RM and AI:
Research Progresses and Findings of Renmin Team

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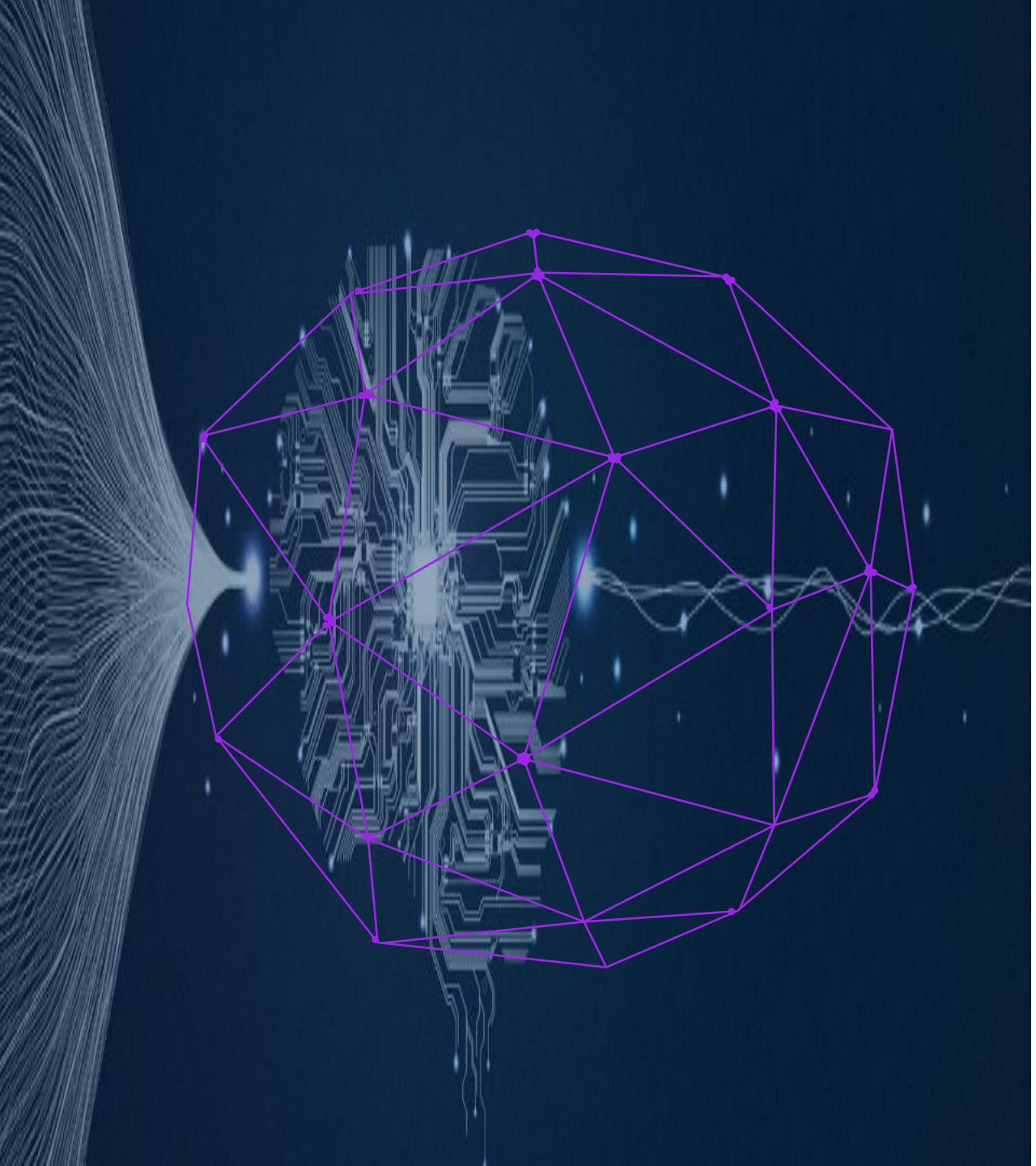
InterPARES Trust AI



Outline

ITrustAI- Renmin Team : RM& AI Study

- We investigate the interplays between RM and AI, i.e., the impact of AI on RM and the RM's impact on AI.
- Currently, our main inquiries include
  - AI & RM competencies——What we can do
  - Role of RM in XAI Development——What we should do

What We Can Do

The AI & RM Competencies：Two Studies

Set up two parallel studies based on Oxford Study's theoretical framework.

Technological Forecasting & Social Change 114 (2017) 254–280

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Technological Forecasting & Social Change

The future of employment: How susceptible are jobs to computerisation?☆

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The AI & RM Competencies : Two Studies

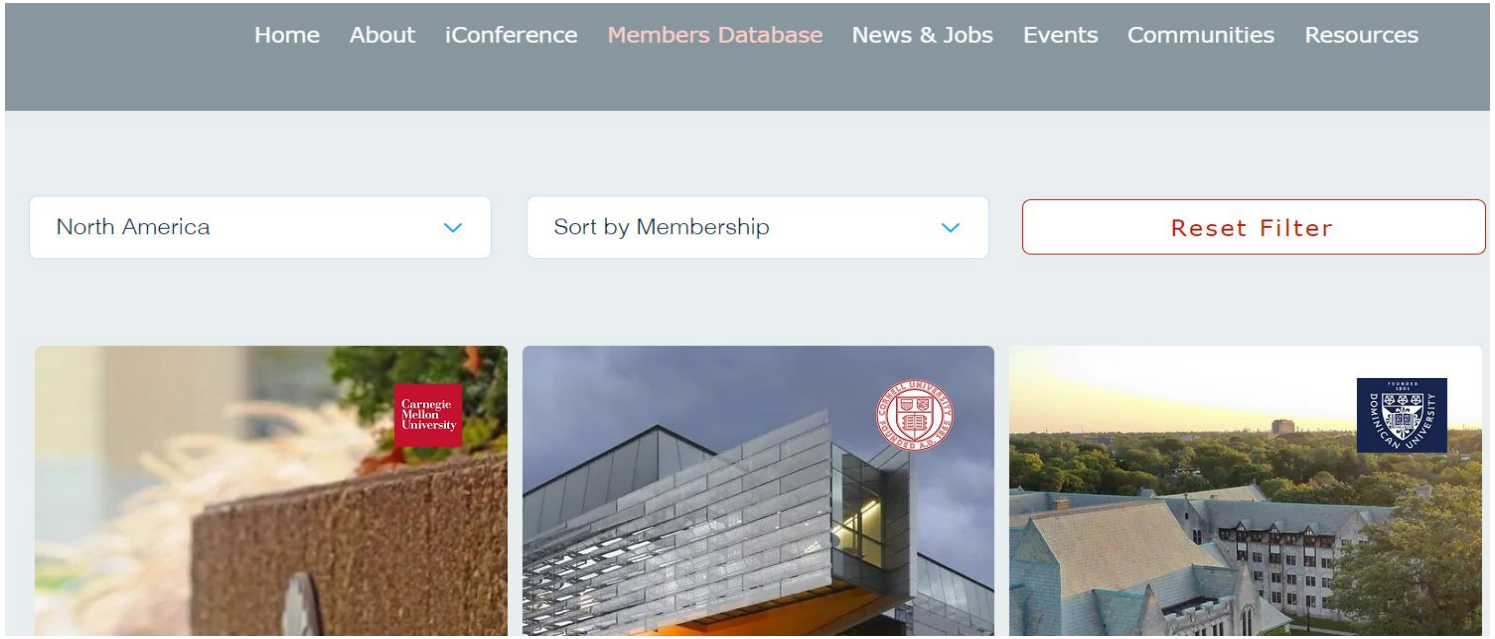
Insusceptibility indicators of the Oxford study

Indicator	O*NET Description
Perception and manipulation (P&M)	The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
Creative Intelligence (CI)	The ability to come up with unusual or clever ideas about a given topic or situation, or to develop creative ways to solve a problem.
Social Intelligence (SI)	Being aware of others' reactions and understanding why they react as they do.

The AI & RM Competencies: Two Studies

ARMA's Competencies Model

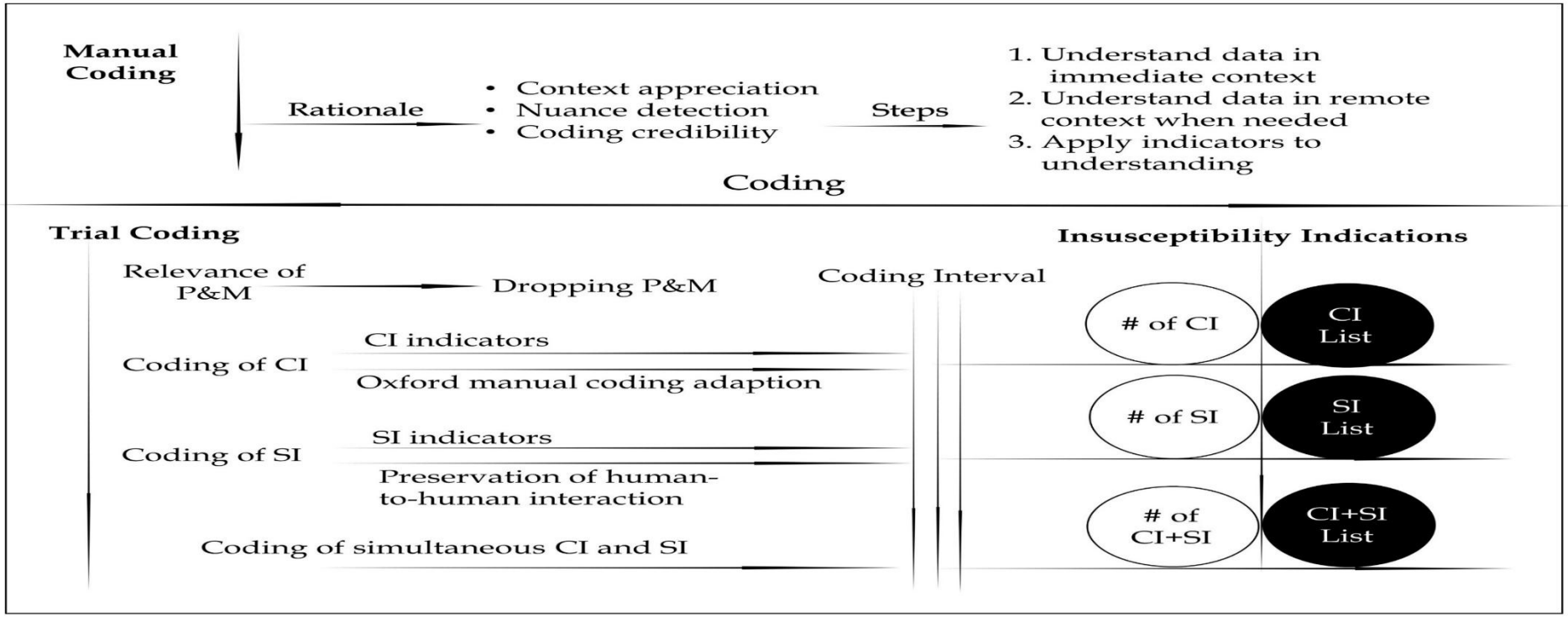
U.S. iSchools' A&RM programs



The AI & RM Competencies : Research Design

To adapt the oxford study's CI and SI indicators to the records management context, we instantiate them using O*NET's description of records management professional. Then, we compare it with ARMA's Competencies Model and iSchools' A&RM programs data.

Coding



Level 1: Practitioners at this level hold an entry-level position in the RIM profession, a position requiring no previous RIM experience. They should be acquiring foundational knowledge and skills for the RIM field; have a basic understanding of what RIM encompasses; understand the importance of information privacy and security; and be familiar with general business functions outside of the RIM function, such as accounting and human resources. Individuals at this level may have an undergraduate degree or work experience in another field.

Domain: Business Functions

Business Functions: This domain pertains to the knowledge and skills necessary to administer, implement, or maintain the non-RIM-specific functions an organization performs, or needs to perform, to achieve its objectives. Examples of business functions include supervising RIM staff, budgeting, providing customer service, identifying and mapping work processes, auditing, working in cross-functional groups, providing input to management, and performing strategic planning.

Level 1

Provide input to management about activity levels and program metrics based on current and assigned workload. (010101)

Knowledge of:

- Organizational and/or departmental policies and procedures

Skills:

- Identify, compile, sort, organize, and record appropriate data
- Communicate results and findings effectively, using established formats and reporting tools
- Basic oral and written communication skills

Identify and provide input to RIM management about ways to improve business processes and therefore improve the RIM program as well. (010102)

Knowledge of:

- Basic RIM principles
- Organizational RIM practices
- Basic written communication
- Basic technology used in the organization

Skills:

- Understand and effectively communicate RIM workflow processes

The ARMA Model Study : Domain-specific CIs

- **D1 Business Function**
  - Mapping individual development plans to RIM/IG program needs;
- **D2 RIM/IG Practices**
  - Developing RIM-compliant policy;
- **D3 Risk Management**
  - Identifying privacy implications;
- **D4 Communications & Marketing**
  - Defending the RIM/IG program based on its necessities and values;
- **D5 Information Technology**
  - Assessing new technology;
- **D6 Leadership**
  - Creating a work environment that encourages creative thinking and innovation;

The ARMA Model Study ：Strong CIs

- **Connection with Organization :**
  - Aligning the RIM/IG program with the organization's goals and strategic direction
  - Appreciating corporate culture and RIM/IG priorities;
  - Developing RIM/IG requirements to document business functions;

- **Ability to Research :**
  - Constructing appropriate research methodology and processes;
  - Performing strategic analysis of business, technology, and RIM/IG industries;
  - Analyzing national and international legal requirements as well as changes in recent legal decisions relevant to RIM/IG operations;

The ARMA Model Study ：SIs

- **Self-evident SIs:**
  - Influence; Inspire and motivate;
  - Mediate;
  - Persuade;

- **Context-reliant SIs:**
  - Build teams;
  - Change individual behavior in response to constructive criticism;
  - Demonstrate commitment, team spirit, pride, and trust;

The ARMA Model Study: Strong/Double Human Intelligence

- **As a RIM/IG subject expert, the ability to**
  - Consult with business groups and end users on the design of RM tools and technologies;
  - Focus on value-added interactions relevant to the RIM program;
  - Collaborate with general counsel to influence organizational policies and procedures affected by legal, privacy, and regulatory issues;

- **As an administrator of the RIM/IG function, the ability to**
  - Lead an inclusive workplace that maximizes everyone's talents to achieve RIM goals;
  - Negotiate and resolve conflicts and priorities within and between lines of business

The ARMA Model Study : Strongest AI-Resistant Tasks (22/221)

- **Develop** a strategic plan for a RIM program using best practice methodologies to achieve long-range organizational goals;

- **Partner** with C-level IT management and senior business leaders to identify and mitigate privacy risks for the organization's information;

- **Remain effective** during changes in responsibilities, work environment, or other conditions affecting the organization;

Conclusions and Actions

The RM profession
– by its nature and by its core –
Can compete with AI.

But improvements are needed.

- Redesign the current competencies model as a task only model so that AI-resistant CI&Sis can be consciously integrated into tasks, across knowledge domains, and taking into consideration the chain of experience currently between levels.

Conclusions and Actions (cont.)

- Balance the human–algorithm relationship
- Entail strategizing collaborations centered on AI capabilities, work together on:
  - Recognize our professional intelligences that are mostly challenging to AI;
  - Identify those that are costly to be replaced AI.

Findings of U.S. iSchools Study

Among the R&AM programs/ concentrations data, AI competency relevance commonly existed yet with low degrees.

- 13 iSchools (the course syllabus of whose are publicly available) offers a number of courses that addressed CI&SI competencies;
- But 9 iSchools have only one or two such courses;
- Among these, only a few are mandatory courses.

Findings of U.S. iSchools (cont.)

AI competency consistency is almost invisible within the immediate environment of the records and archives management programs/concentrations.

- The topics covered by these courses are limited, and there are only a few courses that are highly relevant for students obtain the capabilities to resist the replacement of AI, such as law, policy and ethics.

Findings of U.S. iSchools (cont.)

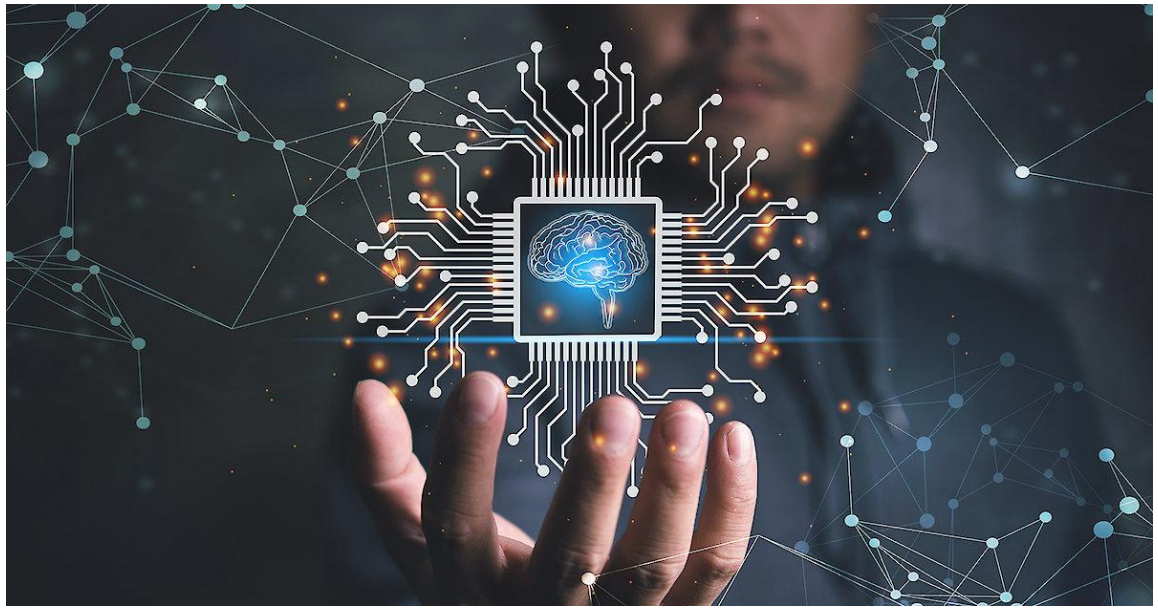
Moreover, there are exemplars which demonstrated a strong sense of building AI competencies for students.

- New courses: e.g. ,Archives and Artificial Intelligence, Creating Information Infrastructure and Designing a principled inquiry
- 8 iSchools offer cross-departments dual degree programs, ranging from 1 to 14, e.g., law, medicine, public policy, literature, history, languages, arts, etc.

Suggestions

- Develop innovative education & training plans with AI in mind;
- More studies on “good enough” standards for RM & AA key activities such as classification and appraisal, and defining the interfaces b/w human RMgers and robot Rmgers;
- More studies on RM legislative requirements to address the relationship b/w remained vs. reserved RM work;
- More studies on expanding RM & AA territory in light of AI development.

What We Should Do



What We Should/Need Do

Go beyond what we can immediately do
Envisage New Roles
Long-term Goals

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Study:

Role of RM in XAI Development

XAI (eXplainable AI)

- (like many other hot topics) XAI does not have a unified definition (Gilpin, 2018; Weller, 2019; Barredo Arrieta et al., 2020; Sander, 2021; IBM, 2022).
- Its goal, however, remains to be highly consistent: to open up the AI “black box” decision-making process, thus making AI decisions understandable – by human.
  - For our study, we focus on the AI decision recipients (i.e., employees, the general public, etc.), not the humans included in the AI loop.

Is current XAI sufficient?

- No. Not by our observation.
- Current XAI focuses exclusively on generating explanations – either ex-ante or ex-post (ISO 24028, 2020) – using AI systems, which also assumes the task of delivering the explanations.

We argue that

The long-established organizational records management (ORM) profession is unwisely omitted by the XAI field; and

We propose that

Building up on its traditional role of managing organizational information, ORM upgrades its service to society as an ***informational 3rd party*** to the current and future XAI.

An informational 3rd party in XAI

As Explanation Documenter, 1 of 3

Explanation production: ISO/IEC TR 24028:2020 Information Technology—Artificial Intelligence—Overview of Trustworthiness in Artificial Intelligence as an example

- Three modes of explanation: causal, epistemic, & justificatory
- The need to document these three modes are only sporadically mentioned; who will do the documenting is omitted entirely

Assumption: XAI performers as documenters

As Explanation Documenter, 2 of 3

XAI performers as documenters are insufficient, esp. for justificatory explanations

A justificatory explanation:

- communicates why the resulting decision is fair, valid and justified in light of the current state of affairs
- is incomplete without reference to institutional and social facts about the implementation of the system
- is open to scrutiny and contestation and likewise, the result of the system is re-assessable in light of possible counter-arguments seeking reversal or redress. (ISO 2020, p. 26)

As Explanation Documenter, 3 of 3

- XAI performers may be perceived as lacking neutrality in producing satisfactory justificatory explanations

- RM professionals external to AI development and deployment processes are suitable for:
  - Following and documenting the work of XAI performers
  - Communicating with XAI performers about stakeholder expectations
  - Testing explanation quality

As Explanation Messenger & Elucidator, 1 of 3

Explanation delivery

- Explanations are expected to be delivered by **system interfaces,** with different degrees of human-machine interaction for different types of explanations *(Four Principles of Explainable Artificial Intelligence by Phillips et al., 2021)*
- Setting up various types of recipient stakeholders and considering them in relation to different explanation types.

As Explanation Messenger & Elucidator, 2 of 3

We focus on: **Individuals of the general public** as the end user of AI systems

We argue that: for the general public, **human interactions** should be reserved for matters such as **explanation delivery and trust gaining** even in an AI world.

As Explanation Messenger & Elucidator, 3 of 3

Pure interface-based explanation delivery design lacks considerations for:

- User preference
- Explanation effectiveness
- Trust and local knowledge
- Social practice

RM professionals can better accommodate these elements

Conclusion

- Utilizing AI to explain AI is insufficient for establishing public trust due to the **lack of neutrality and localness** to explanation recipients
- RM can serve as an **informational 3rd party** to assist the production of explanations and to lead their delivery and elucidation
- To take on the related responsibilities, the RM profession must improve its **professional expertise** and strengthen its **professional independence**
- RM professionals should **work together** with XAI performers to play an **active role** in XAI to contribute to an information resilient society

Publications

General Article

1. Xie, S.L., Siyi, L. and Han, R. (2022), "Competing with artificial intelligence – can the records and information management profession withstand the challenge?", Records Management Journal, Vol. 32 No. 2, pp. 151-169.
2. Ma, L., Xie, S.L., Gao, Y. (2023), Reflections on Professions of Records and Archives Management in the Era of Artificial Intelligence—An Analysis of the U.S. iSchool Programs, Archival Science Bulletin, forth coming.

Conference Paper

1. Xie, S.L., Gao, Y., Ma, L., LI, S., Fan, G.,and Han, R.(2023). Is Archival bond bonding records management (RM) and archival administration (AA)? Association of Canadian Archivists, Charlottetown. accepted.
2. Xie, S.L., Gao, Y., and Ma, L.(2023). Plus ça change, plus c'est la même chose – The Australian records management case, iConference, Barcelona. accepted.
3. Xie, S.L., Gao, Y., & Han, R. (2022). Information Resilient Society in an AI World—Is XAI Sufficient? Proceedings of the Association for Information Science and Technology, 59. **Best Short Paper – 2nd Place**
4. Xie, S.L., Gao, Y., & Siyi, L. (2022). Records management and memories – with an AI illustration, 38th EGOS Colloquium

Thank you!

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