Global AI
ETHICS INSTITUTE

GLOBAL TRENDS IN AI 2022

FOOD FOR THOUGHT FROM GAIEI EXPERTS

Notes n° 1

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About the Global AI Ethics Institute

The Global AI Ethics Institute (GAIEI) is a semicolon between cultures, not a full stop after one of them.

We are the first real international and transcultural forum for people passionate about ethics applied to artificial intelligence (AI).

Our main goal is to raise awareness on the importance on culture in the ethical appraisal of AI.

The GAIEI is a unique forum in which cultural diversity can be fully and openly expressed with regard to ethics applied to AI, and the only global think tank addressing ethics applied to AI through cultural lenses.

We promote:

- Outside the Box Thinking: Brand new ideas and initiatives are key to build a strong and fair global governance system for AI. We want to open the debate on ethics applied to AI to new perspectives.
- Open-Mindedness: Cultural diversity must be respected. Differences in standpoints on ethics applied to AI must be given the importance they deserve. We offer an open-minded and non-judgmental forum where all voices are listened.
- Return To Philosophy: Ethics is a branch of philosophy, consequently ethics applied to AI cannot be addressed without philosophical knowledge.

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Foreword

AI: An Unidentified Technical Object

From discrimination related concerns, to geopolitics, to legal and ethical issues, to governance, and sustainability, artificial intelligence AI is a wide topic to explore.

Often mythicized, AI is hardly understood in its intricacy and addressed through polarized stances opposing technophobes and technophiles. Looking closely at AI, it appears that it is an UTO, an unidentified technical object shaped by narratives. These narratives are profoundly influenced by normative considerations regarding its ethical (un)acceptability, considerations themselves based on biased assumptions, narratives, and (mis)perceptions.

It is obviously difficult, if not impossible to sort things out in such a complex setting, where vested interests coexist with idealistic perspectives; where the play of geopolitics interferes with local activities; where the quest for governance faces the reluctance toward constraining instruments, where some philosophical stances are ignored while other are strongly spread; where concerns regarding technology must be looked at against other pressing issues such as climate change; where norms are unclear and insufficient.

This collection of opinion pieces, written by 13 experts of the Global AI Ethics Institute (GAIEI) representing 11 countries, will not provide you with any truth, or silver bullet explanations. It humbly aims at offering some perspectives that might enrich the debate over AI and some of its ethical dimensions.

Building on the variety of experiences and knowledge of its experts, the Global AI ethics Institute's main goal is to foster open-minded discussions and enlarge them to non-specialists.

We hope, you will enjoy our experts' food-for-thought contributions, and that you will join the debate over ethics applied to AI.

Aco Mocilovic and Emmanuel R. Goffi
Co-Founders and Co-Directors

Liability and AI: 2022 perspectives on EU directive 85/374/EEC

By Dr **Thiago Felipe Avanci**

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Strict liability and AI on EU directive 85/374/EEC

In the legal field, there are lots going on concerning AI. In Europe, for instance, on January 10th, was closed a public survey on tech and AI concerning liability, especially over the directive 85/374/EEC. What is liability? And why should, for instance, a company that offers an AI service supposedly for free get liability for any problem?

In the Civil Law system, liability is the legal determination that aims to set right the damages caused directly or indirectly by one's actions or omissions. And the damages can be material or non-material. The purpose of the compensation is to reestablish one's patrimonial level previously to the damage. With this in mind, it is possible to identify two key elements: damages, and action or omission which have caused the damages; connecting those two elements, there is a causal relationship that sustains one's liability duty.

It is very interesting to realize that even for artificial intelligence supposedly free services, there is a liability. First, keep in mind that there are no free services at all. When one uses Google search, for instance, apparently for free, one is agreeing to share the personal data, appropriating the search engine, and also receiving personal publicity related: "quid pro quo, Clarice". Also, in this example, Google receives lots of incoming publicity. Considering integral risk theory adopted in some legal systems, the assumption shall be: if the company gets profit, should also get responsibility for the loss.

Otherwise, the companies would only grab the profits and transmit to the consumers their loss. In economy language: internalizing profits, costs externalizing. It is

inevitable to establish a parallel if the "Tragedy of the Commons" was proposed by Garrett Hardin.

It is important to realize that AI can cause several kinds of liabilities: self-driving cars, defects in manufacturing goods, data leaking, society behavioral due algorithm bubbles, among others. Considering this, even considering, as mentioned, that many applications of AI would not charge the user by the direct usage, the companies still would be strictly responsible for the damages inflicted on the users and on the collectivity.

The directive 85/374/EEC also mentioned this aspect: strict liability. This is the same usually already applied to the consumer's relations and would be used as the base on the relation born from AI. It means that one damaged by the defect of an AI, would not need to prove anything but the damage per se and to establish the causal relationship with the AI. It would not be mandatory, although, to prove, for instance, misuse or mistake of the coding from the company, or anything likely.

"For now, it is still on the science fiction field any possibility of liability of the AI, conjecturing that an ai would have, at some point, some level of self-conscience, self-awareness"

For now, it is still on the science fiction field any possibility of liability of the AI, conjecturing that an AI would have, at some point, some level of self-conscience, self-awareness. It is very unlikely, at least in the year 2022, to have a defendant, "the Architect", "HAL" or "Skynet"...

Minimum damage, liability period on AI and EU directive 85/374/EEC

Another topic discussed on the directive 85/374/EEC survey was that injured parties can claim compensation for death, personal injury, as well as property damage if the property is intended for private use and the damage exceeds EUR 500. Some national authorities of EU are now expressing a certain preference for reducing, or even removing, the threshold to guarantee more effective consumer protection. As regards

the parties concerned, the representatives of the industry believe that the current threshold should at least be maintained to establish the compensation for strict liability from a given level of damage and to avoid a pile-up of claims for minor material damage, those filed against small and medium-sized enterprises. Furthermore, they believe that this threshold should be raised to match it to inflation. Consumer representatives are calling for the threshold to be removed to allow compensation for all material damage sustained.

Finally, there is a debate on the possibility of freeing the producer from liability 10 years after the date the product was put into circulation. As so, Member States of the EU should provide in their legislation that the rights conferred upon the injured person pursuant to this Directive shall be extinguished upon the expiry of a period of 10 years from the date on which the producer put into circulation the actual product which caused the damage, unless the injured person has in the meantime instituted proceedings against the producer.

* *

This public survey sets a fantastic opportunity for the EU to improve their legislation, considering peoples' opinions on this new - AI - matter. On the good side, the EU is already seeing AI as a product, therefore, with consumer rights properly considered to be applied for its relations. However, the question remains: would the EU endure all the techs companies' pressures, delivering an optimal AI liability law? Time will tell.

Artificial Intelligence and Algorithmic Discrimination

By Prof **Paulo Campanha**

Expert Member of the Global AI Ethics Institute | Lawyer, Consultant and Researcher, Brazil

Technology has been contributing with great advances in society, such as in economic, financial, educational, health, judicial system, and other areas. The World Wide Web changed relations, and never in the past had so much data circulating. This situation, with the reduction of software costs, has contributed to advances in its analysis and prediction. We live in what is called the "Big Data Era", with its advantages and challenges, such as Algorithmic Discrimination, in the context of Artificial Intelligence (AI).

Artificial Intelligence

AI may be analyzed in four waves. First, Internet, and second, business, that are remodeling the world. The third is the perception, where the physical world is becoming a digital one, and the fourth, is autonomous, which is in exponential growth, and not so long we will have vehicles, drones, factories, robots, and other autonomous ways (Lee, 2019).

The PricewaterhouseCoopers (PwC) estimates that $15.7 trillion could be the increment in the global economy in 2030, by the AI, and this represents 14% higher than 2017. The perspective is that China and North America will be the regions with more gains (Rao; Verweij, 2017). In this context, there are the "Giants of the AI", the Big Nine: in the United States of America (USA), Google, Amazon, Apple, IBM, Microsoft e Facebook; and, in China, Baidu, Alibaba, and Tencent (Webb, 2020).

This numbers above show how the business world will be engaged to use the AI in everything, such as profiling the consumers to optimize the sale of products, as well as the relation with them own consumers and the laborers, contracting and firing them, by the algorithm. Furthermore, the application of AI is used in the judicial and penitentiary systems.

"We live in what is called the "big data era", with its advantages and challenges, such as algorithmic discrimination, in the context of the artificial intelligence (AI)"

Algorithmic discrimination

In general, AI is an algorithmic creation with a specific goal, with the input of data that generates an outcome. Inside the AI, there are machine learning and deep learning, that part of them may be also part of Data Science, which is not the focus of this essay.

The proposed reflection is to think about how this is dangerous in society, especially when do not have the transparency of the mathematical models of the algorithms that has being used in different ways. For instance, there is the polemic case in Netherland, that four drivers alleged that were dismissed by Uber using an algorithm. (Wernink, 2020). The other case was detected in the USA, where 46 states were using a computer program that labeled black defendants a "high risk" twice more than the white ones (Mesa, 2021).

Situations like that prove how is necessary a protection law at all levels with an effective accountability system. Nevertheless, ethics will have a fundamental role to prevent and to change situations like that. Obviously, this perception is not the same in the world, because it is multicultural with a different views. Each people have their tradition and understanding of what is right and wrong.

* *

These short lines had the purpose to reflect the use of the algorithm, mainly with unknown mathematical models. The use of AI has limits. The identified discrimination

in the examples above proves how it is necessary to discuss ethics from a multicultural perspective, to prevent and protect the people around the world.

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Artificial Intelligence in 2022

By Dr **Jean Garcia Periche**

Executive Board Member of the Global AI Ethics Institute | Co-Founder, Chief Government Officer, GENIA Latinoamérica, Dominican Republic

Artificial Intelligence in 2022

The year 2022 will undoubtedly see greater expansion of artificial intelligence in society. As the world starts to recover from the sanitary and economic devastation of the COVID-19 pandemic, increasing digitalization will further the application and implementation of machine learning-based systems all across industries and sectors. Governments and businesses alike are increasingly comprehending the centrality of artificial intelligence in achieving their desired goals and objectives. Moreover, the global discussion on the ethical implications that result from the adoption of intelligent systems and cognitive technologies will become more widespread.

As countries and regions start to adopt different standards and consolidate the discussion on the governance of artificial intelligence, I expect a larger number of countries to join the debate and articulate their own narratives into the conversation. In particular, emerging economies in the Global South must initiate meaningful actions to ensure that they develop local ecosystems that can scale regionally and globally.

Moreover, as new generations begin to exercise greater roles of leadership and formal authority in society, I expect the issue of Artificial Intelligence development, implementation, and governance to be more prominent across regions. There is no doubt that this technology is becoming a critical piece of social and economic infrastructure, and as digital natives come to power in their respective organizations and societies, the political implications of Artificial Intelligence will only become more evident.

Geopolitics of artificial intelligence

Artificial Intelligence is projected to add more than sixteen percent (16%) to global GDP by the year 2030, which is equivalent to $15.7 trillion US dollars, making this technology "the world's biggest commercial opportunity". Moreover, the social and political implications of artificial intelligence will only tend to exacerbate the urgency of state actors to increase funding in search of technological sovereignty, and in some cases, technological supremacy.

In this regard, the governance of emerging technologies will be in the global restructuring of the world order in the post-COVID reconfiguration. Just as For that reason, the geopolitical dispute between the United States and China has an intrinsic technological vector. It is common knowledge that the country that tops the technology conflict will also be the country that tops the political conflict. The countries that lead the deployment of artificial intelligence-enabled technologies will be the ones that will get to decide the institutional architecture regarding the global governance of the Fourth Industrial Revolution (4IR). COVD-19 has been a wake-up call to the multilateral system, which is currently suffering from the dire threats of populism and extreme nationalism, and as the world comes to face the reality of climate change, the governance of emerging technologies will also become a hot topic as one of the most relevant issues regarding global governance.

"As countries and regions start to adopt different standards and consolidate the discussion on the governance of artificial intelligence, I expect a larger number of countries to join the debate and articulate their own narratives into the conversation"

Latin America

In Latin America, there is still a lacking state of consciousness when it comes to artificial intelligence governance, implementation, and deployment. As the rest of the world rapidly acknowledges the centrality of AI in governing the future of humanity, Latin America struggles in coming to terms with a compelling narrative that can leverage the power of computer intelligence.

Although there is a growing number of tech unicorns in the region, AI implementation projects are often small-scale and rarely transcend the pilot stage. The massive AI-driven disruptions in society will create deep structural changes in the economy. If Latin America does not move fast, it may risk falling into irrelevance. While AI advances at exponential rates, LATAM's power structures remain vertically driven and highly inefficient.

A fundamental element to note is that national initiatives are necessary, but not sufficient. Without unifying criteria and standardizing frameworks, no single coun- try in Latin America can become an AI leader by itself. Latin America needs regional cohesion and a sound level of political unity. In this decade, the region needs to build a strong international coalition around a Regional AI Strategy to integrate this technology as an essential tool for leapfrogging into a new stage of development.

* *

In this sense, I am optimistic about the newly formed "Alliance for Development in Democracy" by the governments of Costa Rica, Panama, and the Dominican Republic. Being middle-income countries and stable democracies in a region plagued by poverty and political instability, this Alliance serves as a platform for Latin America to deepen regional integration in the area of artificial intelligence and other emerging technologies. In the year 2022, I expect these countries to start drafting the first regional AI strategy in Latin America and lead the path towards a truly Latin American AI ecosystem.

Is 2022 the year that AI ethics takes sustainability seriously?

By Dr **Joshua Gellers**

Expert Member of the Global AI Ethics Institute | Associate Professor, University of North Florida and Research Fellow, Earth System Governance Project, United States of America

The field of artificial intelligence (AI) ethics has rightly been concerned with how automated systems negatively affect people, especially those from vulnerable and minoritized communities. Shocking examples of biased algorithms, invasions of digital privacy, and technological surveillance serve as cases in point. These kinds of abuses have led to high-level policy discussions, dozens of corporate AI ethics guidelines, and substantial empirical and theoretical scholarship examining the real and potential harms that AI poses for humans. But in the process of trying to identify and curtail unethical uses of AI, corporations and scholars alike have virtually ignored the impacts of AI on the environment and the relationship between AI and the pursuit of sustainable development. Thanks to the efforts of a small but increasing group of researchers, the tide is beginning to turn. But much more needs to be done if we want to direct AI towards noble causes like protecting the planet, addressing climate change, and achieving the UN Sustainable Development Goals (SDGs).

AI ethics and the environment: a case of curious neglect

Jobin and others report that only 13% of a large sample of AI ethics principles mention sustainability. Further analysis by Owe and Baum indicates that only 6% of these principles directly value the environment in its own right. In the AI ethics literature, a mere handful of manuscripts (some unpublished) examine the environmental implications of AI. Much of the recent work on the ethical dimensions of AI utilize

human-centered analyses or advocate for a human rights-based framework for AI governance. Nature and sustainability are almost entirely absent from the equation.

However, some analysts have begun to explore the ways in which AI interfaces with the SDGs. For instance, notable works by Vinuesa et al. and Sætra probe the ways in which AI might contribute to the massive societal project that is the Global Goals. These are welcome interventions that the AI ethics community would be wise to build upon, especially since the current sustainable development agenda is scheduled to run through 2030.

By contrast, the fields of environmental politics and environmental sociology have paid comparatively more attention to these concerns. Books such as *AI in the Wild*, *Artificial Intelligence and the Environmental Crisis*, and *Ecology, Artificial Intelligence, and Virtual Reality* approach the promises and perils of AI with a critical eye, wary of the hidden environmental costs of rapid technological deployment. Such findings place front and center the environmental challenges that AI poses.

International law on AI: a new hope

Although international law on AI remains in its infancy, a couple recent developments suggest that the regulatory ecosystem surrounding this technology may be more forward-thinking than either organizations or the AI ethics literature. First, the European Commission's High-Level Expert Group on Artificial Intelligence affords pride of place to sustainability in its report on Ethics Guidelines for Trustworthy AI. Specifically, chapter 2 includes a section on "societal and environmental well-being" that recognizes "other sentient beings and the environment" as stakeholders in the creation of AI systems and encourages "[s]ustainability and ecological responsibility." The report also emphasizes that AI research should be oriented towards contributing to global initiatives like the SDGs.

Second, UNESCO's Recommendation on the Ethics of Artificial Intelligence, hailed as the "first ever global agreement on the Ethics of AI," devotes three articles to environmental issues. Article 17 encourages using AI to promote "[e]nvironmental and ecosystem flourishing … for humanity and other living beings," while article 18 highlights the importance of limiting the carbon footprint and exploitation of natural

resources associated with the life cycle of AI systems. Article 31 mentions the need to assess the "environmental impact of AI technologies" in the context of global objectives related to sustainability, such as the SDGs. Although the document does not go into great detail as to how the environmental impact should be assessed or how policymakers might balance the benefits of AI with its environmental consequences, this agreement opens the door for further discussion about how the international community might integrate sustainability imperatives into regulatory regimes related to AI.

These supranational and international instruments signal a growing awareness of the linkages between AI and the environment and their relevance to the SDGs. Further mainstreaming of environmental imperatives into AI regulatory schemes will be necessary in order to translate these aspirations into action. Soft law declarations should culminate in the promulgation of environmentally-sensitive AI policies at multiple levels of governance.

"Much of the recent work on the ethical dimensions of AI utilize human-centered analyses or advocate for a human rights-based framework for AI governance. Nature and sustainability are almost entirely absent from the equation"

Towards a greener AI

While many AI ethicists have raced forward to demand AI that advances human interests and safeguards human rights, these calls only serve to reify the very anthropocentrism that has resulted in the current climate crisis. A minor chorus of voices (i.e. Bossert and Hagendorff; Owe and Baum; Ziesche) has begun to sound the alarm about the need to widen the scope of AI ethics to include considerations for non-human animals. Expansions of this kind are crucial to the task of eliminating blind spots in the field that have placed humans alone at the center of the moral universe.

At the same time, we must accept the special responsibility that humans have in determining how to use technology in ways that do not threaten the living and non-living worlds or our collective futures. We ignore the roles played by power and profit

at our own (and the planet's) peril. As Dauvergne warns, "artificial intelligence is never going to produce a sustainability revolution within the contemporary global order" and it "has no capacity to overthrow the entrenched interests that are exploiting people and nature." The only way to protect the Earth and all its inhabitants from the worst consequences of widespread AI adoption is to move beyond an exclusively human-centric mindset. A greener AI ethics must transition away from notions of justice that privilege humans above all else to a justice that is planetary in scope. Let 2022 be the year that this necessary movement begins in earnest.

AI Ethics Universalism and its Risks

By Dr **Emmanuel R. Goffi**

Co-Founder and co-Director of the Global AI Ethics Institute

The race for artificial intelligence (AI) supremacy has inevitably led to the need for regulation. During the past years, the quest for a global code of ethics has been deeply influenced by a universalist perspective coming from Western actors (public and private).

This universalist perspective holds that there exist universal values on which a "universal ethics" can be built. From this universal ethics could stem a set of universal principles framing the design, development, and use of AI systems.

This perspective has become ideological in a way that it is not even questioned, and that any attempt to investigate it and discuss the relevance and legitimacy of such a stance is instantly labelled as relativistic and deemed "unethical". Any relativist perspective is then almost impossible to support, killing any possible debate between divergent viewpoints, and increasing the risks of cultural tyranny and absolutism, and consequently of tensions between AI powers.

A strong misleading narrative

We all know the power of words and we are all aware of their use in different fields, politics being the most illustrative one. Communication is not important; it is essential. Notably when it comes to influencing some actors and making them behave in a very specific way.

The field of artificial intelligence is no exception. And the stakes are high enough for some actors to consider using narrative as a tool to create artificial trust and thus, make sure that people will no longer be too reluctant to purchase and use AI systems.

To that end, the vocabulary of ethics has been largely summoned to instill some trust in the mind of the most skeptical.

The European Union (EU) has been doing quite an impressive work in this domain. It can even be said that almost all the narrative about so-called "AI ethics" has been set in Europe.

This narrative has been widely adopted to the point were most codes of ethics relating to AI are made of the same wording, concepts, and principles, referring to a set of supposedly common values such as privacy, human rights, non-discrimination, transparency and so on. Weirdly these values and principles can be found either in codes established by countries where they are or not (or at best partially) applied.

The tip of the iceberg

Interestingly, while we feel satisfied with the spread of some supposedly universal values and their adoption, one can see that some tensions over those same values are already at play between different actors, may they be private or public. The current concern regarding the GAFAM expressed by the EU, or the European fear towards Chinese tech companies, is really not aligned with the naïve self-satisfaction regarding the adoption of the Recommendation on the Ethics of Artificial Intelligence adopted by the UNESCO on November 2021.

So far, we, in the EU have been pretending not to see the huge gap between reassuring discourses emphasizing the setting of universal ethical rules framing AI, and the competition, and in some cases the struggle, over artificial intelligence and the power it can bring to whoever would lead in the field.

At odds with the soporific discourses on universal values, the EU is setting a digital sovereignty policy asserting that Europeans need "safe technologies that work for people, and that respect our rights and values". Paradoxical, at least at first sight.

Political discourses must not be confused with analytical reasoning. Their goal is to convince, through rhetorical contrivance.

Looking closer at the apparent universal agreement over ethical principles that should apply to AI, one can discover that under quiet waters, the struggle for AI power is tenacious. International recommendations are nothing else than a calculated show of goodwill aiming at soothing concerns. They are not representatives of the stances of actors who have strong vested interests in developing, marketing, and using AI systems deemed ethically unacceptable by some. They are the expression of a strategy, not of a deep conviction.

If the tip of the iceberg is made of comforting mainstream speeches about the need to frame the development and use of AI "for the benefit of humanity", the larger hidden part of it is made of harsh competition for power. Far from publicized guidelines and other recommendations, standards are the field of this battle for normative supremacy.

"Looking closer at the apparent universal agreement over ethical principles that should apply to AI, one can discover that under quiet waters, the struggle for ai power is tenacious"

The struggle to come

As stated in a recent report on *The geopolitics of digital standards*, "[i]n addition to their technical functions, standards have economic, social, and (geo)political implications." Organizations such as the International Organization for Standardization (ISO); the Institute of Electrical and Electronics Engineers (IEEE); the Institute of Electrical and Electronics Engineers (IEEE), to mention but the most famous, are the place for international competition. As developed in the report, China's play is certainly the best illustration of the importance given to standards in the race for economic and technological leadership. Other dominating players such as the United States of America, the United Kingdom, Germany, France, or Japan are struggling to keep or reinforce their influences in standardization organizations and to

face China's *Standards 2035* ambitious plan. Norms are power. So are technical standards.

If narratives are meant to be reassuring, a closest look at the AI governance process seems to show that the quest for universal ethical norms is a challenging strategy. The coming months will certainly accentuate existing competition and tensions at the international level over AI dominance. Current diplomatic tensions between the two major actors that are China and the US, will be exacerbated by the will to establish an AI supremacy.

The EU's cultural proselytism will also face some reluctances from countries with different agendas and different ethical perspectives, if any. Will China, in its quest for AI leadership, accept to be constrained by principles and values it does not agree with? Will India accept being constrained by Western ethical perspective? Will the Middle East submit to European and north American values? Nothing less sure.

Apart from the cultural dimension of this struggle over normative AI governance, geopolitical and economic setting will shape the "ethics" of AI in countries were there is no room and no time for philosophical discussions. Many places around the world are living under neighbours' threats, environmental risks, poverty, hunger, different form of violence. People in this unfavorable, to say the least, settings will not care about non-discrimination, privacy, transparency, accountability, or any other principles coming from spoiled countries that have time and resources to philosophize about the ins and outs of AI. They will have to make quick decision to survive and get their share of the AI godsend. Their ethical horizon will not be individual wellbeing and self-satisfaction, but survival in a hostile environment.

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Trying to impose universal standards is doomed to failure. The cure might even be worse than the disease. Denying the reality while chasing the clouds of some kind of Western happiness, would inevitably lead to more and more tensions and fights. Resistances will emerge, notably towards exogenous values that does not fit with endogenous cultures.

The year to come will undoubtedly see a stronger attempt to impose a set of universal ethical rules through reinforced narratives using the vocabulary of ethics without doing ethics. The Western cultural bias regarding AI ethics will not be questioned, while the West will keep condemning biases. Meanwhile, stakeholders will keep on fighting each other over norms and standards, while adopting international recommendations and guidelines that will barely be put into practices. Cosm-ethics will keep taking precedence over ethics. Confined to its unwavering convictions regarding right and wrong and its intellectual and philosophical superiority, the West will remain blind and deaf to divergent ethical perspectives.

Unless…

Strategies for Unleashing the Power of AI in 2022

By Dr **Manal Jalloul**

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Artificial intelligence, or AI, continues to impact every industry and improve people's lives with its ability to not only assess critical data and improve business efficiency, but also to create new products and services and help solve the world's most pressing problems. According to McKinsey's recent report, nearly two-thirds of respondents said that their companies investments in AI will continue to increase over the next three years. Sixty-one percent of respondents to a recent Deloitte Insights report say AI will substantially transform their industry in the next 3-5 years. AI increasing centrality to business processes, and even strategy, is no longer up for debate. However, according to Gartner, despite picking up speed, AI long-term trajectory depends on enterprises advancing their AI maturity which is still lagging behind. Therefore, there are important guidelines to be implemented to boost earnings from AI systems and essential considerations to be followed to mitigate AI-related risks.

Organizational AI-maturity is still lagging behind

Gartner forecasts global spending on artificial intelligence (AI) software to total $62.5 billion in 2022, up 21.3% from 2021. Gartner forecasts that the top five use case categories for AI software spending in 2022 will be knowledge management, virtual assistants, autonomous vehicles, digital workplace, and crowdsourced data. Demand for AI technologies and associated market growth is closely tied to organizational AI maturity levels. Enterprises continue to demonstrate a strong interest in AI, with 48% of CIOs in the 2022 Gartner CIO and Technology Executive Survey responding that they have already deployed or plan to deploy AI and machine learning technologies

within the next 12 months. The reality of AI deployment is much more limited. Gartner research found that organizations commonly experiment but struggle to make the technology a part of their standard operations. Technology immaturity is cited as a top reason among AI-investing organizations leading to failure when integrating an emerging technology. Furthermore, product leaders investing in AI whose implementations are progressing slower than expected reported product complexity and a lack of skills as the main hindrances to their progress. Gartner predicts that it will take until 2025 for half of organizations worldwide to reach what Gartner's AI maturity model describes as the "stabilization stage" of AI maturity or beyond.

Best practices for successful AI

McKinsey's most recent survey on the state of AI highlights the importance of best practices and how businesses can maximize its potential. According to the study, the adoption of AI continues to build; a full embrace of best practices is critical to high performance. MLOps (short for machine-learning operations, the term refers to best practices for the commercial use of AI) and cloud technologies emerge as critical differentiators. According to the research, cloud is a key enabler for MLOps. First, native to cloud environments are off-the-shelf tools, libraries, and frameworks that can speed up the AI model-development life cycle. Cloud also provides flexibility to ramp compute up and down as needed, which is especially useful for retraining models when necessary. Together, these survey findings indicate that the combination of MLOps, cloud, and applying other best practices provide a good foundation for capturing AI value at scale.

Importance of risk management in AI

The World Economic Forum highlighted that deploying AI at scale will remain problematic until companies engage in a fundamental change to become 'responsible AI'-driven organizations. Companies should embrace this transformation as trust in AI systems will be the defining factor to determine who is worth doing business with. According to McKinsey's survey on the state of AI, the highest performers are those

who are addressing risk management in AI. Some of the consequences of poor AI risk management is that it can perpetuate systematic discrimination and unfairness. Specifically, this can mean women not getting hired due to biased training data. People of color being denied employment, loan consideration, housing, and other benefits because the data is biased. According to Forbes, the AI framework that can ensure the ethical use of AI and sustain the trust of employees and customers includes six steps: fair and impartial use checks, implementing transparency and explainable AI, responsibility and accountability, putting proper security in place, monitoring for reliability, and safeguarding privacy. For Organizations to embrace and thrive in the age of AI, they must start by putting trust at the center. They must thoroughly assess whether their organization meets the criteria for trustworthy and ethical AI; it's a necessary step in increasing the returns and managing the risks that constitute the transformational promise of AI.

"Deploying AI at scale will remain problematic until companies engage in a fundamental change to become 'responsible AI'-driven organizations"

Shifting from model-centric to data-centric AI

There's growing attention in the research community on the importance of data in building AI systems. The first 2022 Technology Prediction by the IEEE Computer Society focuses on Data Centric – AI. Whilst the early approach to AI were focussing on processes-algorithms that could lead to intelligence, this technology prediction claims that we will see a shift from model to data, placing much more attention on data. The value of data and its impact on the quality of ML-based solutions have, for sure, been underestimated so far, but this is changing — in Andrew Ng's latest session, he covered the benefits of a bigger investment in data preparation with his team proving that investing in improving existing data quality is as effective as collecting triple the amount of data. *"Instead of focusing on the code, companies should focus on developing systematic engineering practices for improving data in ways that are reliable, efficient, and systematic. In other words, companies need to move from a model-centric approach to a data-centric approach,"* said Andrew Ng, the CEO and

Founder of LandingAI. From the infrastructure invested to have data collected, to the number of human resources dedicated to it, and how rare can be to have it collected in the ideal situations, makes data one of the most expensive assets nowadays.

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In summary, the role of AI as an enabler and key ingredient at leading organizations will continue to evolve in 2022. However, to fully unleash the disruptive power of AI in the coming year and achieve AI-maturity, it is critical for enterprises to invest in building the infrastructure that will allow to mass produce and scale AI projects. The data that models are using need to be monitored, as well as the quality of the data going in and out of the models and their level of performance. This requires a data infrastructure, governance, risk practices, and systems.

Time in AI to reflect on what has been done, and prepare for becoming even greater geopolitical factor

By **Aco Momcilovic**

Co-Founder and co-Director of the Global AI Ethics Institute

General expectation

In this year I am expecting two seemingly opposite trends In AI industry. On one side, we might be facing "AI Winter" with many promises and optimistic plans, facing their reality. Current technologies are allowing us just to go so far in the Holy Grail of AI – creating human level General AI. In a way we might be in the end of the hype cycle, which could have many good sides. On the other side, many companies and projects will benefit from the investments that poured in the AI field, because of the boosted attraction we were witnessing in the last few years. My expectation is that we will see many interesting advances in the specific fields and useful projects aiming to develop AI as a tool we could use to make our performance better. As one quote said – "AI will not replace humans, but humans who will be able to use AI as a support – probably will!"

Role of ethics

That pause in the qualitative jumps could allow us to focus and reflect on all the accomplishments we did so far, and those under development, and could give us time to take more holistic view of the projects. It is a great time to incorporate ethical perspectives and philosophy in the basics of AI development, which was, I feel, more technology driven so far. If we create good foundations now, it will be much easier to create Responsible AI in the future. Coming year(s) will be a great time and opportunity to raise awareness of the different dimensions and origins of cultural norms and ethics, that should be considered much more than they are today. And for that we need to have

bigger discussion and proactively involve some players/cultures/countries, that are marginalized at the moment.

"What we already now see, is how multicultural associations could be crucial in the knowledge exchange, and in the forming of equal opportunities for those countries that are now not on the front of the AI development"

My focus will be to also monitor AI development on the country level, with significant changes of AI related Human Capital development in which some countries are making tremendous advances. How will countries compete, and what will be the impact of current stage AI projects will be something important to monitor and based on that predict future changes and dangers we might be facing. Level of investments, more active role of governments, creation of new legal framework, role of academy, startup communities, all of those areas will need professionals with fresh ideas and new energy. Which countries can secure them, and which will drain resources from others in this competition? What will be other significant areas of development which will compete in the same war for talent? Those are only a few questions that we need to ask.

Synergies

All that activity will consequentially create new networks of AI connected people that will cooperate globally and internationally. At some point, question of AI global governance could be raised. AI might gain even important recognition as a factor in geopolitical arena. What we already now see, is how multicultural associations could be crucial in the knowledge exchange, and in the forming of equal opportunities for those countries that are now not on the front of the AI development. Connection between private sector, NGOs and professional organizations will gain additional importance and could be used as a distributor of knowledge and ideas across many current borders. The Global AI Ethics Institute is proud member of a few similar structures/organizations, such as Alliance for Responsible AI and International Group of AI. Already now we are sure that in this year, number of similar contacts will be even

greater. I would use this opportunity to invite all interested members to contact us and establish the first contact between our organizations.

The rise of genuine ethics for AI

By Dr **Enrico Panai**

Expert Member of the Global AI Ethics Institute | Founder of Be Ethical | Co-Founder of Ethiciens du numérique, Italy and France

In the coming years, we will experience the rise of a genuine ethics for AI as an external service. An ethics that can address the creation of an environment in which ethical reasoning enables the flourishing of digital artefacts and autonomous AI systems that preserve, cultivate, and enrich the well-being of the entire infosphere.

From ethics to genuine AI ethics

"In the coming years, we will experience the rise of a genuine ethics for ai as an external service"

Not that we do not talk about ethics today. On the contrary, the need for ethics in the AI sector is a daily refrain. There are many ethical guidelines on AI. Rare are the articles that do not mention the discipline (ethics), its adjective (ethical), or one of the principles that should characterise AI: (in alphabetical order) Accountability, Autonomy, Beneficence, Consent, Dignity, Fairness, Freedom, Justice, Non-maleficence, Privacy, Responsibility, Security, Solidarity, Sustainability, Transparency, Trust. Only it's not sufficient... there has to be more.

The limits of ethical reasoning begin to be perceived, mainly because there is a tendency to confuse law with ethics. Imagine that you are driving in a city centre, but you see children playing football on the roadside; the law tells you to respect the speed limit (let's say you have to drive your car at 50 km per hour), but ethical behaviour will advise you to reduce your speed to be more reactive in case of danger. Of course, at

high level ethics inspire the drafting of laws (in no city are drivers allowed to drive at 130 km/h), but at a lower level it guides individual behaviour to avoid an accident. Similarly, when developing and deploying autonomous AI systems, thought must be given to minimising risk, even when the risk is not regulated by law. Being 'compliant with' a standard or regulation is not sufficient… there has to be more.

The perception of this lack has sprouted communities of people concerned about ethical aspects and launched a market of AI ethicists, AI ethics students, AI ethics workshops, AI ethics journals, AI ethics committees, etc. Only it is not sufficient… there has to be more.

On closer inspection, what is missing in so much ethics is precisely ethics. The devil is in the details, they say, and so is the ethicist. The real ethicist (who has studied ethics) and the right one (who has studied information ethics, technology ethics, data ethics, robot ethics, AI ethics) is rare when dealing with ethical reasoning in a development team or in an ethics committee. Some people reduce ethics to their own personal views of good and evil. Some think that compliance with the law is a satisfactory (and sufficient) requisite for ethical behaviour. Some people think that it is sufficient to mention a list of ethical principles in the code of ethics to ensure ethical behaviour in their organisation (unaware that the polysemantic nature of such principles can have a counterproductive effect if the definitions are not clear to everyone). Ethics is more, and the ethicist is like an ancient Greek skipper, an Argonaut, who steers his sails to bring his crew safely to port. And like any sailor, it has its own language, without which it could not move on the boat or choose a direction.

The rise of ethics-as-a-service

For some, AI is a panacea with which we will solve an infinite number of problems. It is an absolute danger that will annihilate human work and autonomy for others. In between, those who have worked on a PhD in AI will never go around saying, 'Oh, yeah, I know the secrete to building human level AI', precisely because they have seen for years what can be done. However, everyone questions the necessity or the impacts that some systems may have on people's lives or some protected categories (children, women, ethnic minorities, etc.). This is the profound reason why ethics has come to the

fore so much in recent years with the growth of AI. Unlike previous technologies, AI has agency. Moreover, ethical problems arise when there are overlaps of AI systems, namely when they become multi-agent systems: they have a certain autonomy in making decisions or taking actions, without the responsibility being directly and unequivocally attributed to a specific layer of the system. This autonomy makes them different from other technologies and generates restlessness and uneasiness in humankind.

AI ethicists face more complex challenges than in the past. They must ensure that complex systems (multi-agent systems) without intention can act in an ethically acceptable manner. And since a machine, a robot or machine learning or an entire AI system cannot be held accountable for action. Ethicists must simultaneously oversee the consequences of the action, the distribution of responsibility, and the environment that produces, distributes, and monitors autonomous AI systems.

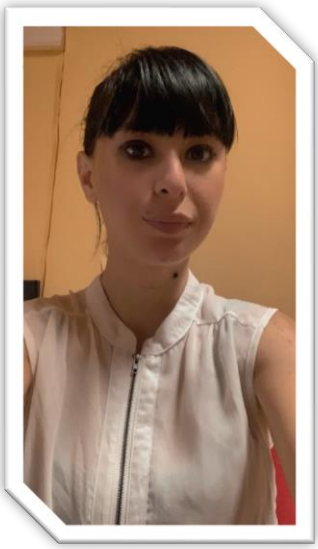
Ethics is therefore essential for AI, and the AI ethicist is the expert that deals with the adapted ethical tools (models, principles, theories, etc.). In the years to come, trained ethicists will increasingly intervene on different levels, from influencing standards and legislation to the internal organisation of companies, from drafting data ethics codes in support of ethics codes to training and coaching developers and data scientists.

* *

The challenge is complex, so every ethicist will be called upon to help, even those who do not have the right background. Even those who use different ethical macros than the author of this article. According to information ethics, all are welcome because the good is resilient and has a non-monotonic nature. In practice, even if the result of an inappropriate ethical choice had a negative effect, the good is resilient and tolerates mistakes well.

Yet, if time is not to be wasted, companies and organisations will increasingly need to rely on AI ethicists with the right (philosophical) training. And given the actual shortage of ethicists, more and more ethical services (training in ethical reasoning; independent multi-disciplinary ethics board; collaboratively developed codes of data ethics; ethics-based audits; external Chief AI ethics Officer etc.) will be outsourced.

Briefly, ethics-as-a-service, theorised in 2021, will increasingly be a service model adopted by the market in 2022.



The denied identities: Algocide of gender

By **Francesca Quaratino**

Executive Board Member of the Global AI Ethics Institute | Philosophical and Communication Sciences, Italy

The incessant development of technologies stimulates new reflections and opens up multiple debates. Algorithms predominate the world of complexity and intervene to synthesize the multiple. Like a Kantian I, but of matrix 4.0.

But it is only through the enhancement of the different and of the individual as such that existence finds reason for being, and in the era where simplification tends to standardize processes, and men, it is necessary to conduct a critical analysis on what are the real implications deriving from the use of technology, and it is necessary to eliminate any discriminatory obstacles. The algorithm risks eliminating the gender difference, removing individual identities, and putting in place a real "algocide" of gender. The research is aimed at overcoming this discrimination and enhancing the specific characteristics of the subject.

Can the machine protect diversity in gender as well in the next years?

What is the relationship between algorithmic learning and gender?

The relationship between AI and Subject is crossed by a multi-dimensional approach: robotics, ethics, psychology, philosophy, medicine, or engineering are interconnected because they work according to the bond that man establishes with machines.

Everything tends to automation, from business to cognitive precociousness, the simplification that comes from the use of algorithms sweetens our actions. On the other hand, if on the one hand, the automation of activities is in favor of man raises some

questions about how simplification is extremely harmful to the singularity and identity of the subjects.

Standardizing to optimize time and activity is a principle attributable to the machine society. Technique is synonymous with know-how, and know-how in the digital space means removing the obstacles of diversity; possessing different qualities or traits slows down the standardization processes of the technology because in order to carry out a quick calculation and store information it is necessary that the elements are simplified in order to be readable and recorded by the machine.

Disavowing subjectivity and fostering the presence of the universal, as Friedrich Nietzsche maintains, distances the man of truth because, Identity and Truth, travel on the same wagon.

"With the advent of technology emerges the need to rethink identity recognition"

Whether it is biology or cultural construction, gender issues span eras and centuries. Philosophically, but not only, reflection on identity has always been a very topical issue, and with the advent of technology emerges the need to rethink identity recognition.

There is no *absolute* identity in which we must categorically recognize ourselves; the universals of the feminine and masculine gender are nothing more than "cultural constructions" (Butler, 1990), and not pure essences as part of society often maintains. If identities are the result of a socio-cultural process and therefore subject to rethinking, even gender identifications, through Artificial Intelligence, need a level of accurate investigation and prevent multiplicity from ending up in oblivion.

Artificial Intelligence operates through the so-called learning algorithms: for humans the learning of language is "innate", thus allowing to learn in less time the grammatical structures and linguistic rules (Chomsky, 2006) and also for machine learning the functioning is similar.

"Human intelligence is not the only one to learn" even machines learn and do so by accepting the challenge of human complexity. However, as mentioned earlier, technology to work effectively and efficiently must simplify processes. The implementation of language and more general recognition is a delicate aspect. There

are vast identity combinations that the machine should learn in order to safeguard diversity.

The problem that emerges from the programming of algorithms is the ineffective identification, and protection, of the genre.

New paradigms and identities in the future

The paradigm of techno-science proper to the automation society seems to encounter problems in gender recognition, giving rise to the so-called *Biased Machine Learning* (Badaloni-Lisi, 2021). Cognitive bias – error of assessment resulting from prejudices – is in fact also manifested in algorithms. These algorithmic biases compromise the efficiency of applications as they could act in a discriminatory manner. Processing a considerable amount of data is a process that requires a high effort on the part of the machine, however it must be emphasized that the responsibility for "good" algorithmic functioning lies in the design process, this delicate phase for the development of an ethical Artificial Intelligence that does not harm the weakest (Coeckelbergh, 2020).

How will the use of artificial intelligence change on gender issues?

Research aimed at improving gender recognition try solving the ethical and moral dilemmas arising from the use of AI in the next years. Europe is also acting in this room for maneuver, which has published some recommendations on the use of AI. The objective of the document *Ethics guidelines for trustworthy AI* (2019) is to be able to structure and disseminate a correct and reliable artificial intelligence system that operates pursuing purposes in support of human autonomy and justice. For example, if a data-set used to train a facial recognition system is characterized by a majority of images of faces of white men, it is evident that the system will be able to more accurately recognize an image of a white man's face, rather than a woman (Badaloni-Lisi, 2021).

UNESCO is focusing attention on the interaction between AI and gender equality to ensure correct use of technologies. Numerous scholars, including Annette Zimmermann, argue that in the years to come there will be a “preventive and independent control that verifies what the problems may be raised by the use of artificial intelligence”.

Werner Vogels, CTO of Amazon, believes there will be multiple on which intelligence will make progress, perfecting the limitations of algorithms. The most relevant forecast concerns "It will accelerate the development of software supported by artificial intelligence".

According to this perspective, the working codes used by machine learning will be perfected and improved in every aspect. Furthermore, the development of new systems will inevitably improve what is not functional and this includes gender algorithms.

Such discrimination must necessarily be reviewed, and many systems used for facial recognition must be perfected. It is working in this direction, like the giant Google. A problem of incorrect gender distinction can be associated with the automatic translator (Google Translate) which is not perfectly capable of distinguishing the gender, falling into stereotypes and discrimination. The team the team is working to fix the problem and promises that there will be no such discrimination within the next few years.

* *

The road to be taken for algorithms to be fully ethical is uphill and most of the problems related to the spread of technology are unresolved, as in the case of the gender-algorithm binomial. What actions must be taken to prevent technology from overpowering man and erasing his identity in the future?

2022 will be a year of change for technological innovation.

A first conceivable step is the analysis and increase of data: by inserting more variables the chances that algorithms do not recognize specific cases decrease, thus acting in respect of diversity. The lack of enhancement of the genre in the AI field damages its extraordinary potential. Prejudices cannot be incurred, especially if such prejudices may compromise an individual's freedom. The issue of Artificial Intelligence and gender is therefore now at the attention of the international scientific community, only through new research and commitment can it be possible to remove these obstacles.

Need and Future of AI Governance in India

By **Siddartha Rayapudi**

Executive Board Member of the Global AI Ethics Institute | Regional Director at Leena AI, India

Observation

India as a country is undergoing a massive transformation strapped by 2 of explosive growth of technology drivers.

- Access to affordable compute power
- Access to cheap data

Government of India is heavily encouraging Indian tech and telecom giants such as Jio and many startups to use technology to drive commerce and encourage commerce from Tier 1 to Tier 2, Tier 3, and Tier 4 cities.

Resulting in the generation of vast volumes of consumer data that is being used to build and train smart technologies that is powered by AI.

Creating a smart system to serve citizens of a country like India is great how ever the diversity in data to be used to train AI systems is very high.

There are not very stringent laws in India for data governance, usage of consumer data for fair practices. Most regulatory standards that are optionally referred and equally optionally practiced are borrowed from Europe and USA.

Data compliance standards such as GDPR, HIPAA, CCPA are the only once out there that are remotely close to the optional adherence while processing and using consumer data. There are very few relative to nonexistent laws around ethical conundrums associated with fair usage of data and systems that are powered by data such as AI.

While consumerism is the primary driving factor contributing to the GDP of a country. There are great incentives for leveraging AI for driving economic growth, India being primary a soft power nation.

"There are not very stringent laws in India for data governance, usage of consumer data for fair practices. Most regulatory standards that are optionally referred and equally optionally practiced are borrowed from Europe and USA"

Average rate of economic growth can be accelerated by multiple folds at a fraction of the time using centralised systems powered by AI. AI and intelligent automation have powerful scalable economic incentives because resulting in building business models powered by AI.

Ethical need for governance in artificial intelligence

There are no guidelines as such to use such a powerful system in the decision-making processes in so many different domains. One of the most widely applied used case of AI is its use in decision making process that widely involves in interpretation of data and identifying insights. This means that there is compelling reason as to consider cultural perspective while processing and interpretation of data.

There is no defining limits and jurisdiction of decision-making ability for algorithmic based intelligent systems. Even if there is a limit there is no standard identity for AI as a technology resulting in an inability to create a standard protocol of its fair usage. Due to the expense of convenience and ease and due to no standard regulation.

There is no transparency in sophisticate powerful AI models that are widely used on general consumer population. Most AI models that are created are built by using prebuilt neural network models such as "Bert" that was designed by centralised entity "Google".

Engineers that are using such pre-existing model to build a decision-making system have no clue on the compulsive biases that come out when used in a country like India. The biggest reason is India being a cultural melting of the world, there is almost a new

dialect of language and a shade in cultural difference in just about a few hundred kilo meters. There is a heavy dependency of data used by computer scientists to train such pre-existing frameworks. Due to lack of natively build frameworks in India most of the base models are re used from the United States or the European Union.

The irony is that most computer scientists have minimal to no clue on how the framework is processing a set of datapoints and arrive at a decision. While building a model there is an extensive need of clean data to train the model.

There are no data training standards while building an AI model. Even if there are standards, there is no access to clean data authorised to be used to train these models. Due to lack of regulation around data curation for training purposes alone means there is a strong reason to build and implement AI governance in India is massive.

There are no standard data rights for citizens yet. This means every state in the country who have extensive political, cultural, and linguistic diversity has no say on ways their data is being processed and interpreted by powerful decision-making intelligent algorithms.

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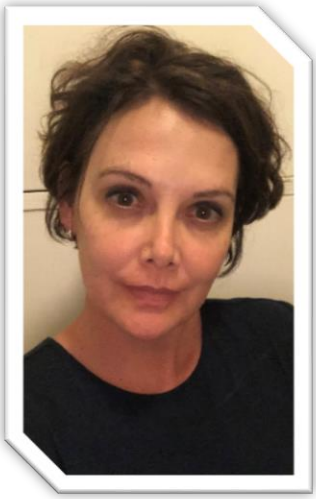
This means bringing in hyper generalisation in cultural interpretation of belief systems. My effort at the Global AI Ethics Institute is to bring in awareness of such deep functional application of intelligent systems on human lives. Governance at global level is imperative for such technologies how ever while forming governance consideration of cultural perspectives is equally imperative.



A View of AI Ethics Challenges and Debates in 2022

By Prof **Emma Ruttkamp-Bloem**

Advisory Board Member of the Global AI Ethics Institute | Professor and Head of Department of Philosophy at University of Pretoria, South Africa

In terms of policymaking, the dual challenge of translating abstract guidelines into concrete and clear policy actions on the one hand, and, on the other, establishing fair and actionable legal redress in the case of transgression of guidelines, will be an essential domain of discourse. These challenges play out in the domain of AI governance where one of the most interesting debates will be on how best to classify AI systems to determine appropriate and adequate regulation and redress for each kind of system. What grainsize is needed for such determination, and what factors would determine the grainsize, and how will we ensure that the classification system we come up with is dynamic enough to keep up with technological advancement? Furthermore, the overall success of AI governance will be determined by the level of buy-in to collaborative governance, the inclusion of all stakeholders, and bottom-up community-based approaches, such as data-activism.

Trans-or cross-cultural collaboration in AI ethics regulation

"In machine ethics one of the central issues remains how to overcome the situation where one discipline tends to control all narratives"

Another, absolutely crucial, domain of discourse in terms of policymaking will be discussion of and deliberation on the nature and effectiveness of trans- or cross-cultural collaboration in AI ethics regulation, which is a debate that takes place

on the one hand against the background of the need to conform with International Law, and, on the other, in a context of respecting diversity of cultures, being sensitive to different articulation of values, and acting in epistemic just manners. Cultural engagement is essential to ensure adherence to policy, as the lack of such engagement implies disrespect and epistemic injustice which is not a context which is conducive to adherence or trust. Without trust, there isn't full adoption, and without full adoption, there cannot be optimal realisation of the benefits of AI technologies for all.

What does it mean to be human?

In machine ethics one of the central issues remains how to overcome the situation where one discipline tends to control all narratives, even though the field clearly belongs (at least) to philosophy, legal sciences, and computer science. Finding ways to concretely interact across disciplinary discourses, methodologies, and conventions such that what is possible, what ought to be acted on, and to what extent there should be action, all jointly enrich the debate on artificial morality in a framework of responsible research and innovation, remains a complex but crucial issue. Recognising that AI systems are socio-technical systems is essential to resolving inter-, multi-, and transdisciplinary tensions.

The role of value-by-design approaches in data and information ethics will remain important, as the world struggles to instil trust in the technology that promises so much in terms of progress for good. In general, establishing ethics as an actionable ingredient of every stage of AI systems lifecycles, and never a static add-on, will remain the biggest challenge.

In the ethics of social robots, (re-)defining what it means to be human in a context in which it is more and more clear that humans and technology co-shape the world in which we navigate our lives will be centre stage. This debate is core to how human-centric approaches in AI research will impact on the lifecycle of AI systems driving social robots, from research through design and development to deployment and use, as these systems improve based on human input, while at the same time, making essential contributions to the interaction between humans and robots.

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Overall, three issues should stand out: 1) the intersection of AI ethics with concerns in epistemic, social and environmental ethics, 2) working out what the impact is of the upending of the Cartesian subject-object relation on what it means to be human in the context of technologies driven by AI technology such as the Internet of Things, and 3) defining what 'meaningful human control' means in different contexts for different kinds of system – and perhaps even in different cultures – and whether, and if so, how, the definition is related to risk and impact assessments.

2022, everybody ready for the European regulation

By Dr **Idoia Ana Salazar**

Executive Board Member of the Global AI Ethics Institute | President OdiseIA, Spain

Artificial intelligence (AI) is the present. Its position as the technology of the future is long gone. More and more companies and organisations are joining the use of AI as a tool to improve the efficiency of their different business processes. Automation, accuracy, and speed in the analysis of complex data are key elements that these systems have mastered to perfection.

In addition, this technology fosters revenue growth - and cost minimisation - by making highly accurate, pattern-based predictions. In fact, investments in this sector are expected to increase ninefold by 2025, from EUR 6 billion to EUR 52 billion.

In the current scenario of an overabundance of products and services, coupled with an overabundance of stored and live data (big data), it seems more than normal that we develop a tool such as AI systems to help us deal, in an extremely efficient way, with this huge amount of data. Something that we humans are not physically capable of. But we should certainly approach it as a complement: a tool that augments us and allows us, at the end of the day, to improve our efficiency and our comfort.

A big challenge for Europe

In the race to lead in artificial intelligence and efficient data management, Europe continues to lag far behind other powers such as the US and China. Controversy and prejudices about the potential risks have led to slow reflection by the main public institutions. Some of the main problems have to do with the use of personal data by AI systems, which could affect one of the fundamental rights of Europeans: privacy. In this sense, in the EU (European Union) we have a legislation that watches over us: the

General Data Protection Regulation (GDPR). The regulation limits the indiscriminate use of private data for profit-making purposes. The gold of the 21st century. It is undoubtedly necessary to continue advancing in this regulatory framework, but with special care so as not to halt the technological progress of artificial intelligence, which can do so much good for so many sectors. It is difficult to maintain this balance.

Thus, with the aim of boosting AI and maintaining its responsible and ethical use, the European Commission has published several initiatives. These include its White Paper and its proposal for regulation, which is based on the analysis of very specific use cases based on the level of risk: high, medium, and low. More or less, all companies and organisations that want to use AI will have to comply with the requirements of this new regulation if they want to operate in Europe.

> *"In the race to lead in artificial intelligence and efficient data management, Europe continues to lag far behind other powers such as the US and China"*

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2022 will therefore be the year in which all companies and organisations will work to properly adapt to this proposed regulation. Likewise, governments will use this time to develop tools and strategies to facilitate compliance. It will undoubtedly be one of the key topics in AI this year.

Importance of AI Governance Toolkit for Environmental, Social and Governance

By Dr **Mahendra Samarawickrama**

Expert Member of the Global AI Ethics Institute | Manager, Data Science and Analytics at Australian Red Cross, Australia

As stated by Randy Dean, CEO at Sentient Technologies, "everything invented in the past 150 years will be reinvented using AI within the next 15 years". Unlike any other technology, because of the decision-making ability of AI, ethics and governance became a key concern. Social diversity, equity and inclusion are considered as key success factors to mitigate risks in AI while driving social justice. Sustainability became a broad and complex topic entangled with AI. Many organizations (government, not-for-profits, charities & NGOs) have diversified strategies driving AI for business optimization and social justice. The partnerships and collaborations became important more than ever as diversified and distributed data is the source of AI while bias is the key risk. Therefore, because of the scope, diversity, and complexity of the applications in AI, the importance of an abstraction framework for simplifying and generalizing AI governance is apparent.

Complexity in AI governance

The AI spectrum is quite broad. From IoT sensor management to smart city development, different stakeholders should look into different perspectives such as social justice, strategy, technology, sustainability, ethics, policies, regulations, compliance, etc. Moreover, things get even more complex when different perspectives are entangled. As examples,

1. Environmental and Social: AI has been identified as a key enabler on 79% (134 targets) of United Nations (UN) Sustainable Development Goals (SDGs). However, 35% (59 targets) may experience negative impact from AI. While the environment gets the

highest potential, the society gets the most negative impact by AI and create social concerns,

2. Environmental and Technology: Cloud computing is promising with the availability and scalability of resources in data centres. With emerging telecommunication technologies (e.g., 5G), the energy consumption when transferring data from IoT/edge devices to the cloud became a concern on carbon footprint and sustainability. This energy concern is a factor that shifts the technology landscape from cloud computing to fog computing,
3. Economic and Sustainability: Businesses are driving AI hoping it can contribute about 15.7 trillion to the world economy by 2030. On the other hand, the UN SDGs are also planned to achieve by 2030 in the areas critically important for humanity and the planet. The synergy between AI economic and sustainability strategies will be essential,
4. Economic and Social: Businesses are driving AI, hoping it can contribute about 15.7 trillion to the world economy by 2030. However, the research found 85% of AI projects will fail due to bias in data, algorithms, or the teams responsible for managing them. Therefore, AI ethics and governance for the sustainability of AI became a key success factor in economic goals in AI.
5. Economic and Ethical: Still, no government has been able to pass AI law except ethical frameworks or regulatory guidelines. Therefore, there are many emerging AI risks for humanity on our way to economic prosperity, such as autonomous weapons, automation-spurred job loss, socioeconomic inequality, bias caused by data and algorithms, privacy violations, and *deepfakes*.

On the other hand, the complex differences in AI applications don't necessarily mean there are no similarities in other perspectives such as cultural values, community or strategy. For example, similar organizations may work on different sustainability goals for social justice. Such differences in AI strategy should not obstruct the partnership and collaboration opportunities between them.

"Because of the scope, diversity, and complexity of the applications in AI, the importance of an abstraction framework for simplifying and generalizing AI governance is apparent"

Future of AI governance

In good AI governance, leaders should address the four key dimensions of

1. AI,
2. Organization,
3. Society, and
4. Sustainability.

The interdependencies of these dimensions enable addressing of AI strategy, AI for Good and United Nations Sustainable Development Goals. Further, it helps mitigate AI risks due to biases by bringing social diversity, equity, and inclusion to AI governance. Moreover, it helps organizational governance and responsibilities by guiding the orchestration of people, culture, and AI mission towards sustainability.

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Adopting such an AI governance framework enables organizations to systematically engage with the community, volunteers, and partners to collaborate towards ethical and sustainable AI for social justice. It hides the application-specific complexities in AI and generalizes the key success factors (KSF) of AI initiatives where stakeholders can easily understand their sustainability and social justice responsibilities. These key success factors include but are not limited to social DEI (Diversity, Equity and Inclusion), SDGs (sustainable development goals), strategy, ethics and governance in AI. Moreover, it supports mitigating AI risks related to biases in data, algorithms, and the people involved in AI.

Perspective on the coming year (2022) in the field of AI

By **Ioana Marcoux**

Executive Board Member of the Global AI Ethics Institute |
AI Ethics Consultant, France

Human AND machine

In 2022, more than ever before, AI is part of our lives, which makes the stakes enormous. AI will make the difference in business. Companies that will use it to increase the skills of their employees and will imagine new processes, will gain in performance, and will rise to the top. Those who use AI just to improve existing processes will lose more and more market share.

The future of companies and by implication the future of jobs will depend on AI solutions that companies implement. We should abandon the notion of human *versus* machine and create AI systems where human and machine are complementary. I don't think that companies have understood this well, so I am not optimistic for the future of employment for the low-skilled jobs; on the other hand, I am optimistic for all data-related jobs. The number of those jobs will increase again this year, but companies will find it difficult to recruit qualified employees.

Ethics

"We should abandon the notion of human versus machine and create AI systems where human and machine are complementary"

The subject of ethics in AI has become a hot topic in recent years.

Companies use AI to increase their profitability, which is normal because value creation is their main goal. At the same time, companies will understand that openness

to ethical considerations by all stakeholders in an AI project is essential. Companies will see ethics not as "philosophy", as an "academic approach", but as an empowerment of their employees, an "on-the-ground approach". Companies will train their engineers, data scientists, and product managers in order to allow them to react to ethical issues efficiently. The "sinews of war" of AI are the data and I think that not everyone, people and governments, has fully understood the dangers that massive data collection by private companies can have on people in the long term. It is impossible to predict today how dangerous it could be in the years to come.

To implement ones' corporate vision, it is necessary to have an ethical framework for AI to minimize the risk of harm to all stakeholders involved. The pace with which AI technology is improving overtakes our ability to deploy it responsibly, ethically and equitably. Using as a support the « Proposal for a Regulation of the European Parliament and the Council laying down harmonized rules on Artificial Intelligence », issued on 21 of April 2021, companies will integrate ethics within the context of corporate social responsibility (CSR) and of a "business-to-mission" approach. To be assisted in the operational implementation, companies will hire Head of Responsible AI, AI Ethics Global Leader, Global AI Ethicist, or Chief Responsible AI Officer (weforum).

Technologies

I don't predict autonomous cars invading the roads, because no matter how advanced AI is today, I cannot imagine that an autonomous car could drive safely through the Place de l'Etoile in Paris at rush hour.

Voice assistants, powered by AI, will continue to evolve in 2022 and will be increasingly present in our daily lives: in IT support (solving basic IT problems, ordering equipment, etc.), HR (helping with job interviews, welcoming new arrivals, etc.), in banking (helping with day-to-day operations, complaints, etc.).

As climate change concerns us all, companies will demand that AI is energy efficient, sustainable practices will be a priority. I predict that we will see more and more companies committing to reducing the carbon footprint of their AI and investing in

ways to make both AI hardware and software more energy efficient. I predict new labels that will certify green and ethical AI systems.

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