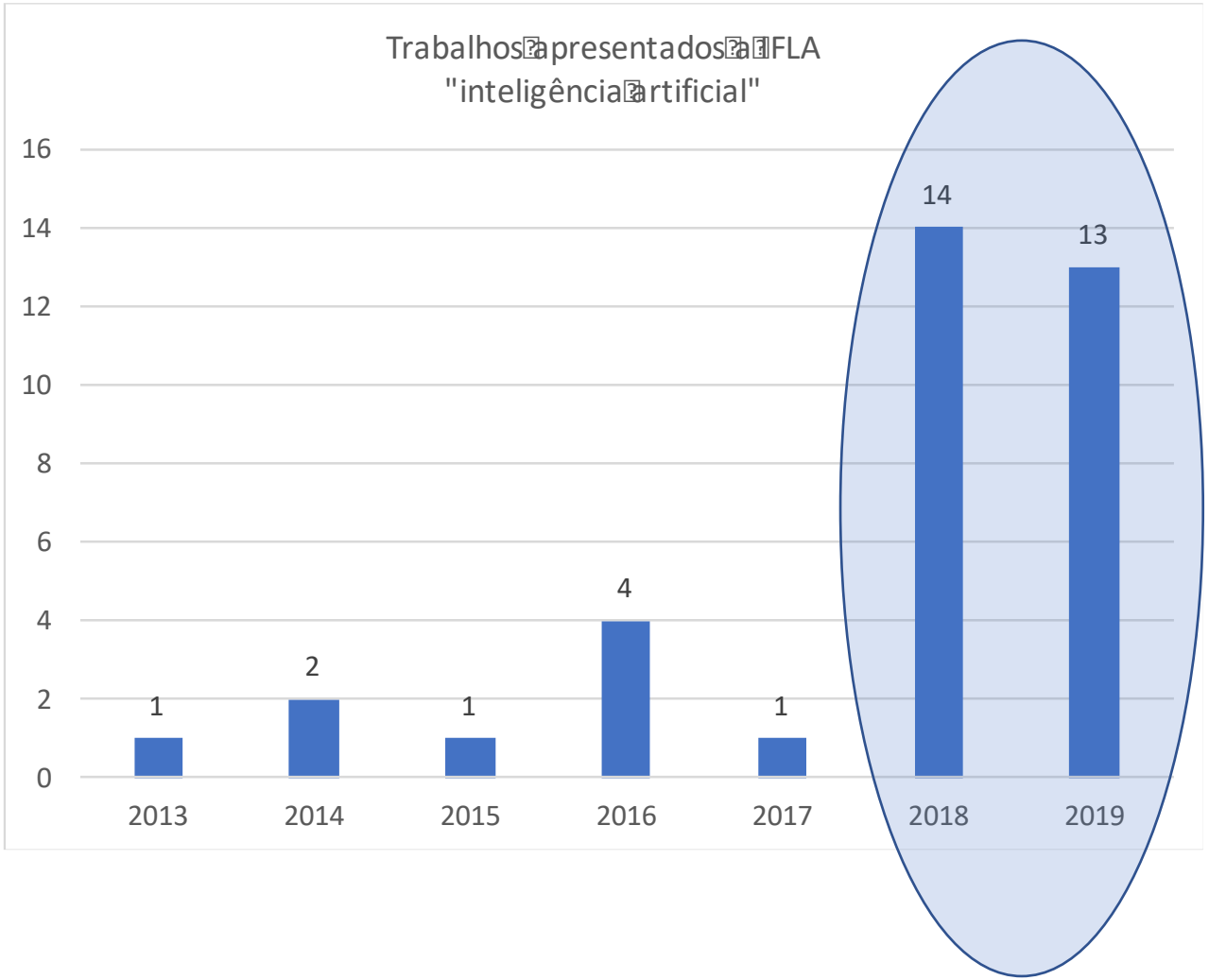
General AI is something that begins to look like science fiction: an artificial intelligence that learns how to learn, then is able to generalize what it has learned and apply that knowledge to a different case. In advanced examples of General AI, scientists are thinking of not putting a specific problem in front of a General AI program to solve, rather, they are giving it an entire dataset so the program *itself* can choose what problems it should work on. Removing the limited point of view of whoever programs the program.[7]

Narrow AI is easier to understand because it is what we interact with the most in our day-to-day lives. It is what powers those little speed ups that help us do things faster every day: search

Thomas Finley (tfinley@friscotexas.gov) is Adult Services Manager, Frisco Public Library.

Information Technology and Libraries
2019
Revista científica

Aprendizagem de máquina e inteligência artificial aplicadas às bibliotecas: um tema emergente



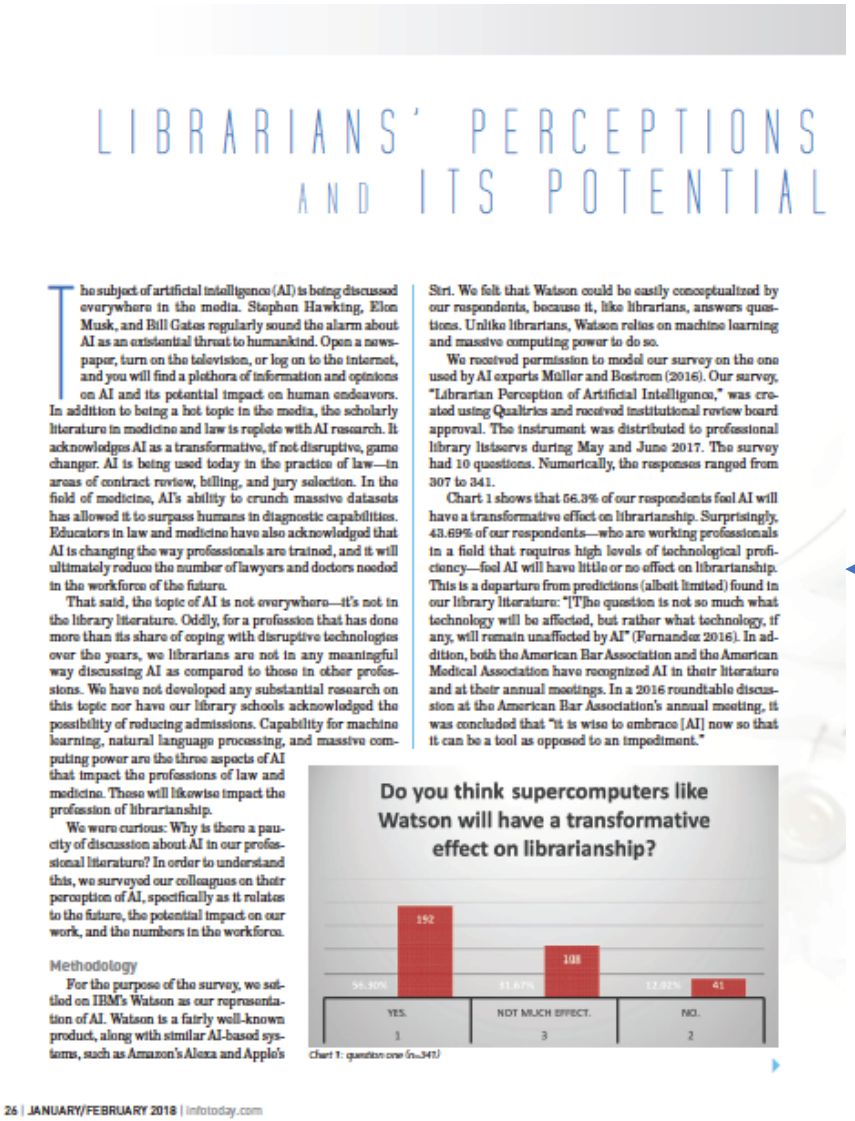
Trabalhos apresentados nos congressos da IFLA
Descritor: ”inteligência artificial”

Há um crescente e importante interesse nos temas aprendizagem de máquina e inteligência artificial no campo das bibliotecas nos últimos anos.

O que isso significa em termos de oportunidades de novos serviços, melhoria na qualidade das instituições e necessidade de qualificação profissional?

O que os bibliotecários estão pensando sobre isso?

A percepção dos bibliotecários sobre a aprendizagem de máquina e IA



LIBRARIANS' PERCEPTIONS AND ITS POTENTIAL

The subject of artificial intelligence (AI) is being discussed everywhere in the media. Stephen Hawking, Elon Musk, and Bill Gates regularly sound the alarm about AI as an existential threat to humankind. Open a newspaper, turn on the television, or log on to the internet, and you will find a plethora of information and opinions on AI and its potential impact on human endeavors. In addition to being a hot topic in the media, the scholarly literature in medicine and law is replete with AI research. It acknowledges AI as a transformative, if not disruptive, game changer. AI is being used today in the practice of law—in areas of contract review, billing, and jury selection. In the field of medicine, AI's ability to crunch massive datasets has allowed it to surpass humans in diagnostic capabilities. Educators in law and medicine have also acknowledged that AI is changing the way professionals are trained, and it will ultimately reduce the number of lawyers and doctors needed in the workforce of the future.

That said, the topic of AI is not everywhere—it's not in the library literature. Oddly, for a profession that has done more than its share of coping with disruptive technologies over the years, we librarians are not in any meaningful way discussing AI as compared to those in other professions. We have not developed any substantial research on this topic nor have our library schools acknowledged the possibility of reducing admissions. Capability for machine learning, natural language processing, and massive computing power are the three aspects of AI that impact the professions of law and medicine. These will likewise impact the profession of librarianship.

We were curious: Why is there a paucity of discussion about AI in our professional literature? In order to understand this, we surveyed our colleagues on their perception of AI, specifically as it relates to the future, the potential impact on our work, and the numbers in the workforce.

Methodology

For the purpose of the survey, we settled on IBM's Watson as our representation of AI. Watson is a fairly well-known product, along with similar AI-based systems, such as Amazon's Alexa and Apple's Siri. We felt that Watson could be easily conceptualized by our respondents, because it, like librarians, answers questions. Unlike librarians, Watson relies on machine learning and massive computing power to do so.

We received permission to model our survey on the one used by AI experts Müller and Bostrom (2016). Our survey, "Librarian Perception of Artificial Intelligence," was created using Qualtrics and received institutional review board approval. The instrument was distributed to professional library listservs during May and June 2017. The survey had 10 questions. Numerically, the responses ranged from 307 to 341.

Chart 1 shows that 56.3% of our respondents feel AI will have a transformative effect on librarianship. Surprisingly, 43.69% of our respondents—who are working professionals in a field that requires high levels of technological proficiency—feel AI will have little or no effect on librarianship. This is a departure from predictions (albeit limited) found in our library literature: "[T]he question is not so much what technology will be affected, but rather what technology, if any, will remain unaffected by AI" (Fernandez 2016). In addition, both the American Bar Association and the American Medical Association have recognized AI in their literature and at their annual meetings. In a 2016 roundtable discussion at the American Bar Association's annual meeting, it was concluded that "it is wise to embrace [AI] now so that it can be a tool as opposed to an impediment."

Chart 1: question one (n=341)

Pesquisa realizada durante os meses de maio e junho de 2017 via listas de emails de profissionais bibliotecários nos EUA.

Publicada na revista InfoToday em fevereiro de 2018

A percepção dos bibliotecários sobre a aprendizagem de máquina e IA

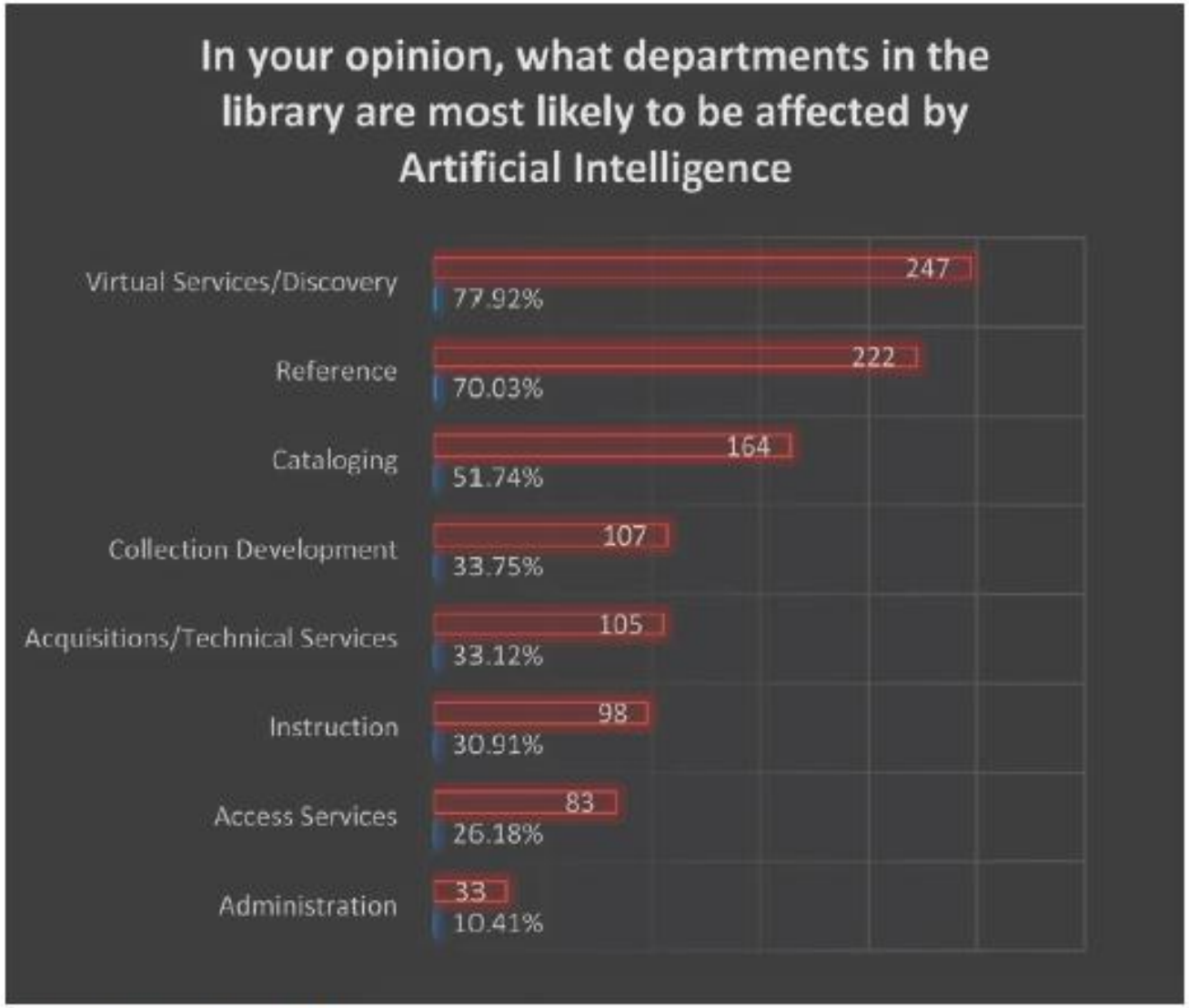


Chart 2: question two (n=317)

A percepção dos bibliotecários sobre a aprendizagem de máquina e IA

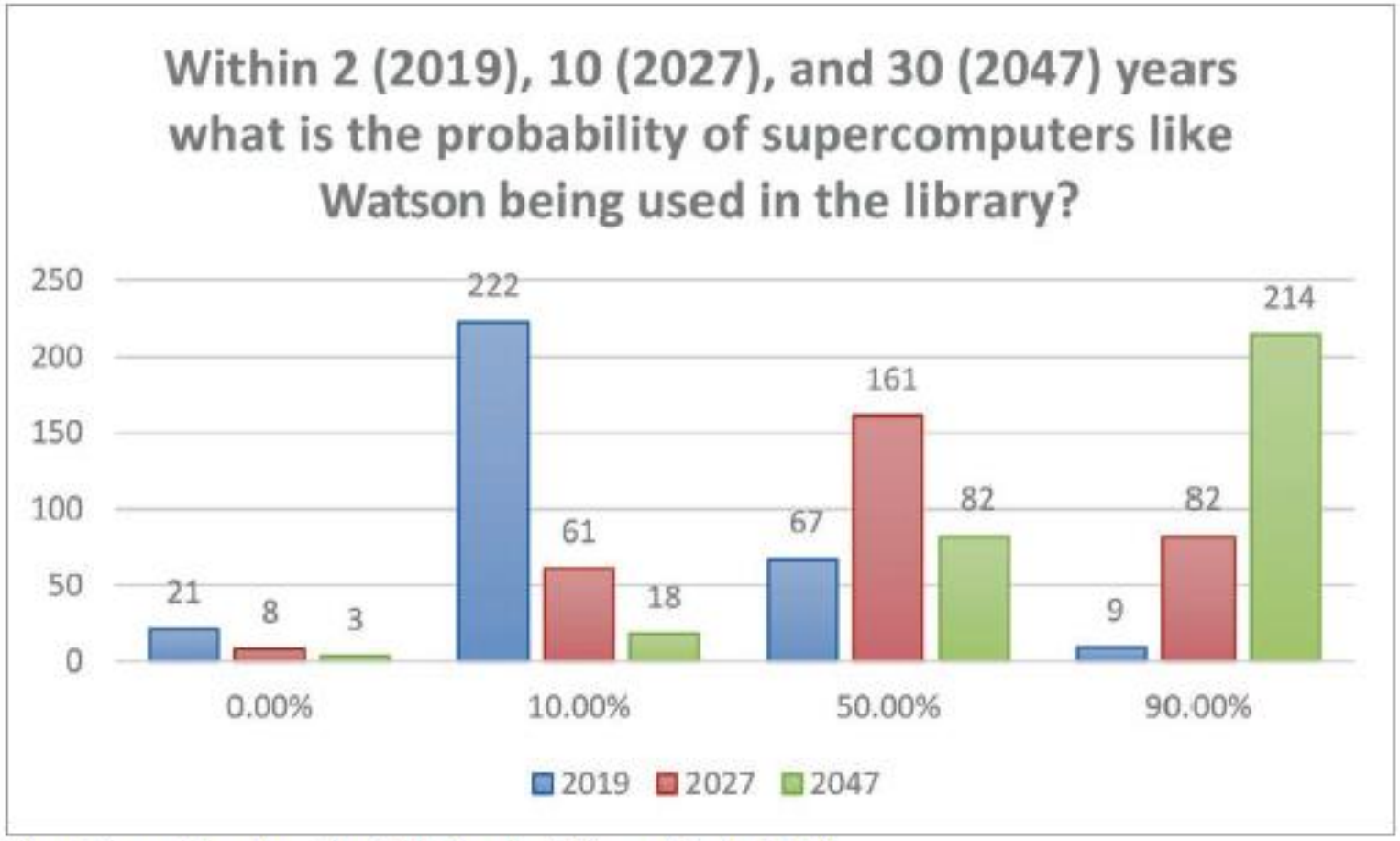
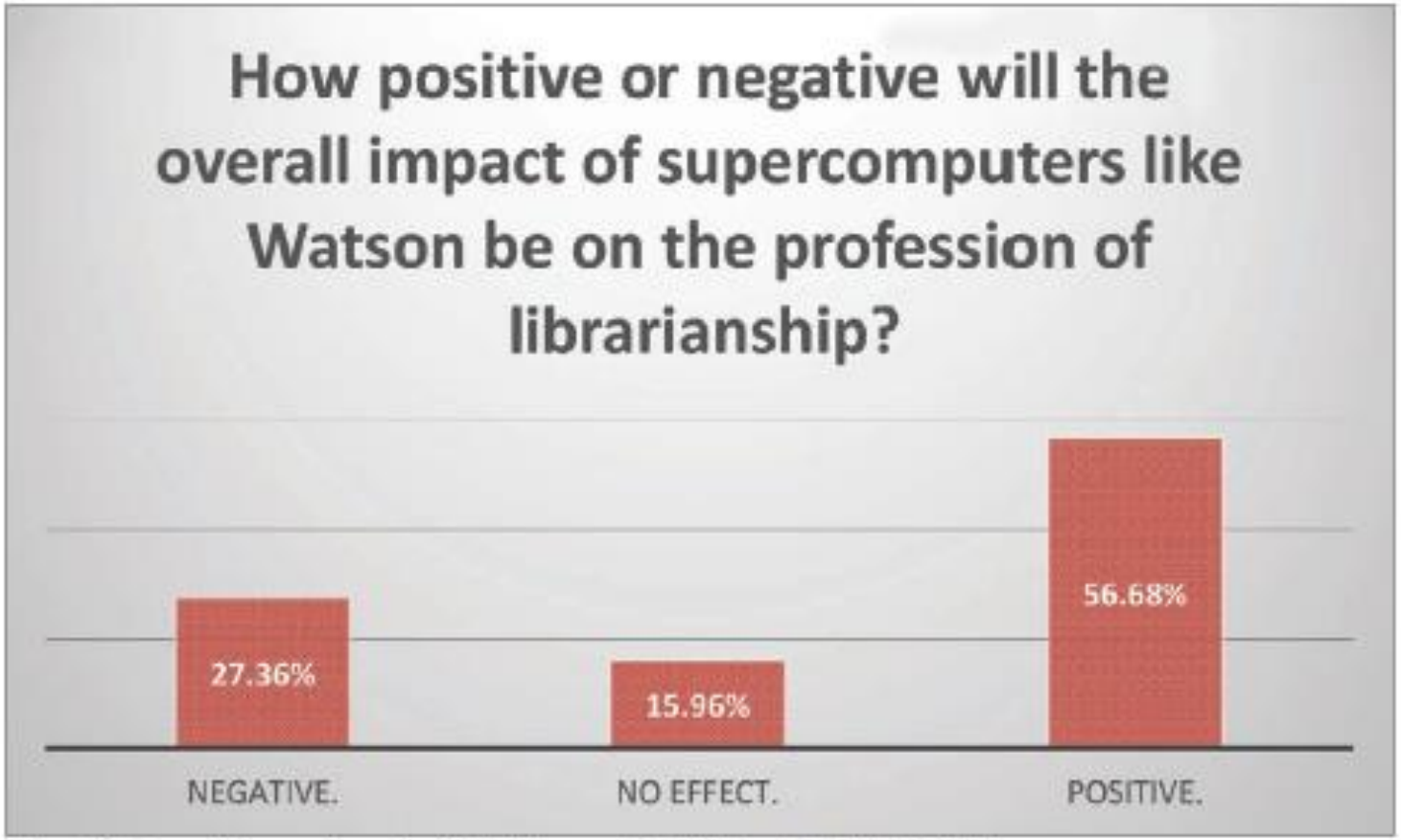


Chart 3: questions three (n=319), four (n=318), and five (n=317)

A percepção dos bibliotecários sobre a aprendizagem de máquina e IA



Charts 4, 5, and 6: questions six (n=315), seven (n=315), and eight (n=307)

Potencial de aplicação da IA em Bibliotecas

Article:
Cox, A.M. orcid.org/0000-0002-2587-245X, Pinfield, S. and Rutter, S. (2018) The intelligent library: Thought leaders' views on the likely impact of artificial intelligence on academic libraries. Library Hi Tech. ISSN 0737-8831

https://doi.org/10.1108/LHT-08-2018-0105

Potencial de aplicação da IA em Bibliotecas

Library roles in AI	Competencies that need to be extended	Alternative providers of service/ function
Procuring content for AI to work from (including both licensing and through open access)	Procurement and licensing of e-content	Publishers and other new intermediaries
Providing content	Digitisation, metadata provision	Publishers and other new intermediaries
Data quality control	Collection management	
Procuring AI tools	Procurement and licensing of software and services	IT departments, academic departments
Data curation (e.g. of derived data)	Collection management, digital preservation	Publishers and other new intermediaries
Designing data infrastructure to enable AI	Design of information discovery infrastructure	IT departments
Explaining how to navigate the new information environment	Understanding of the scholarly publishing landscape, including data creation processes	
Teaching critical data literacy: understanding how to evaluate AI tools and their results, and also protect one's own privacy	Information literacy	IT departments
Designing AI tools	N/A – outside normal library professional work	Academic departments, Publishers
Data analysis and writing algorithms	N/A	IT departments, academic departments

Table 1 Potential library roles in AI

Então, a IA e a AM pode nos ajudar a oferecer melhores serviços e com mais qualidade.

Mas, como? Quais **áreas de interesse** e investimento para **pesquisa e desenvolvimento**?

europeana network association

Europeana Network Association Task Forces

Interim Analysis of EuropeanaTech AI in Relation to GLAMs Survey

Relatório publicado em Setembro/2020, a Europeana analisa como os museus, bibliotecas, arquivos e galerias da Europa estão desenvolvendo projetos de IA

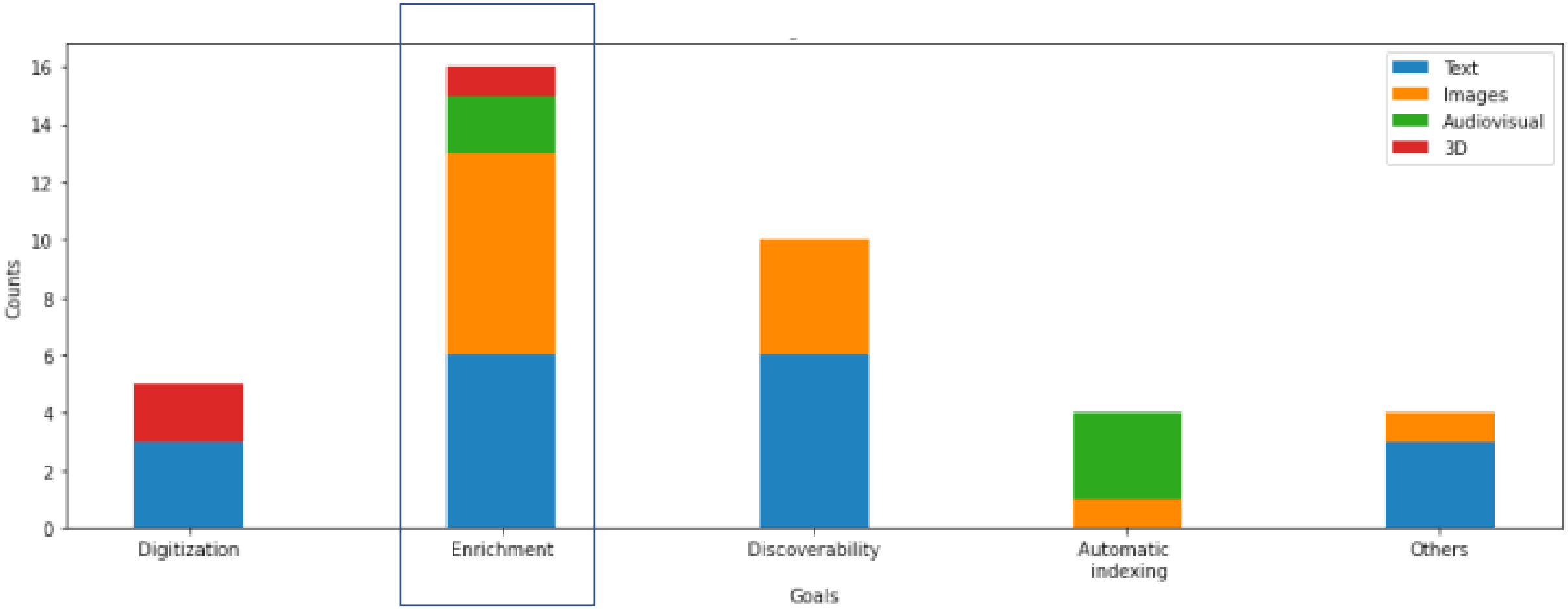
https://pro.europeana.eu/files/Europeana_Professional/Europeana_Network/Europeana_Network_Task_Forces/Final_reports/Final_Interim_Report_AI_in_GLAMs_TF.pdf

Interesse em uso da IA

	Not interested	Somewhat interested	Very interested	applied this, not useful	applied this, useful
Knowledge Extraction	5.08% 3	16.95% 10	59.32% 35	0.00% 0	18.64% 11
(Meta) Data Quality	6.67% 4	5.00% 3	60.00% 36	1.67% 1	26.67% 16
Audience Analysis	18.33% 11	36.67% 22	36.67% 22	1.67% 1	6.67% 4
Crowdsourcing and Human in the Loop	16.95% 10	28.81% 17	44.07% 26	0.00% 0	10.17% 6
Visualizing GLAM collections	13.33% 8	20.00% 12	53.33% 32	0.00% 0	13.33% 8
Collections Management	8.47% 5	10.17% 6	61.02% 36	1.69% 1	18.64% 11
Discovery and Search	8.33% 5	16.67% 10	55.00% 33	3.33% 2	16.67% 10
Creative or Engagement projects and initiatives	6.95% 10	27.12% 16	45.76% 27	1.69% 1	8.47% 5

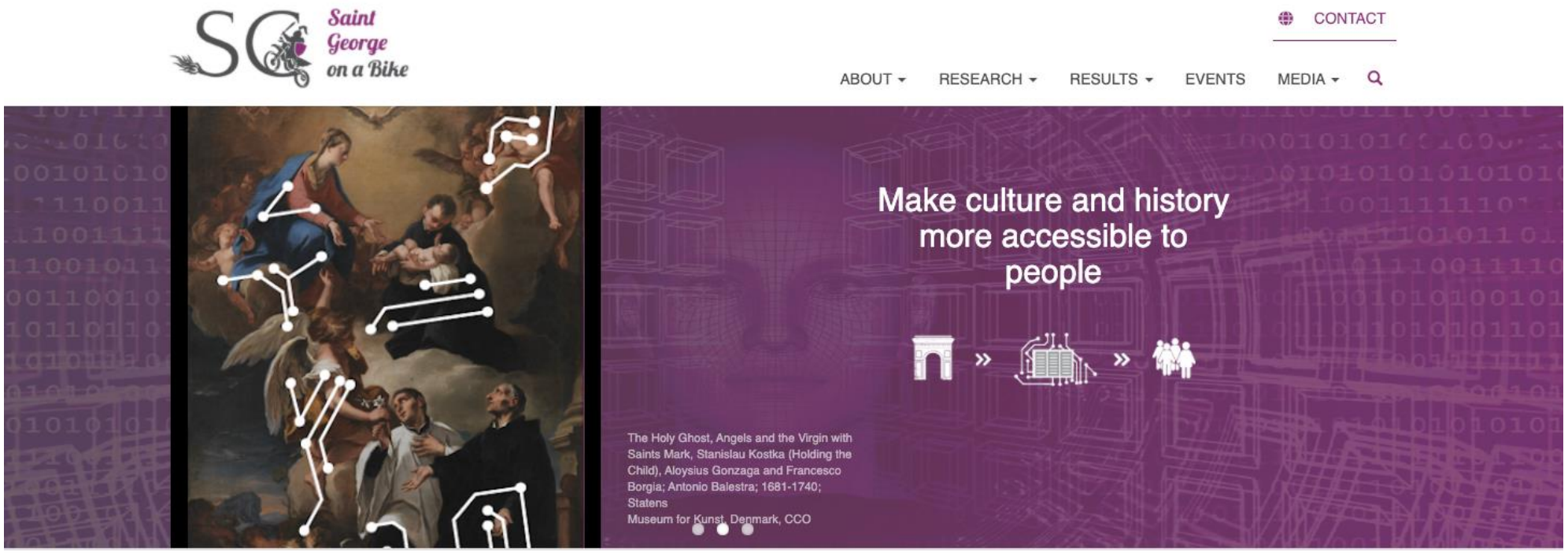
https://pro.europeana.eu/files/Europeana_Professional/Europeana_Network/Europeana_Network_Task_Forces/Final_reports/Final_Interim_Report_AI_in_GLAMs_TF.pdf

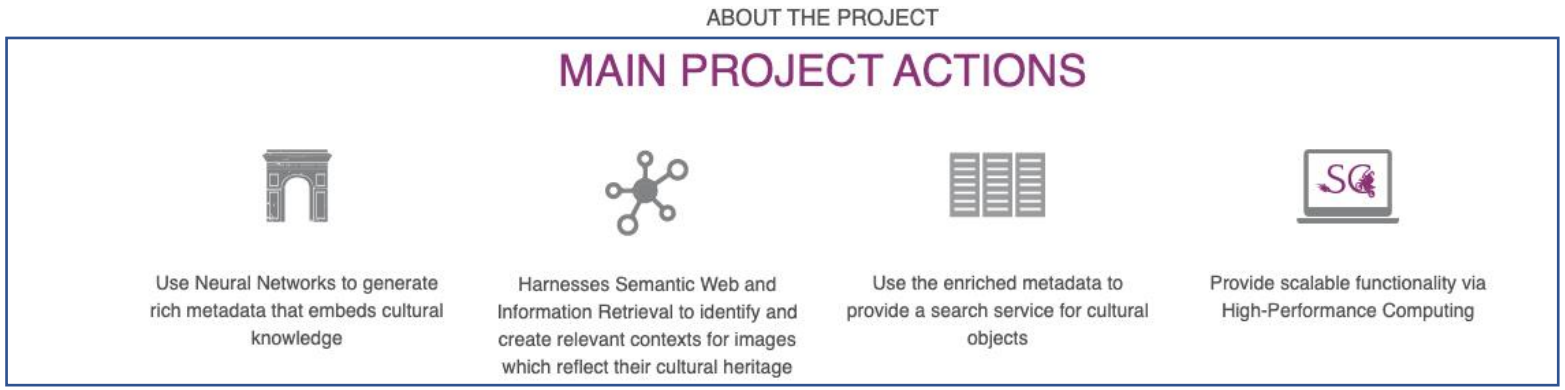
Projetos em execução



https://pro.europeana.eu/files/Europeana_Professional/Europeana_Network/Europeana_Network_Task_Forces/Final_reports/Final_Interim_Report_AI_in_GLAMs_TF.pdf

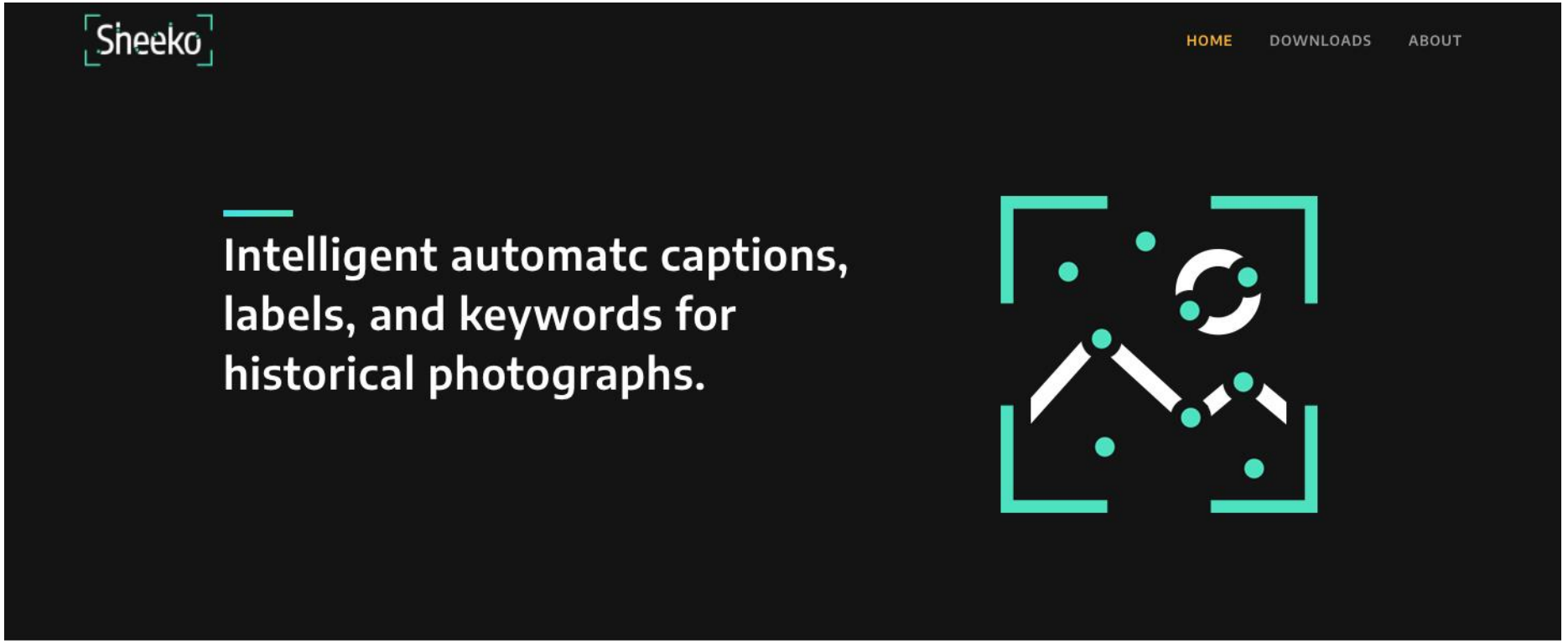
Projetos em execução

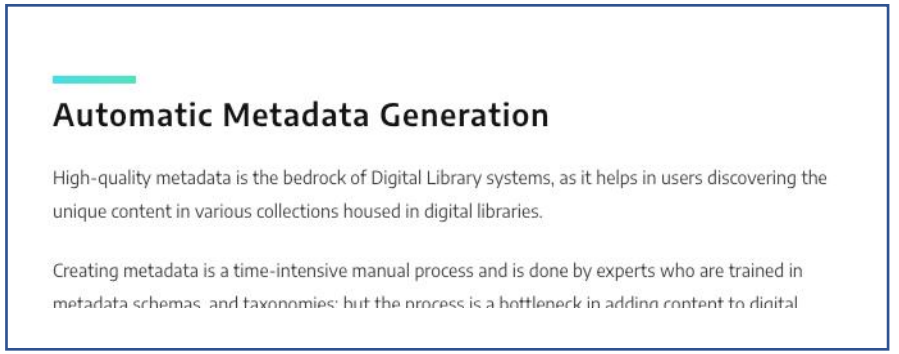




https://saintgeorgeonabike.eu/

Projetos em execução





https://sheeko.org/

Projetos em execução

Project Team

University of Nebraska-Lincoln

Elizabeth Lorang, co-director
Leen-Kiat Soh, co-director
Yi Liu, research assistant
Chulwoo (Mike) Pack, research assistant

University of Virginia

John O'Brien
Worthy Martin

Past Contributors

Andrew Barrow (2017)
Sarah Berkowitz (2019-2020)
Maanas Varma Datla (2014-2015)
Kyle Janvrin (2019)
Spencer Kulwicki (2014-2015)
Joseph Lunde (2013-2014)
Andrew Michael (2018)
Delaram Rahimighazikalayeh (2017-2019)
Grace Thomas (2013-2015)

Image Analysis for Archival Discovery (Aida)

The Aida research team explores applications of image analysis and machine learning in digital libraries of historic materials. We're especially interested in what we might learn from the millions of digital images that librarians, archivists, and others are creating as they digitize the cultural record. We're intrigued by the questions that machine learning approaches might help to surface in these collections and about our professional practices—and also by the questions our collections and professional practices might help to surface about machine learning.

Our current and recent efforts include "Digital Libraries, Intelligent Data Analytics, and Augmented Description: A Demonstration Project" (Library of Congress), "Extending Image Analysis for Archival Discovery" (IMLS, LG-71-16-0152-16), and "Oceanic Exchanges: Tracing Global Information Networks In Historical Newspaper Repositories, 1840-1914" (subaward on IMLS, LG-00-17-0104-17).

Code & Data

Code developed for our project is available via our GitHub organization page. See also the Exploring-ML-with-Project-Aida repository distributed by the Library of Congress.

Data generated for our project are made available through appropriate data repositories designed for long-term storage, preservation, and access. See our project page on the Open Science Framework: https://osf.io/xn7tv/

Documents, Publications, Presentations

- "Digital Libraries, Intelligent Data Analytics, and Augmented Description: A Demonstration Project," final report delivered to the Library of Congress, 10 January 2020, rev. 15 June 2020
  - Final Presentation to the Library of Congress on Digital Libraries, Intelligent Data Analytics, and Augmented Description (presentation slides)
  - Virtual Wrap-Up Presentation: Digital Libraries, Intelligent Data Analytics, and Augmented Description (presentation slides)

https://projectaida.org/

Projetos em execução

1-10-2020

Digital Libraries, Intelligent Data Analytics, and Augmented Description: A Demonstration Project

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https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1418&context=libraryscience

Projetos em execução

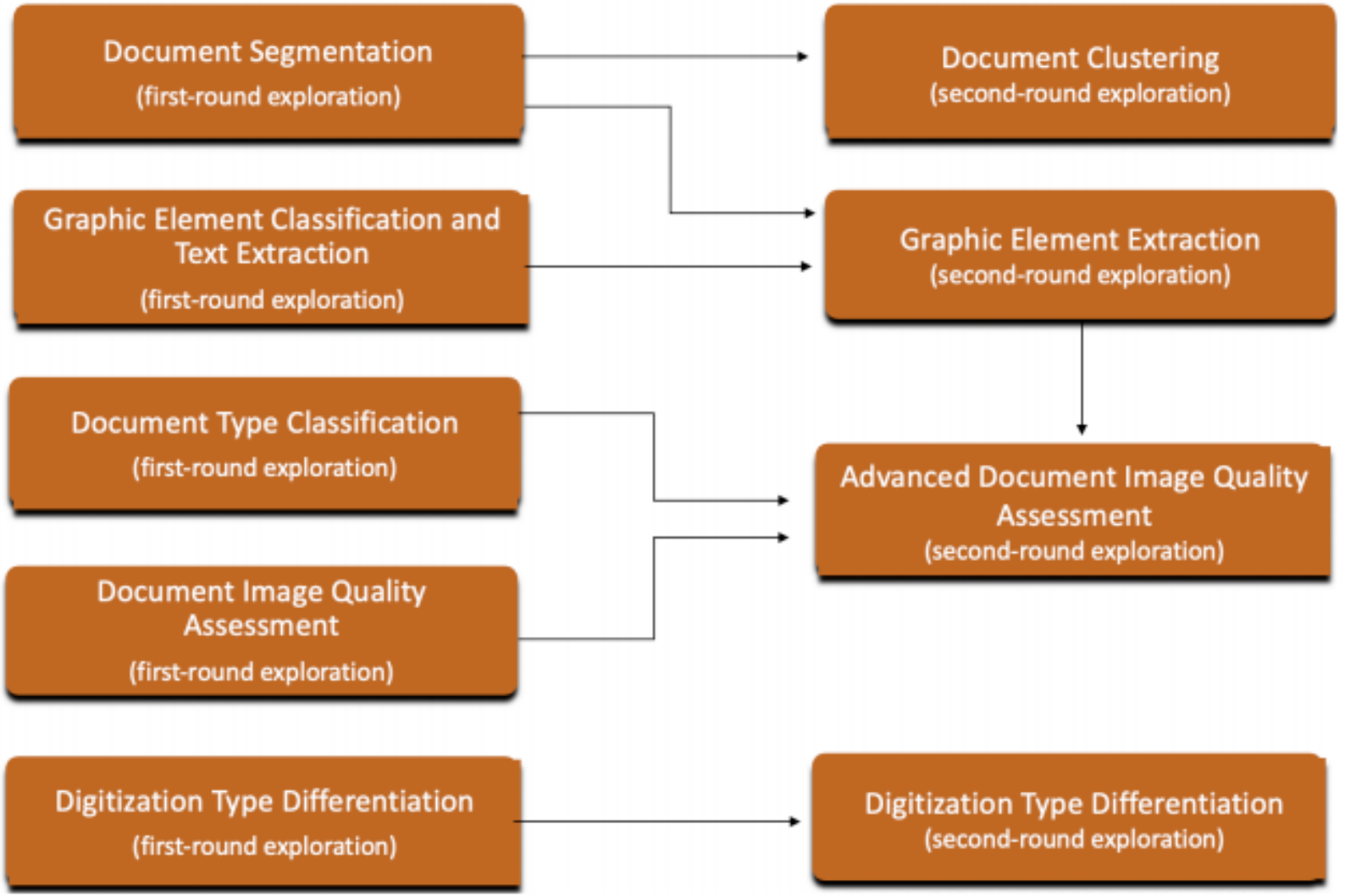

FIGURE 1. VISUAL REPRESENTATION OF THE EXPLORATIONS AND THEIR RELATIONSHIPS TO ONE ANOTHER.

https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1418&context=libraryscience

Projetos em execução

TABLE 1. THE EXPLORATIONS PURSUED AS PART OF THE DEMONSTRATION PROJECT AND THEIR SELECTED POTENTIAL APPLICATIONS.

		Selected Potential Applications					
	Technical Objective	**Metadata generation (structural, descriptive, etc.)**	**Graphical content extraction**	**Influence decision-making for human and/or machine processing**	**Faceted data for end-users/researchers in search/discovery interface**	**Ground truth and benchmark sets for machine learning and image analysis projects competitions**	**Understanding collections**
First-Round Explorations							
Document Segmentation	Find and localize image-like components in newspaper pages	✓	✓		✓	✓	
Graphic Element Classification and Text Extraction	Find and localize graphical content, extract text from this content in newspapers	✓	✓		✓	✓	
Document Type Classification	Classify manuscript collection pages as handwritten, printed, mixed	✓		✓	✓	✓	✓
Document Image Quality Assessment	Analyze quality of manuscript collection page images	✓		✓	✓	✓	✓
Digitization Type Differentiation	Classify manuscript collection images as digitized from original or microform	✓		✓	✓	✓	✓

https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1418&context=libraryscience

Projetos em execução

The Museums + AI Network

Developing the conversation around AI, ethics and museums.

Home About Contact Contributors Events Resources Toolkit

AI: A Museum Planning Toolkit

In 2019 the Museums + AI network engaged with 50 senior museum professionals, and leading academics across the UK and US. Alongside these industry focussed events we were delighted to throw open the doors to the public through a series of events called *Curator: Computer: Creator* that encouraged diverse voices to join the conversation on what AI might look like for museums in the near future in partnership with the Barbican Centre (London), and Cooper Hewitt, Smithsonian Design Museum (NYC).

During these workshops and events, we tested, challenged and refined models of practice, workshop formats, and development tools – this toolkit is one of the results of that work. We hope you will use this toolkit when developing future AI projects in your own museum, and signpost colleagues and peers to it as a free resource to support the development of ethically robust project concepts. The toolkit is designed to start a conversation, it does not provide all the answers, or indeed offer solutions, but instead it serves as a foundation for critical engagement with these technologies and the possibilities and challenges that they offer.

DOWNLOAD THE FREE TO USE TOOLKIT NOW

This toolkit was first published in January 2020

Share this:

https://themuseumsai.network/toolkit/

Reflexão final:

Os algoritmos de aprendizagem de máquina e inteligência artificial podem maximizar o valor social do processamento de objetos digitais a partir do uso de critérios de qualidade dos dados.

O uso de modelos semânticos, padrões de metadados, vocabulários controlados e regras de catalogação são um caminho para se chegar a isso.

A valorização do trabalho e do histórico de catalogação e documentação torna-se um valor social fundamental para melhorar a qualidade da IA.

Reflexão final:

A maior parte dos projetos é muito recente, representando esforços dos **últimos 5 a 3 anos**.

Há ainda **muitas dúvidas sobre como incorporar** essas tecnologias nos produtos e serviços de áreas de interesse ligadas a CI

Além disso, muitos algoritmos de IA **não estão ainda preparados para lidar com material cultural**, objetos históricos, arte, entre outros. Há um **enorme desafio e oportunidades pela frente.**

Obrigado!

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