From Principles to Practice: Extracting Human-Centered AI Components from Governance Frameworks

Cindy van den Berg[1][0009-0007-0567-242X] and Hanlie Smuts[2][0000-0001-7120-7787]

[1,2] University of Pretoria, Private Bag X20, Hatfield, Pretoria 0028, South Africa
[1]cinvandenberg@gmail.com, [2]hanlie.smuts@up.ac.za

Abstract. Artificial intelligence (AI) offers numerous benefits, including increased automation levels, but can also harm individuals and communities, which raises concerns. The field of human-centered AI (HCAI) was created to address human involvement and the consideration of human rights and values involved in the development of AI systems. Document analysis of governance frameworks was used as a research approach to identify components that contribute to human-centered AI solutions. Four authoritative bodies were selected as the principal sources of AI-related principles, standards, and guidelines, based on their recognized authority, global relevance, and comprehensive regulatory scope. Thirty-seven human-centered components were extracted and classified into five classification categories: human-centered values and ethics, user experience and human interaction, data and model governance, technical robustness and system performance, and AI system capabilities and design considerations. The identified components can be used to develop AI solutions that are human-centered and uphold legal integrity, fundamental freedoms, and the principles of democratic governance. Including these components in a formal development methodology can assist in developing AI solutions that are human-centered, free from bias, beneficial to humans, supportive of human capabilities, and aligned with ethical, transparent, reliable, trustworthy, and explainable principles.

Keywords: Human-centered, artificial intelligence, HCAI, human-centered framework.

1 Introduction

Artificial intelligence (AI) is infiltrating all industries and our daily existence [1-3]. It offers many benefits but can also cause harm to people and communities [1, 4-8]. Current AI implementation focuses on algorithmic performance rather than its impact on humans [8-10]. AI enables increased levels of automation, with the potential to replace humans, which raises concerns [1-4, 7, 8, 11-13]. The field of human-centered AI (HCAI) arose to address human involvement and the consideration of human rights and values involved in the development of AI systems [1, 4, 7, 11, 14, 15]. HCAI also focuses on creating AI systems that benefit humans and amplify human expertise and skills [7, 8, 12, 16, 17]. AI solutions should be developed, rolled out, and utilized in a

manner that respects human morals, requirements, and preferences [4, 8, 12, 13, 16]. A growing concern about the values built into AI systems pertains to the integrity of the decisions made, and the parties that benefit or are disadvantaged by AI system decisions [6, 8, 18]. Other concerns relate to morality, security, and privacy [2, 18-20]. These systems must consider what humans perceive as moral and part of a shared belief system of right and wrong [5, 6, 17, 18]. Users of the system need to know that it is secure and safe to use, that the necessary precautions against cyberattacks have been taken [2, 7, 21, 22]. In addition, trust is required that private information will be safeguarded [4, 6, 8, 18, 20, 23]

Therefore, the primary research question of this paper is as follows: *What regulations, standards, guidelines, and principles support the development of human-centeredness, and what are the key components that contribute to human-centered AI solutions?* As delineated by the research question, the scope of the study was AI legal frameworks, intergovernmental and non-governmental international standards and guidelines. It excluded the investigation of other types of human-centered frameworks discussed in the literature. Instead, the study aimed to analyze legal frameworks, intergovernmental and non-governmental international standards and guidelines to identify the key human-centered components. This paper contributes to a broader, overarching body of research.

The structure of this paper is as follows: Section 2 provides the background to the research; Section 3 outlines the research approach; Section 4 presents the data analysis; Section 5 discusses the results and key findings of the literature review; and Section 6 offers concluding remarks.

2 Background

AI has achieved meaningful success in various industries, including computer vision and image recognition, natural language processing, fraud detection, autonomous vehicles, predictive maintenance, and planning [1, 24]. It uses machine learning (ML) and data to train a model [1, 6, 7, 12, 15, 19, 24-26].

The advancement of AI has brought attention to a more human-centered development approach to AI, which brings a shift in focus from technology to the human [4, 6, 7, 19, 27]. HCAI aims to reconcile AI solutions with human standards and reduce potential damage to humankind [5, 17, 20, 27]. HCAI highlights the need for AI to be developed to work for humans and to address concerns about its potential harm [6, 7, 13, 17, 27].

Global regulators are developing regulations, principles, and standards to oversee the technology to address concerns around AI [1, 15, 26, 28]. There is also a need to standardize the rules to be enforced [1, 4, 7, 8, 11, 14, 18, 29]. These regulations, guidelines, standards, and principles are intended to encourage innovation and trust in AI by advocating for responsible and trustworthy oversight [1, 15, 26, 28].

The European Union Artificial Act (EU AI Act), International Organization for Standardization and International Electrotechnical Commission (ISO/IEC), the Organization for Economic Co-operation and Development (OECD), and the United Nations

Educational, Scientific, and Cultural Organization (UNESCO) are included as the main governance frameworks due to the extensive and formative scope of these frameworks. The EU AI Act focuses on protecting fundamental rights and mitigating risks, while the UNESCO ethical recommendations offer a wider conceptual foundation for respecting human dignity, cultural diversity, and fairness. The OECD guidelines focus on empowerment and the principles of democracy. ISO/IEC standards provide technical implementation guidelines for implementing human-centered principles. These frameworks provide foundational values and practical implementation.

2.1 European Union Artificial Intelligence Act

The European Union created regulations for the implementation of AI systems, called the EU AI Act, which became enforceable on 1 August 2024 [1]. The EU AI Act prescribes a standardized regulatory framework that advocates for trustworthy human-centered AI across different sectors, that addresses the concerns about AI, protects fundamental human rights, and ensures equal access [1]. The growth and availability of AI systems necessitate the implementation of a standardized set of principles and guidelines [1]. AI models enable AI systems, but are not classified as AI systems by themself, AI models need to be integrated into a system [1].

The EU AI Act is a harmonized set of rules to protect the fundamental rights of humans that prescribes requirements and responsibility relating to design, development, data management, documentation, transparency, human intervention, efficiency, consistency, reliability, security, risk management, and continuous monitoring [1].

2.2 International Organization for Standardization and International Electrotechnical Commission

The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) operate as the primary international frameworks for global standardization [26]. ISO/IEC 5338:2023 specifically pertains to standards relating to the AI system life cycle processes [26]. ISO/IEC [26] explains that the development of AI occurs through iterations of solution specification, pilot, demonstration, and refinement of the specification. An AI life cycle model would help develop AI solutions in a more streamlined and impactful manner.

Due to the nature of AI, the ISO/IEC [26] advise paying special attention to “fairness, security, safety, privacy, reliability, transparency, explainability, accountability, availability, integrity, and maintainability”. The ISO/IEC 5388:2023 further emphasizes the need to assess the reliability, data quality, understandability, and robustness of models.

The ISO/IEC 23053:2022 emphasizes the importance of data management, model development (model selection, model training, and performance evaluation), monitoring, and governance [24]. The ISO/IEC 22989:2022 lists the following terms as relating to trustworthiness: accountability, availability, bias, control, explainability,

predictability, reliability, robustness, and transparency [30]. The ISO/IEC standards aim to provide a standard and framework that can guide the development of AI solutions [24].

2.3 Organization for Economic Co-operation and Development

The Organization for Economic Co-operation and Development (OECD) has published recommendations concerning AI with the intent to encourage innovation and trust through accountability and responsibility, as well as ensuring the honoring of human rights and principles [15, 31]. The OECD AI recommendations support its standards for privacy, cybersecurity, risk mitigation, and ethical business practices [15].

The AI recommendations consist of five ethical principles and five directives for policymakers and are referred to as the OECD AI Principles [15]. The principles are listed in **Table 1** and constitutes a pivotal milestone in intergovernmental efforts to reach agreement on the significance and foundational principles of responsible stewardship of trustworthy AI, particularly considering the rapid pace of AI research and innovation [31].

Table 1. The ten principles of the OECD recommendations on AI [15]

Principles for responsible stewardship	National strategies and global collaboration for trustworthy AI
Inclusive, sustainable, and people-centered development.	Supporting the development and exploration of artificial intelligence.
Human-centered values and fairness.	Enabling a robust digital infrastructure for AI development
Transparency and explainability.	Establishing a supportive policy framework for AI.
Stability, security, and risk mitigation.	Developing human capabilities to meet evolving labor market demands.
Accountability	International partnerships promoting responsible AI.

The OECD also suggests applying these principles in each of the stages of the design and development of an AI solution [15]. The stages, as proposed by OECD [15], are as follows: (1) plan and design, (2) collect and process data, (3) build and/or adapt models, (4) test, evaluate, verify, and validate, (5) make available for use, and (6) operate and monitor.

2.4 United Nations Educational, Scientific, and Cultural Organization

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) seeks to promote collaboration between nations in the fields of education, science,

culture, communication, and information [28]. UNESCO strives to enhance lawfulness and human rights [28]. Due to the concerns that exist regarding AI, UNESCO made recommendations for ethics within AI, to guide parties in acting with integrity around the impacts of AI [28]. These recommendations address the attributes of AI that impact ethics [28]. Importantly, ethical practices must be incorporated into all stages of AI design and development [28]. UNESCO [28] lists the stages, including "research, design and development to deployment and use, including maintenance, operation, trade, financing, monitoring and evaluation, validation, end-of-use, disassembly and termination".

The purpose of the recommendations is to supply a standardized framework of standards, guidelines, and practices. It aims to facilitate countries in developing legislation and standards relating to AI regulation, to guide AI practitioners on how to integrate ethics into all the design and development stages of AI, to safeguard and advocate for human rights, to facilitate communication between different parties and stakeholders regarding ethics, and to encourage equal access [28].

The recommendations can be categorized into three main sections: trustworthiness and integrity, and secondly, compliance with values and principles [28]. Trustworthiness and integrity deal with the design and development life cycle, whereby a solution should be ethical, benefit humans, and implement risk management [28]. Values speak to (1) respect, safeguarding, and upholding human rights, (2) reducing the environmental impact, and (3) meaningful human control, diversity, and inclusiveness [28]. Principles translate these values into action through (1) risk management, (2) equity and equality, (3) sustainability, (4) privacy and data protection, (3) meaningful human control, (4) transparency and explainability, (5) responsibility and accountability, (6) awareness and literacy, and (7) stakeholder involvement and governance [28].

3 Research Approach

This paper aims to understand key components that contribute to human-centered AI solutions, using document analysis to review regulations, standards, guidelines, and principles that support the development of human-centeredness.

Document analysis constitutes a qualitative research methodology involving the systematic examination and evaluation of documents to extract meaningful information to address defined research questions [32-35]. Dalglish and Khalid [35] suggest a four-step systematic approach: (1) prepare the material, (2) extract the data, (3) analyze the data, and (4) distil the findings. The first step, prepare the material entails defining the scope of the document analysis in line with the research question and time constraints, by specifying the type and approximate number of documents, establishing inclusion criteria, such as topic, date range, and source location, identifying the information for extraction, and implementing a systematic file-naming convention to ensure efficient organization and retrieval [35]. The second step, extract the data, refers to the process of systematically gathering information from the documents prepared in the first step [35]. The third step, analyze the data, is an iterative process that begins during data extraction but culminates in a holistic examination of the entire document corpus to

identify patterns and insights, applying specific analysis methodologies while continuously recording findings [35]. The fourth step, distil the findings, involves synthesizing the collected data into coherent and meaningful results by organizing insights in a conceptual structure [35].

The initial phase involves preparing the material, during which the scope of the study is delineated per internationally recognized standards for artificial intelligence and human-centered AI solutions. Standards and principles developed by management consulting firms were excluded from the scope of this study. This study focused on the EU AI Act, ISO, OECD, and UNESCO as primary sources of principles, standards, and guidelines, because of their recognized authority, global influence, and comprehensive regulatory scope. These four bodies are integral to shaping multilateral conversations and were selected due to their international legitimacy and institutional authority [36-39]. The African Union (AU) Continental AI Strategy was excluded from this study, as it was only adopted by the AU Council in July 2024 [40].

4 Data Analysis

As part of the second step of the research approach proposed by Dalglish and Khalid [35], data were extracted, resulting in the identification of thirty-seven essential human-centered components derived from the EU AI Act, ISO standards, and the principles outlined by UNESCO and the OECD, as presented in **Table 2**.

Table 2. Act, standards, and principles: human-centered components

Human-centered Component	EU AI Act	UNESCO	OECD	ISO
Accountability	X	X	X	X
Accuracy	X			
Augments human abilities			X	
Availability				X
Benefits humans	X	X	X	
Data governance	X	X	X	X
Data quality				X
Diversity and inclusiveness	X	X	X	
Equal access	X	X	X	
Ethics	X	X	X	
Explainability		X	X	X
Fairness	X	X	X	X
Human rights	X	X	X	
Integrity		X		X

Human-centered Component	EU AI Act	UNESCO	OECD	ISO
Maintainability				X
Meaningful control	X	X	X	X
Monitoring	X	X	X	X
Performance	X			X
Predictability				X
Privacy	X	X	X	X
Process logs	X			
Quality assurance				X
Reliability	X		X	X
Responsibility	X	X	X	
Risk management	X	X	X	
Robustness				X
Safety	X	X	X	X
Security	X	X	X	X
Stakeholder involvement	X	X	X	
Sustainability		X	X	
Technical documentation	X		X	
Testing	X			
Traceability	X	X	X	
Transparency	X	X	X	X
Trustworthy	X	X	X	X
Being unbiased	X	X	X	X
User requirements				X

As part of the third phase of the research process, data analysis, the extracted human-centered components were assigned to classification categories. The human-centered components listed in **Table 2** were classified accordingly, and the results are presented in **Table 3**.

Table 3. Human-centered component categorization

Human-centered category	Human-centered component	References
Human-Centered Values and Ethics	Accountability	[1, 15, 26, 28]
	Augments human capabilities	[15]
	Benefits humans	[1, 15, 28]
	Diversity and inclusiveness	[1, 15, 28]

Human-centered category	Human-centered component	References
	Ethics	[1, 15, 28]
	Equal access	[1, 15, 28]
	Fairness	[1, 15, 26, 28]
	Human rights	[1, 15, 28]
	Integrity	[26, 28]
	Meaningful human control	[1, 15, 28, 30]
	Responsibility	[1, 15, 28]
	Safety	[1, 15, 26, 28]
	Security	[1, 15, 26, 28]
	Sustainability	[15, 28]
	Trustworthiness	[1, 15, 28, 30]
	Being unbiased	[1, 15, 26, 28]
User Experience and Human Interaction	Explainability	[26, 28]
	Stakeholder involvement	[1, 15, 28]
	Transparency	[1, 15, 26, 28]
	User needs	[26]
Data and Model Governance	Data governance	[1, 15, 26, 28]
	Data quality	[26]
	Monitoring	[1, 15, 24, 28]
	Process logs	[1]
	Quality assurance	[26]
	Risk management	[1, 15, 28]
	Technical documentation	[1, 15]
Technical Robustness and System Performance	Accuracy	[1]
	Availability	[26]
	Maintainability	[26]
	Performance	[1, 24]
	Predictability	[30]
	Reliability	[1, 15, 30]
	Robustness	[30]
	Testing	[1]
	Traceability	[1, 15, 28]
AI System Capabilities and Design Considerations	Privacy	[1, 15, 26, 28]

5 Discussion of Results

In the fourth step, distill the findings, a set of categories was identified to classify the extracted human-centered components depicted in **Table 2**. These categories comprise: (1) human-centered values and ethics, (2) user experience and human interaction, (3) data and model governance, (4) technical robustness and system performance, and (5) AI system capabilities and design considerations. The categories are depicted in **Table 4**.

Table 4. Human-centered categories

Human-centered category	Description	EU AI Act	UNESCO	OECD	ISO
Human-centered values and ethics	Groups the human-centered components that highlight human dignity, rights, values, fairness, equality, and protection from harm.	X	X	X	X
User experience and human interaction	Groups human-centered components that relate to user engagement with AI systems.		X	X	X
Data and model governance	Groups human-centered components that focus on responsible data use, model oversight, quality assurance, and risk mitigation in AI systems.	X		X	X
Technical robustness and system performance	Groups human-centered components that relate to the safety, functionality, reliability, and ability to withstand failure and operate securely and transparently of the AI system.	X	X	X	X
AI system capabilities and design considerations	Groups human-centered components that relate to the inherent strengths, functional capabilities, privacy safeguards, and transparency of AI systems.			X	X

Figure 1 visually depicts the thirty-seven (37) components and their categories for inclusion in a framework for the development of human-centered AI solutions (**Fig. 1**).

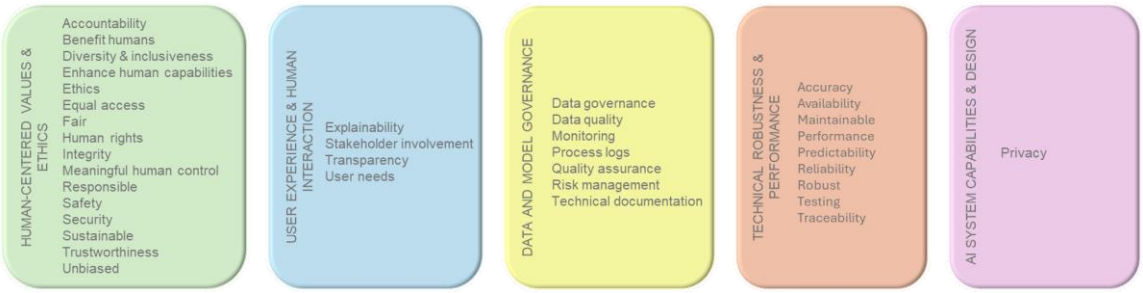

Fig. 1. Human-centered components categorization for framework implementation

The transformative capabilities of AI offer promising avenues for enhancing economic performance and efficiency [1, 15]. AI solutions also pose significant social risks, as they may unintentionally exacerbate existing social disparities and adversely affect marginalized populations [15].

AI solutions should be risk mitigated and resilient through standardized regulations and consistent guidelines to foster the implementation of AI solutions that are both human-centric and trustworthy [1]. AI stakeholders should uphold the rule of law, human rights, and democratic values throughout the AI system lifecycle. These measures include ensuring freedom, dignity, autonomy, privacy, equality, fairness, and labor rights [15].

6 Conclusion

This article elucidates the understanding of existing regulations, standards, guidelines, and principles that support the development of human-centeredness, as well as the key components that contribute to human-centered AI solutions.

The underlying study utilized document analysis as a research approach to identify the key components that contribute to human-centered AI solutions. Thirty-seven (37) human-centered components were extracted: accountability, accuracy, augmenting human abilities, availability, benefiting humans, data governance, data quality, diversity and inclusiveness, equal access, ethics, explainability, fairness, human rights, integrity, maintainability, meaningful control, monitoring, performance, predictability, privacy, process logs, quality assurance, reliability, responsibility, risk management, robustness, safety, security, stakeholder involvement, sustainability, technical documentation, testing, traceability, transparency, trustworthiness, being unbiased, and user requirements. In addition, five (5) classification categories were identified: human-centered values and ethics, user experience and human interaction, data and model governance, technical robustness and system performance, and AI system capabilities and design considerations.

The identified components and classification categories have practical relevance for the development of AI solutions that are human-centered and aligned with legal integrity, fundamental freedoms, and the principles of democratic governance.

HCAI seeks to implement a design and development process that emphasizes human agency [9, 41]. It ensures that AI solutions empower, facilitate, and extend human capabilities [10, 41]. In addition, HCAI reconciles automation and human oversight [41, 42]. However, a framework that emphasizes human agency and interaction is necessary for delivering safe, reliable, and trustworthy AI solutions [8, 43]. The classification categories and human-centered components can aid in the development of an HCAI design and development framework. The broader study aims to establish a human-centered framework that informs the design and evaluation of AI solutions.

The research study was limited to AI-related legal frameworks, as well as intergovernmental and non-governmental international standards and guidelines. It does not examine other forms of human-centered frameworks found in the literature. Instead, the study aims to analyze the selected legal and normative instruments to identify key human-centered components

Future research could explore how these components might be integrated into a formal development methodology to ensure that AI systems are human-centered, free from bias, beneficial to humans, supportive of human capabilities, and aligned with ethical, transparent, reliable, trustworthy, and explainable principles. Furthermore, the AU Continental AI Strategy could be examined in this context to assess its alignment with these principles.

References

1. Smuha, N.A., *Regulation 2024/1689 of the Eur. Parl. & Council of June 13, 2024 (Eu Artificial Intelligence Act).* International Legal Materials, 2025: p. 1-148.
2. Monaro, M., E. Barakova, and N. Navarin, *Editorial special issue interaction with artificial intelligence systems: new human-centered perspectives and challenges.* IEEE Transactions on Human-Machine Systems, 2022.
3. Berretta, S., et al., *Defining human-AI teaming the human-centered way: a scoping review and network analysis*. Frontiers in Artificial Intelligence. Vol. 6. 2023: ncbi.nlm.nih.gov.
4. Domfeh, E.A., *Human-centered artificial intelligence, a review*. 2022: TechRxiv.
5. Li, S. and X. Gu, *A risk framework for human-centered artificial intelligence in education: based on literature review and Delphi AHP method.* Educational Technology &Society, 2023. **26**(1).
6. Capel, T. and M. Brereton, *What is human-centered about human-centered AI? A map of the research landscape.* Proceedings of the 2023 CHI Conference on Human Factors in Computing, 2023.
7. Xu, W., et al., *From human-computer interaction to human-AI Interaction: new challenges and opportunities for enabling human-centered AI.* arXiv preprint arXiv:2105.05424. 2021: ask.qcloudimg.com.

8. Xu, W., et al., *Transitioning to human interaction with AI systems: New challenges and opportunities for HCI professionals to enable human-centered AI.* International Journal of Human–Computer Interaction, 2023. **39**(3).
9. Ahmad, K., et al., *Requirements engineering framework for human-centered artificial intelligence software systems.* Applied Soft Computing, 2023. **143**: p. 110455.
10. Coronado, E., N. Yamanobe, and G. Venture, *NEP+: A Human-Centered Framework for Inclusive Human-Machine Interaction Development.* Sensors (Basel, Switzerland), 2023. **23**(22).
11. Okolo, C.T., *Optimizing human-centered AI for healthcare in the Global South*. Patterns. 2022: cell.com.
12. Sarakiotis, V., *Human-centered AI: challenges and opportunities*. UBIACTION 2020. 2020: um.informatik.uni-muenchen.de.
13. Schmidt, A., *Interactive human centered artificial intelligence: a definition and research challenges.* Acm International Conference Proceeding Series, 2020.
14. Partarakis, N. and X. Zabulis, *A review of immersive technologies, knowledge representation, and AI for human-centered digital experiences*. Electronics. Vol. 13. 2024: mdpi.com.
15. OECD, *Report on the Implementation of the OECD Recommendation on Artificial Intelligence*. 2024, Organisation for Economic Co-operation and Development: Paris.
16. Rafsanjani, H.N. and A.H. Nabizadeh, *Towards human-centered artificial intelligence (AI) in architecture, engineering, and construction (AEC) industry*. Computers in Human Behavior Reports. 2023: Elsevier.
17. Schmager, S., I. Pappas, and P. Vassilakopoulou, *Defining human-centered AI: a comprehensive review of HCAI literature*. Proceedings of the Mediterranean Conference on Information Systems. 2023: researchgate.net.
18. Tahaei, M., et al., *A systematic literature review of human-centered, ethical, and responsible AI.* arXiv preprint arXiv:2302.05284, 2023.
19. García-Peñalvo, F.J., R. Therón, and N. Shoeibi, *Evaluating the effectiveness of human-centered AI systems in education*. 2024: repositorio.grial.eu.
20. Yue, Y. and J.Z. Shyu, *An overview of research on human-centered design in the development of artificial general intelligence.* arXiv preprint arXiv:2309.12352, 2023.
21. Shneiderman, B., *Human-centered artificial intelligence: reliable, safe & trustworthy.* International Journal of Human-Computer Interaction, 2020. **36**(6): p. 495-504.
22. Shneiderman, B., *Tutorial: human-centered AI: reliable, safe and trustworthy.* 26th International Conference on Intelligent User Interfaces - Companion, 2021.
23. Pisoni, G., et al., *Human-centered artificial intelligence for designing accessible cultural heritage.* Applied Sciences, 2021.
24. ISO/IEC, *ISO/IEC 23053:2022 — Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML)*. 2022, International Organization for Standardization: Geneva, Switzerland.
25. He, H., et al., *The challenges and opportunities of human-centered AI for trustworthy robots and autonomous systems.* IEEE Transactions on Cognitive and Developmental Systems, 2021. **14**(4).

26. ISO/IEC, *ISO/IEC 5388:2023 — Information technology — Artificial intelligence — AI system life cycle process*. 2023, International Organization for Standardization: Geneva, Switzerland.
27. Lu, Y., et al., *AI assistance for UX: a literature review through human-centered AI.* arXiv preprint arXiv:2402.06089, 2024.
28. UNESCO, *Recommendations on the Ethics of Artificial Intelligence*. 2021, United Nations Educational, Scientific and Cultural Organization: Paris.
29. Tindall, M., et al., *A human-centered approach to artificial intelligence applications in Naval Aviation.* AHFE (2023) International Conference, 2023. **114**.
30. ISO/IEC, *ISO/IEC 22989:2022 — Information technology — Artificial intelligence — Artificial intelligence concepts and terminology*. 2022, International Organization for Standardization: Geneva, Switzerland.
31. Yeung, K., *Recommendation of the Council on Artificial Intelligence (OECD).* International Legal Materials, 2020. **59**(1): p. 27-34.
32. Bowen, G.A., *Document Analysis as a Qualitative Research Method.* Qualitative Research Journal, 2009. **9**(2): p. 27-40.
33. Gross, J.M.S., *Document Analysis*, in *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*.
34. Morgan, H., *Conducting a Qualitative Document Analysis.* The Qualitative Report, 2022.
35. Dalglish, S.L., H. Khalid, and S.A. McMahon, *Document analysis in health policy research: the READ approach.* Health Policy and Planning, 2021. **35**(10): p. 1424-1431.
36. Torres, A.P.G. and T. Ali-Vehmas, *AI regulation: maintaining interoperability through value-sensitive standardisation.* Ethics and Information Technology, 2025. **27**: p. 26.
37. Cole, M.D., *AI regulation and governance on a global scale: An overview of international, regional and national instruments.* Journal of AI Law and Regulation, 2024. **1**(1): p. 126-142.
38. Salazar, J.M.F., L. Parcerisa, and C. Villalobos, *UNESCO's Global Governance in the School Education: A Scoping Review.* Revista Española de Educación Comparada, 2025(46): p. 343-364.
39. Sankaran, S., *Enhancing Trust Through Standards: A Comparative Risk-Impact Framework for Aligning ISO AI Standards with Global Ethical and Regulatory Contexts.* arXiv preprint arXiv:2504.16139, 2025.
40. Union, A., *Continental artificial intelligence strategy.* 2024. **21**: p. 2024.
41. Shneiderman, B., *Human-centered AI*. 2022: Oxford University Press.
42. Moruzzi, C. and S. Margarido, *A User-centered Framework for Human-AI Co-creativity*, in *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems*. 2024. p. 1.
43. Martins, P., et al., *Human-Centered Trustworthy Framework: A Human-Computer Interaction Perspective.* Computer, 2024. **57**(3): p. 46-58.