The role of wisdom in guiding ethical decision-making within AI systems

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Abstract:
With the rapid advancement of artificial intelligence (AI) technologies, questions surrounding ethics, decision-making, and responsible innovation have become paramount. This study explores the intersection of wisdom and artificial intelligence, examines the role of wisdom in guiding ethical decision-making within AI systems. Through qualitative interviews with experts in AI ethics, philosophy, and technology development, this research investigates how wisdom can be integrated into AI design and development to promote transparency, fairness, and accountability. The study also explores the ethical dilemmas and challenges that arise from the increasing integration of AI in various sectors and examines the potential for wisdom to inform more responsible and ethical AI practices. The findings of this study contribute valuable insights to the ongoing discourse on ethical AI governance and offer recommendations for fostering a future where wisdom guides the development and deployment of AI technologies in a way that aligns with societal values and ethical principles and common good for humankind.

Keywords: Wisdom, AI, Ethics, Decision-making.

1. Introduction

In today's rapidly advancing technological landscape, artificial intelligence (AI) has become a ubiquitous presence in our daily lives. From virtual assistants like Siri and Alexa to autonomous vehicles and predictive algorithms, AI has the potential to revolutionize nearly every aspect of our society. However, as we continue to rely more heavily on AI, it is important to consider the role of wisdom in guiding our interactions with this powerful technology.

Wisdom is the ability to make sound judgments and decisions in complex, uncertain, and ambiguous situations. It involves a deep understanding of ethical principles, empathy, and the ability to balance competing interests and values. In the context of AI, wisdom is essential for ensuring that technology is used ethically and responsibly.

One of the key challenges of AI is the potential for bias and discrimination in decision-making algorithms. AI systems are only as good as the data they are trained on, and if that data is biased or incomplete, the AI system may perpetuate and even amplify existing inequalities. Wisdom can help us address these issues by guiding us in the development and implementation of AI systems that promote integrity.

Additionally, wisdom can help us navigate the ethical dilemmas that arise from the increasing integration of AI into various aspects of our lives. For example, how do we balance the benefits of AI-driven healthcare innovations with concerns about privacy and data security? How do we ensure that AI systems are accountable and transparent in their decision-making processes? These questions require a nuanced understanding of ethics, values, and the potential impacts of AI on society.

Ultimately, finding the balance between wisdom and AI is crucial for harnessing the full potential of this technology while also mitigating potential risks and challenges. By incorporating wisdom into the design and deployment of AI systems, we can ensure that technology serves the common good and enhances human flourishing.

In conclusion, wisdom is essential for guiding our interactions with artificial intelligence in an increasingly technological world. By cultivating a deep understanding of ethics, empathy, and critical thinking, we can harness the potential of AI while also ensuring that it aligns with our values and serves the greater good. Let us strive to strike a balance between wisdom and artificial intelligence for a more ethical and sustainable.

2. **The problem statement:**
Despite the rapid advancement of artificial intelligence (AI) technologies, there is a pressing need to address ethical concerns, decision-making processes, and responsible innovation within AI systems. The lack of integration of wisdom in AI design and development has led to instances of bias, discrimination, and ethical dilemmas, raising questions about the impact of AI on society. This study aims to explore how integrating wisdom into AI develop systems that are more reliable, trustworthy, and ethical in AI-driven processes; Ultimately contributing to the development of more responsible and ethical AI technologies aligned with societal values and the common good for humankind.

3. Objectives

1. Investigate how wisdom can be incorporated into the design and development of AI systems to promote ethical decision-making, mitigate bias, and enhance transparency in decision processes.
2. Explore the ethical dilemmas and challenges arising from the integration of AI technology in various sectors, with a specific focus on understanding how wisdom can guide responsible decision- making and governance in AI applications.
3. Examine strategies for cultivating wisdom among individuals and organizations interacting with AI technologies to foster ethical practices, accountability, and transparency in AI-driven decision-making processes.

4. Research questions:

1. How can wisdom be incorporated into the design and development of AI systems to promote ethical decision-making and mitigate bias and discrimination?
2. What ethical dilemmas and challenges arise from the increasing integration of AI in various sectors, and how can wisdom guide us in navigating these issues to ensure technology benefits society as a whole?
3. How can individuals and organizations cultivate wisdom in their interactions with AI to foster responsible use, accountability, and transparency in AI-driven decision-making processes?

5. Methodology

To answer the research questions on the intersection between wisdom and artificial intelligence, a qualitative research method may be beneficial. The qualitative analysis: by Conducting interviews or surveys with experts in AI ethics, philosophy, and technology development to gather insights on the role of wisdom in guiding ethical decision- making in AI systems. This qualitative data can provide rich, detailed perspectives on the challenges and opportunities in integrating wisdom into AI design and development. Qualitative methodology allows researchers to gain a deep understanding of complex phenomena by exploring participants' perspectives and experiences (Yu & Yu, 2023).

Sample size: While interviews with experts can provide nuanced insights and expert opinions, it is essential to have a sufficiently diverse sample size to capture a range of perspectives and experiences. Consider including a variety of experts from different backgrounds, disciplines, and viewpoints to ensure a comprehensive understanding of the topic.

For a qualitative research study exploring the intersection of wisdom and artificial intelligence, and the role of wisdom in guiding ethical decision-making in AI systems, a sample size of around 5to 10 experts would be a good starting point. This number allows for a diverse range of perspectives to be captured while also ensuring that the data collection and analysis remain manageable and focused. When interviewing experts, the minimum sample size may vary due to the specialized knowledge and expertise they possess (Marshall et al., 2013).

6. Literature reviews

Before Responsible Innovation: Teaching Anticipation as a Competency for Engineers (Stone et al., 2020). This study focuses on applying historically informed anticipation to teach engineers Responsible Innovation (RI) as a competency. The methodology suggested is called the "value-genealogy of technology," and it entails examining how values and technologies evolved over time in order to develop a critical understanding of context, limits of foresight, and the socially and historically generated nature of values.

The research is important because it examines the difficulties in predicting the effects of emerging technology and understanding values such as sustainability and privacy. Based to the findings, moral sensitivity, epistemic humility, and moral imagination are crucial attributes that engineers should be taught in RI programs in order to better predict the effects of innovations and match technological advancements with ethical standards.

Students can get a sophisticated grasp of values, analyse technology- value relations critically, and become more equipped to handle ethical issues in engineering practices by cultivating historically informed anticipation.

- Anticipatory ethics as a method for teaching engineering ethics. (Wilson, 2021)

With emphasis on ethical challenges raised by the fast development of engineering technologies, the study investigates the concept of anticipatory ethics in the context of teaching engineering ethics. Three different types of case analysis—historical, current, and expected future—as additionally as case comparisons and future technological development projections are all part of the technique. For the study of human-technology relationships, a case-based methodology combining Postphenomenology would be beneficial.

The findings emphasize the necessity of anticipatory ethical analysis, promoting ethical discussions in engineering and ICT curriculum to address ethical challenges early in technological development. The study of historical cases lays the foundation for future advances, allowing students to deal with contemporary and developing challenges, including the moral assessment of technical objects and the impacts of technology on human experiences.

The research is significant as it offers an approach for evaluating a broad variety of ICT and engineering issues related to ethics, bridging the gap between predicted and prior technological advances. Students have a stronger capacity to think critically and ethically about future challenges in engineering and ICT through the application of postphenomenology and anticipatory ethics to help them recognize and deal with ethical issues in developing technologies.

- ETHICS-2021 Special Session 7: Integrating virtue ethics into STEM courses (Henslee et al., 2021).
  The integration of virtue ethics into STEM courses will be discussed in the publication, with a concentrate on character education and fostering of virtues in engineering students. A framework for integrating character education into the curriculum is being established as part of the methodology, and examples of how it's used in a Wake Forest University robotics course are offered. Weekly talks on issues like employment, inequality, biases in AI, etc. were an element of the robotics course. Students' ethical reflection and the clarity of the media they viewed were evaluated.

  The study's findings emphasize how important it is to integrate ethics into engineering practice and education since accomplishing so will better equip students for the complexity of the STEM job sector of the future. It is emphasized how essential it is to start small, provide safe spaces for students to fail, and employ resources for implementation. Students are better equipped to make hard decisions and grow morally to meet the demands of the continuously developing job market when virtue ethics are integrated into STEM courses.

- WIP: How Should We Decide? The Application of Ethical Reasoning to Decision Making in Difficult Cases (van Tyne, 2020).
  This study explores the different ethical frameworks— Deontology, Virtue Ethics, Consequentialism, and Utilitarianism—that first-year engineering students use to address moral conundrums. The study's methodology involved collecting and analyzing twelve essays written by non-traditional first-year engineering students who had just transferred to Virginia Tech. The writings were coded for identifying the topic, recommended fixes under each ethical framework, and the participants' understanding and implementation of each framework.

  The study's conclusions indicated that very few participants could differentiate across the four ethical frameworks with precision and offer recommendations that might take into account any negative consequences. Some participants applied the ethical frameworks to the ethical challenges offered with insufficient effort, comprehension, or adherence to the assignment's purpose. The study also revealed certain misconceptions and discrepancies in the participants' application of the various ethical frameworks, suggesting that first-year engineering students still need to work on their comprehension and application of ethical reasoning concepts.

The importance of this paper lies in its contribution to the engineering ethics community by assessing how well first-year engineering students understand and apply different ethical frameworks. By identifying areas of misconceptions and inconsistencies in the application of ethical reasoning principles, this study can inform educators and curriculum developers about the need for more focused training and guidance in engineering ethics for students. Additionally, this study underscores the importance of providing opportunities for students to practice ethical decision- making in resolving ill-structured societal problems, thereby fostering a sense of professional responsibility among future engineers.

- Wisdom in the Age of AI Education. (Peters & Green, 2024).
  AW transcends traditional AI capabilities. It involves not only processing vast amounts of information but also making decisions that reflect deep ethical understanding, empathy, and alignment with human values. Unlike standard AI, which focuses on data-driven tasks, AW integrates ethical reasoning and societal context. The study reviews literature on wisdom and AI technologies, exploring their integration into society. The findings emphasize the importance of AI systems incorporating ethical reasoning and empathy to align with diverse societal norms. The paper highlights AI's evolution from basic tools to systems that emulate human wisdom. It discusses embedding ethical frameworks in AI, ensuring responsible decision-making. Institutions play a crucial role in governing AI technologies. Addressing the role of institutions ensures ethical AI development and application. The significance of aligning AI with human values is essential for successful integration into various aspects of human life. AW-driven AI envisions enhancing human lives while upholding core values. The paper envisions a future where AW-driven AI contributes positively to humanity. A new framework for planetary ethics should guide wisdom in the age of AI. In summary, AW represents a shift toward AI systems that exhibit wisdom, empathy, and ethical reasoning. Its integration into education can empower students with critical capacities for democratic planetary stewardship in the age of AI.

- Technological progress, artificial intelligence development and ethical paradigms (1). (Maharani et al., 2022). The study, named "Technological Advancements, the Growth of Artificial Intelligence, and Moral Frameworks," delves into how the advancement of artificial intelligence in Indonesia is affecting society and proposes a moral framework to navigate these effects. The approach taken in this research is through a review of existing literature, employing philosophical hermeneutic techniques to examine the moral implications of artificial intelligence's influence on human existence. The study points out the mutually beneficial relationship between technology and humans, underlining the importance of ethics in preserving human dignity and the balance of life. The conclusions indicate that technology, being a key component of human existence, molds the future of humanity. It also stresses the need for a carefully planned national approach to address artificial intelligence's growth, with a primary emphasis on integrating ethics as a core component of this approach. The significance of this study is in promoting transparent guidelines and plans to oversee the moral consequences of artificial intelligence's growth, ensuring that technology's beneficial aspects are utilized in a responsible manner.

- Postphenomenological Method (Ritter, 2021). This research delves into the postphenomenology method, which combines insights from phenomenology and pragmatism to investigate how technologies shape human-world interactions and affect the perception of the world and individuals. The author thoroughly examines the strengths and potential of postphenomenology, with a particular focus on its capacity to engage with technological objects and its shift towards empirical research. The research strategy includes analyzing the

theoretical structures of key postphenomenologists such as Don Ihde and Peter-Paul Verbeek. The document emphasizes the necessity of philosophical precision and reinforcement from a phenomenological viewpoint to overcome the shortcomings of postphenomenology in identifying and examining technological mediation beyond traditional definitions of technology.

To sum up, the document seeks to illustrate the necessity of adopting a phenomenological perspective on technology within the framework of postphenomenology, emphasizing the equilibrium between phenomenology and pragmatism in the study of technological mediation. The research strategy involves a critical evaluation of postphenomenology's stance on technological entities and its shift towards empirical research, ultimately highlighting the significance of expanding the research area to comprehensively understand the intricacies of technological mediation.

- The Product Development of Portable Laboratory Integrated with Local Wisdom PL-ILW by Undergraduate Student (Susanto et al., 2022). The research delves into the creation of a Portable Laboratory integrated with Local Wisdom (PL-ILW) by undergraduate students, aiming to offer a cost-effective and portable laboratory solution to enhance science education in remote and underprivileged regions. The methodology employed in the development process encompasses design, construction, and testing phases of the PL-ILW, along with evaluating its efficacy in teaching science in a rural village in Indonesia. The study's results underscore that the PL-ILW serves as a pragmatic and efficient means of delivering fundamental science education in areas where conventional laboratories are impractical or unaffordable.

  The significance of this paper lies in demonstrating the importance of innovation and local wisdom in devising practical solutions that can tackle societal challenges, particularly in remote and underprivileged areas. By introducing the PL-ILW, the paper underscores the potential to narrow the gap in science education accessibility in underserved communities, ultimately contributing to enriching educational opportunities and nurturing scientific curiosity and knowledge in those regions.

- Integration of ethics focused modules into the steps of the engineering-design process (Edelson et al., 2021). This paper explores the incorporation of engineering ethics education into a first-year design course at Duke University. The approach involved the creation of four modules that were integrated into the course curriculum, each targeting different stages of the engineering design process in order to facilitate discussions on ethical considerations. The effectiveness of these modules was assessed through a pre/post study that measured changes in students' ethical awareness using established surveys. The results indicated some progress in students' ability to recognize trade-offs in design criteria and other factors that influence product development. However, overall, the ethics modules did not demonstrate a significant impact on ethical awareness. The document emphasizes the importance of integrating ethics education into engineering curricula to foster responsible and thoughtful design practices. The developed modules aim to instill an ethical mindset in students early on in their engineering education, encouraging them to critically analyze their design choices and consider the broader implications of their designs on society. Further research is planned to evaluate the long-term effects of these ethics' modules on students' ethical mindset.

- On the Ethics of Algorithmic Intelligence (Simanowski et al., 2019). The article authored by Roberto Simanowski, titled "On the Ethics of Algorithmic Intelligence," delves into the

ethical ramifications of AI technology. The approach taken in the study involves scrutinizing the authority wielded by scientists and entrepreneurs in the creation and application of AI innovations, while also analyzing the effects of AI on individual autonomy and societal dynamics.

- The conclusions drawn in the article indicate the possibility of AI curtailing human freedom and presenting hazards if not employed ethically. Nevertheless, it is acknowledged that embracing AI has the potential to yield positive results such as reducing fatalities on the roads and enhancing safety in hazardous occupations. The article poses fundamental inquiries regarding the interplay between AI and ethics, fostering a discourse on the appropriate utilization of AI to benefit humanity rather than exert control over it.

  In essence, the significance of this article lies in instigating dialogues on the ethical considerations associated with AI technology. It underscores the necessity for meticulous deliberation on the development, utilization, and regulation of AI to ensure its societal advantages while upholding individual autonomy. The article underscores the pivotal role of ethics in shaping the application of AI technology and encourages contemplation on the potential consequences of advancing AI capabilities.

- Students taking action on engineering-ethics. (Dillon et al., 2020). This document explores the creation and execution of an original classroom project module designed to improve the ethical skills of engineering students. The approach involved introducing an ethics dilemma concerning a vaccine transportation device into a heat transfer course at the University of Portland. Students were tasked with devising an action plan to tackle the ethical issue, and their progress was evaluated through surveys and assessments. The results demonstrated a notable enhancement in students' capacity to explore various solution paths, recognize the needs of stakeholders, and formulate action plans for ethical challenges. The significance of this paper lies in its emphasis on practical abilities in ethical decision- making and communication with authorities, surpassing conventional engineering ethics education. The outcomes suggest that such modules can have a pivotal role in molding the character development of engineers and preparing them to make well- informed decisions in diverse professional settings. By integrating ethical education into engineering curricula, students are furnished with the essential skills to navigate ethical dilemmas in their forthcoming careers. The triumph of the study sets the stage for future modifications and introductions of similar modules in engineering education to cultivate an entrepreneurial mindset and boost students' capabilities in effectively addressing ethical predicaments.

  In summary: The texts discussed focus on various aspects of integrating ethics into engineering education, with a particular emphasis on responsible innovation, anticipatory ethics, virtue ethics, ethical reasoning, AI ethics, and character education. Each paper proposes different methodologies for teaching ethics in engineering, including historical analysis, case studies, character education frameworks, and ethical dilemma modules. The importance of integrating ethics into engineering curricula is highlighted in all texts, as it prepares students to navigate complex ethical challenges in their future careers.

  A comparison between these studies shows that they all emphasize the need for ethical considerations in engineering education and practice. They suggest different approaches to teaching ethics, such as historical analysis, case studies, virtue ethics frameworks, and ethical reasoning frameworks. Each text highlights the importance of developing ethical awareness, critical thinking skills, and ethical decision-making abilities among engineering students to

address the ethical implications of emerging technologies and design practices. Overall, the texts contribute to the ongoing discussion on integrating ethics into STEM education to prepare students for the ethical challenges of the future job market and societal demands.

7. What is wisdom?

Wisdom is a multidimensional concept that can be cultivated through educational means, particularly in the realm of gifted education. Neglecting the significance of wisdom within educational environments may contribute to the current societal unrest. Given the perceived need for wisdom in today's world, it is crucial to carefully consider ways in which wisdom can be nurtured. The advantages of wisdom in the context of gifted education are evident, as it is built upon advanced cognitive abilities, self-control, innovative thinking, decision-making skills, and ethical conduct that collectively yield favourable results for both individuals and their communities. Furthermore, according to Renzulli (2002), the primary objective of gifted education is not only to foster self-actualization in talented individuals but also to elevate the calibre of leaders within society. We posit that wisdom plays a pivotal role in achieving these objectives, as its fundamental elements are closely aligned with the aims of gifted education: enhancing social capital and cultivating competent, empathetic leadership will effectively prepare individuals for the challenges of the future (Karami et al., 2020).

8. Wisdom from an Islamic Perspective:

Through research in Islamic heritage and the writings of scholars, it became clear that most research deals with some of the meanings of wisdom or about wisdom in one of its meanings, parts, components, or some of its outcomes, which is not wisdom in the total sense.

It is possible to combine what was previously mentioned about the definition of wisdom as follows. Despite the difficulty of finding wisdom itself, it can be estimated how close people are to this ideal state, as wisdom is considered a personal trait, and it is also a typical type that attempts to combine reality and ideal; Because few people may meet the definitions and descriptions, it can also be concluded that wisdom is composed of dimensions: These dimensions reinforce each other, in an integration that we can define as follows: (Al-Hidabi, Dawood & Khiati, 2022).

1. The cognitive dimension of wisdom refers to an acquired quality that helps understand life, that is, understanding the significance and deep meaning of phenomena and events, especially those related to personal matters and those related to others. This includes knowledge of the positive and negative aspects of human nature, the limitations of human knowledge, the inability to predict and the lack of certainty.
2. The practical dimension: Knowledge alone is not enough. It must be accompanied by application. Preparation alone is not enough. Action must be done. Indeed, knowledge without implementation can lead to failure, frustration, and people’s discontent. Wisdom is for a person to know what he is doing, and skill is to He knows how to do it, and success is doing it according to that skill.
3. The moral dimension: It is a set of principles and standards that guide an individual’s behaviours and help him determine what is right and what is wrong. The moral dimension also refers to that force that leads a person to distinguish between good and evil. Sobriety, calm, honesty, courage, boldness, justice, striving to achieve common benefit, and adopting The principles of social responsibility are at the core of this dimension.
4. The contemplative dimension: It is a prerequisite for developing the cognitive dimension of wisdom. Life can only be understood more deeply if one can perceive reality as it is without any distortions. To do this, one needs to engage in contemplative thinking by looking at

phenomena and events from many perspectives. Considering the development of self-insight and awareness, this practice will gradually reduce self-centeredness, increase insight into the reality of things, including the motivations for one's own behaviour and of others, and increase cooperation with them.

5. The emotional dimension: It appears in the lack of self- centeredness and transcendence of subjectivity, and this is what allows the individual to have a more comprehensive understanding of life in general and different human situations in particular, which leads the individual to a greater understanding of the behaviours of other people with increased empathy, compassion, love for others, and altruism.

These five dimensions are not independent of each other, but they are not conceptually identical. For example, understanding (cognitive

dimension) is quite different from feeling empathy for others (affective dimension). However, the five dimensions must be present together for it to be considered A person is "wise" even if in different amounts depending on what the situation requires.

Wisdom consists of five dimensions: cognitive, contemplative, emotional, practical, and moral in an integrated and balanced way of the individual's personality related to his life in society.

Wisdom can be considered as a personal trait that distinguishes an individual from others through practical manifestations.

Researchers can measure its five components, and the decisions made to reach positive and beneficial outcomes for the individual and society (Al-Hidabi, Dawood & Khiati, 2022).

9. Definition of wisdom:

Wisdom is defined as the process of making the right decision and taking the correct action by integrating knowledge and expertise, utilizing reason, acting within the framework of values and ethics, and understanding the balance of interests and concerns. In order to achieve benefits or avoid harm, based on the context. (Al-Hidabi, Dawood & Khiati, 2021)

How can wisdom be incorporated into the design and development of AI systems to promote ethical decision-making and mitigate bias and discrimination?

Artificial wisdom, also known as artificial general intelligence (AGI), strives to create machines capable of grasping and comprehending any intellectual phenomena, such as contemplation, learning, and decision-making, in the same way that humans can. AGI is currently in its early phases of development. Human cognition serves as the foundation for AI training, since individuals create learning models and datasets. However, humans must be in charge and monitor AI decision-making while it is being developed and used.Lim et al., 2023.Artificial wisdom, which is referred to as artificial general intelligence (AGI), strives to create intelligent machines capable of grasping and comprehending any intellectual phenomena, such as contemplation, learning, and decision-making, in a manner that humans can. AGI is currently in its early phases of development. Human cognition serves as the foundation for AI training, since individuals create learning models and datasets (Lim et al., 2023).

To include wisdom in the design and development of AI systems in order to enhance ethical decision-making and minimize bias and prejudice, numerous factors must be considered. First, it is critical to appreciate the value of human involvement in reviewing AI judgments. In terms of safety and ethics, near-term research objectives include human oversight of AI

decisions. Supervision may be required when the vulnerability is high. With human-focused rendition, the machine makes a judgment; nevertheless, having the ability to evaluate the amount of uncertainty of that choice is one of the critical criteria so that when vulnerability goes under an appropriate limit, human management is searched for (Leavitt et al., 2012). To ensure ethical outcomes, consumers have to monitor and validate the decisions made by AI systems. In addition, AI models must incorporate components of human intelligence, decision- making, and moral goals to guarantee that judgments produced by AI systems indicate the Company's ethical standards. Human wisdom and artificial intelligence will improve each other's comprehension and utility while additionally encouraging one other's progress. Thus, AI models should be developed to maintain our human attributes, decision-making abilities, and moral goals, or at least the finest aspects of our perspectives. As consequently, advancing Artificial Wisdom (AW) will require extensive cooperation among computer scientists, neuroscientists, psychologists, and ethicists. (Jeste, 2020Essentially, AW is going to reflect the qualities of wise people. As a result, human management is supposed to be consistent. Further, the solution is a whole set of methodologies, an entire set of concepts that we term "human-focused artificial reasoning," i.e., artificial wisdom (Leavitt et al., 2012). It is also necessary to consider the ethical and societal consequences of using AI, notably in terms of culpability in the case of machine oversight or harm[10b]. Incorporating wisdom into AI systems may be performed by including moral and wise components as an ethical standard for sensitive platforms including online gambling. (Marcus et al., 2022).

Another realistic reason to worry about AI is its harmful impact on dependence and gambling offerings. Many interactive online platforms incorporate eye-catching and addictive components that enhance user engagement and encourage greater levels of online presence, interaction, and commerce. Excessive use of such technology is unsafe and could be designated as addictive behaviourCemiloglu et al. (2020) examined the application of AI in online gambling, providing an excellent illustration of addictive technology. Gambling or betting is a horrendous sort of addiction or habit formation that can lead to significant implications for one's personal well-being, social position, and financial status. Integrating wisdom into AI may be accomplished by establishing moral and wise components as the norm of ethics for such gambling systems. Additionally, there is a need to ensure that AI systems do not generate biased or discriminatory content by integrating a human- centred approach in learning AI models (Cemiloglu et al., 2020). One possible worry of generative AI is the development of biased or inappropriate information. For example, if the training data contains gender or racial prejudices, the resulting content may equivalently be prejudiced or discriminating.

The recommendation currently is to switch from 'Artificial Intelligence' (AI) to 'Artificial Wisdom'. The way psychological science and cognitive science have informed the AI field, similar approaches can follow to develop AW. We must build bridges between wisdom studies and AI to proceed in the right direction. As a result, now is the best time to investigate and understand the knowledge, as well as to turn it into a practical notion as the fundamental concept for AW. AW is only possible if we go with the specificationism approach (Tsai, 2020) (i.e., identifying and addressing the practical approach of how the system should be able to generate practical reasoning) rather than the instrumentalism approach (i.e., talking about practical reasoning only in philosophical terms and concepts) (Tsai, 2020). The specificationism approach, which involves describing comprehensively how the system should be able to create practical reasoning, is critical to developing human-centered artificial intelligence. The recommendation currently is to switch from "Artificial Intelligence" (AI) to "Artificial Wisdom" (AW). The way psychological science and cognitive science have

informed the AI field, similar approaches can follow to develop AW. We must build bridges between wisdom studies and AI to proceed in the right direction. (Salvagno et al., 2023). As a consequence, now is an ideal time to investigate and fully understand the knowledge, as well as to turn it into an useful notion as the fundamental concept for AW. AW is only possible if we take the specificationism approach (Tsai, 2020) (i.e., specify and discuss the practical approach of how the system should be able to generate practical reasoning) rather than the instrumentalism approach (i.e., merely addressing practical reasoning in philosophical terms and concepts) (Tsai, 2020). Finally, by taking into account these various elements and integrating human wisdom, human supervision, and ethical criteria into the design and development of AI systems, it is possible to promote ethical decision-making while minimizing the risks of bias and discrimination that these systems may present.

What ethical dilemmas and challenges arise from the increasing integration of AI in various sectors, and how can wisdom guide us in navigating these issues to ensure technology benefits society as a whole?

The increasing integration of AI across various sectors presents numerous ethical dilemmas and challenges that must be addressed to ensure that technology benefits society. Some of the key ethical concerns include data privacy, algorithmic impartiality, responsibility for outcomes, openness, inclusivity, equity, and justice. These challenges highlight the need to balance the opportunities of AI technologies with respect for ethical principles. (Benjamin Samson Ayinla et al., 2024) One of the crucial dilemmas is bias in AI systems, as it can lead to unfair outcomes and exacerbate inequalities. Addressing bias in AI algorithms requires a concerted effort to recognize and mitigate biases, emphasizing collaboration among stakeholders and integrating ethics into the skill set of AI developers (Siqueira De Cerqueira et al., 2022). In the healthcare sector, the integration of AI presents challenges related to maintaining empathy and intuition in medical practices while leveraging AI's proficiency in deciphering complex medical data [4a]. It is essential to ensure that AI augments, rather than replaces, physicians, highlighting the importance of balancing technological innovation with human insight (Umbrello, 2022). To navigate these ethical dilemmas and challenges, wisdom can guide us in making informed decisions that prioritize ethical considerations and societal values. Wisdom can guide us in fostering a comprehensive approach that integrates ethics into AI development and usage, ensuring equitable outcomes that benefit society while respecting human values. By promoting transparency, accountability, multi-stakeholder collaboration, and public engagement, we can navigate these ethical issues effectively and ensure that AI technologies serve the greater good. Ultimately, using wisdom as a compass in addressing ethical challenges in AI can pave the way for the responsible and sustainable development of AI technologies that align with societal values and individual rights (Benjamin Samson Ayinla et al., 2024).

How can individuals and organizations cultivate wisdom in their interactions with AI to foster responsible use, accountability, and transparency in AI-driven decision-making processes?

To cultivate wisdom in their interactions with AI and foster responsible use, accountability, and transparency in AI-driven decision-making processes, individuals and organizations can take several key steps:

1. Create an Environment that Supports Informed Choice: Individuals and organizations should prioritize providing users with sufficient information to enable informed decision-making.

This involves ensuring that users have a clear understanding of how AI systems function and the potential risks associated with their online behaviour. By offering transparency about the characteristics and operation of AI systems, such as the probability of outcomes and the influence of independent events, users can make more informed choices (Singhal et al., 2024).

2. Limit Influence on User Behaviour: It is crucial to decrease the influence that AI systems may have on user behaviour to promote conscious decision-making. This can be achieved by setting design constraints on platforms to prevent creating illusions of control and ensuring transparency about the intentions behind system functionalities (Mittal et al.,2023).
3. Monitor User Data to Identify Risk Factors: Organizations should implement systems to monitor user data to detect risky behaviour and intervene proactively. By analysing data such as betting history, time spent on a platform, and emotional stress levels, organizations can identify potential issues and provide support to individuals at risk of addiction. This step is essential in promoting responsible gambling practices and preventing harmful behavior (Metcalf et al., 2023).
4. Provide Information about AI Systems: AI platforms should aim to be more transparent in how they operate in order to empower user understanding of why and how AI systems make decisions. Through Explainable AI techniques, users can gain insights into the functioning of AI algorithms, helping them to make more informed decisions about whether to follow AI recommendations (Tao et al., 2022).
5. Offer Referral to Responsible Usage Applications and Resources: Organizations should provide users with information about resources and support services for responsible usage. By offering access to care services, phone numbers, and websites for assistance, individuals can seek help when needed and make informed choices about their online behaviour (Hosseini et al., 2018). By following these ethical requirements and incorporating them into their interactions with AI systems, individuals and organizations can cultivate wisdom, promote responsible use of technology, and enhance accountability and transparency in AI-driven decision-making processes.

6. Questions for the interview

1. Would you provide examples of ethical dilemmas or challenges that have arisen in the development and deployment of artificial intelligence systems?
2. In your opinion, what role does wisdom play in guiding ethical decision-making in the design and implementation of AI technologies?
3. How can wisdom be integrated into AI systems to promote fairness, transparency, and accountability in decision-making processes?
4. How can we define and measure wisdom in the context of AI systems and decision-making processes?
5. How can individuals and organizations be proactive in cultivating wisdom in their interactions with AI, and what strategies can be implemented to ensure responsible use and accountability?

7. Data collection

Qualitative research, with its nuanced approach to understanding human behavior and social phenomena, demands meticulous methods for data analysis. Among the repertoire of techniques available, the Saldaña method stands out for its structured yet flexible coding processes, developed by Johnny Saldaña, a luminary in qualitative research. This method, known for its wide applicability across diverse research settings, involves a series of sequential steps designed to transform raw data into insightful conclusions. The following schema offers a simplified overview of this approach, tailored to provide clarity and direction

for researchers embarking on qualitative analysis.
The Saldaña method begins with data collection, where researchers gather information through interviews, focus groups, observations, or document reviews. This foundational step feeds into the first cycle of coding, where data are segmented and labeled to capture the essence of the information. This includes Descriptive Coding, In Vivo Coding, Process Coding, and Initial Coding, each contributing to a granular understanding of the data. The second cycle of coding refines these insights, using Pattern Coding, Focused Coding, and Axial Coding to identify and relate major themes. Subsequent steps such as Data Condensation and Data Display allow for the distillation and visual representation of the data, aiding in the synthesis of information. The process culminates in the drawing of conclusions and verification of findings, ensuring robustness through techniques like member checking. Finally, reporting encapsulates the research in a structured format, aligning findings with theoretical frameworks and discussing broader implications. Through this method, researchers can systematically dissect complex qualitative data, paving the way for significant contributions to knowledge and practice.

Because qualitative research takes a complex approach to understanding social phenomena and human behavior, careful data analysis techniques are needed. The Saldaña method, created by renowned qualitative researcher Johnny Saldaña, is notable for its methodical yet adaptable coding procedures among the various techniques accessible. This approach, which is well-known for being broadly applicable in a variety of research contexts, consists of a collection of sequential procedures meant to convert unprocessed data into meaningful findings. A simplified overview of this methodology is provided in the schema below, which is intended to give researchers starting a qualitative study some guidance and clarity.

The first step of the Saldaña technique is data gathering, when researchers engage focus groups, observations, interviews, and document reviews to obtain information. This preliminary phase feeds into the initial coding cycle, in which data are labeled and segmented to extract the most important information. The previous techniques—Descriptive Coding, In Vivo Coding, Process Coding, and Initial Coding—all aid in providing an accurate understanding of the data. By identifying and connecting the main themes through the use of Pattern Coding, Focused Coding, and Axial Coding, the second coding cycle improves upon these discoveries. Information synthesis is aided by subsequent procedures like data condensation and data display, which enable the data to be presented graphically and reduced (Saldaña, 2015).

At the end of the process, conclusions are drawn, and findings are verified, and robustness is ensured using methods like member checking. The research is finally summarized in a systematic manner in the report, which also discusses the wider ramifications and matches the results with theoretical frameworks. This approach enables scholars to methodically analyze intricate qualitative data, opening the way to important advances in both theory and practice.
A schema for qualitative analysis using the Saldaña method can be broken down into several steps. Johnny Saldaña, an influential figure in qualitative research, developed coding methods that are widely used in analyzing qualitative data. Here's a simplified schema based on his approach:

- Data Collection
  Collect qualitative data through interviews, focus groups, observations, or document reviews.
- First Cycle Coding
  Descriptive Coding: Assign labels to data segments to summarize the basic topic of a passage.

In Vivo Coding: Use the participants' own language to code the data.
Process Coding: Use gerunds to denote observable and conceptual actions.
Initial Coding: Open coding to begin breaking down the data into discrete parts, closely examining similarities and differences.

- Second Cycle Coding
  Pattern Coding: Group first cycle codes into a smaller number of sets, themes, or constructs.
  Focused Coding: Narrow down to the most significant initial codes to develop major themes and constructs.
  Axial Coding: Relate codes to each other, via a combination of inductive and deductive thinking.
- Data Condensation
  Reduce the volume of data by summarizing and abstracting it while retaining the essence.
- Data Display
  Create visual displays like matrices, charts, graphs, or tables to organize and present the data in a comprehensive way.
- Conclusion Drawing and Verification
  Interpret the data, identifying meaningful patterns and insights.
  Verify findings through further methodological approaches like member checking, peer review, or revisiting the data.
- Reporting
  Present the findings in a structured format, aligning them with research questions and literature, while also discussing limitations and implications.
  Each of these steps helps in systematically breaking down complex qualitative data into understandable, insightful conclusions that can guide further research or practical applications.

Table 1. Interview answers coding

Detailed Answers with Expert Identification	**Main Ideas**	**Themes**
- "Wisdom plays a crucial role in guiding ethical decision-making when developing AI technologies mainly because it prioritizes human values, morals, and the potential consequences of our actions over plain results." (Expert 1) - "Wisdom can play a crucial role in guiding ethical decision-making by considering the consequences of building super intelligent AI systems, the risks related to AI handling autonomous tasks and by establishing an organisation that sets rules for developing AI systems to avoid any misuse or any deviation of AI systems." (Expert 4)	Integration of wisdom in AI Ethics in decision-making 3. Consideration of human values	**Ethical Decision-Making**
- "Some of the ethical problems that can be found while developing AI systems include AI bias and equity and responsibility, and job displacement due to automation."	AI bias and equity Accountability in AI systems	**AI Technology Development**
(Expert 1)	3. Impact of AI on employment	**Challenges**
- "Wisdom is an important factor playing a crucial role in an individual's character. Personal traits shape one's approach and purpose in utilizing tools. Wisdom also plays a role in identifying key areas that need development and directing all efforts towards noble causes and the ultimate goal in the lives of humanity as a whole." (Expert 2)	1. Role of personal traits in AI usage 2. Development directed by human values	**Human Values in AI**

- "Wisdom also plays a role in identifying key areas that need development and directing all efforts towards noble causes and the ultimate goal in the lives of humanity." (Expert 2)	1. Directing AI development towards ethical purposes Aiming for humanity's ultimate goals	**AI Ethical Purposes**
- "AI systems are supposed to achieve balance, anticipate outcomes and consequences, and ensure that industrial progress does not encroach on ethics and values." (Expert 3) - "Advanced AI systems can easily do simple tasks (repetitive tasks as well). This can affect the job market	1. Balancing ethical considerations in AI systems 2. Anticipating outcomes and consequences Impact of automation on job	**AI Systems and Ethics**
- and can cause job displacement. For example, clerical tasks can easily be done using a specialised AI programme which may push firms and companies to prioritise developing this kind of a system instead of hiring experts for the job." (Expert 1)	4. displacement	
- - "The risks related to AI handling autonomous tasks." (Expert 4)	Managing autonomous tasks 5. Establishing guidelines to prevent misuse	**Risks of Super-intelligent AI**
- "AI systems should be open-source to avoid having any organisation controlling AI (especially with the race towards AGI). By having transparent and open-source algorithms and establishing guidelines and perhaps rules in developing AI systems and by insuring having human control in the development process." (Expert 4)	1. Promoting open source to prevent monopolies Managing the race towards AGI	**Open-source AI and AGI Control**
- "Integrating wisdom in an AI system if it is possible at all would require a lot more effort than anything else while developing an AI especially if we want it to promote	1. Efforts required for integrating wisdom	**AI Wisdom Integration**
fairness transparency and accountability." (Expert 1)	2. Promoting fairness, transparency and accountability	
- "Here lies the primary and essential capability of wisdom in the AI system, where experience can be defined in the informational system with a vast database." (Expert 2)	1. Decision-making based on extensive databases Essential capabilities of wisdom in AI	**AI Decision-making Systems**
- "It is better to build AI systems from the ground up on foundational principles rather than merely as auxiliary and supportive systems." (Expert 3)	Building on solid principles Encouraging evolution through continuous feedback	**AI Foundational Principles**
- "There must be transparency in dealing with AI systems and clear accountability to avoid future problems." (Expert 3)	1. Ensuring operational transparency Importance of human oversight in AI development	**AI Transparency and Supervision**

8. Discussion:

The concept of this interview is summurized as,

-- The "Responsible AI Framework" emphasizes a holistic approach to AI development, where ethical considerations are embedded at every stage, from conception through deployment and operational use. By adhering to this framework, stakeholders can ensure that AI technologies are developed responsibly, with a clear focus on enhancing societal well-being and respecting human dignity. This theoretical approach aims to bridge the gap between rapid technological advancements and the slower pace of ethical norm development, ensuring that AI serves humanity's best interests.

9. Conclusion:

The study on wisdom and artificial intelligence has illuminated the critical role of wisdom in guiding ethical decision-making and promoting responsible AI governance. Through qualitative interviews with experts in AI ethics, philosophy, and technology development, key insights have been gathered on the integration of wisdom into AI systems to enhance integrity. The findings of this study underscore the complexity and significance of ethical considerations in AI technology, as well as the opportunities and challenges in leveraging wisdom to address these concerns. By examining the ethical dilemmas and challenges that arise from the increasing use of AI across various sectors, the study has highlighted the urgent need for ethical frameworks and guidance that prioritize human values and societal well-being. Moving forward, fostering a culture of ethical decision-making and integrating wisdom into AI design and deployment processes are essential steps in ensuring that AI technologies align with ethical principles and serve the greater good. Collaboration among stakeholders, including ethicists, technologists, policymakers, and end-users, will be crucial in shaping an ethical framework for AI that embodies wisdom and promotes responsible innovation.

In conclusion, this study contributes valuable insights to the ongoing dialogue on ethical AI governance and offers recommendations for promoting ethical AI practices that prioritize human values and ethical considerations. By aligning wisdom with artificial intelligence, we can pave the way for a future where AI technologies contribute to a more ethical, equitable, and sustainable society.

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