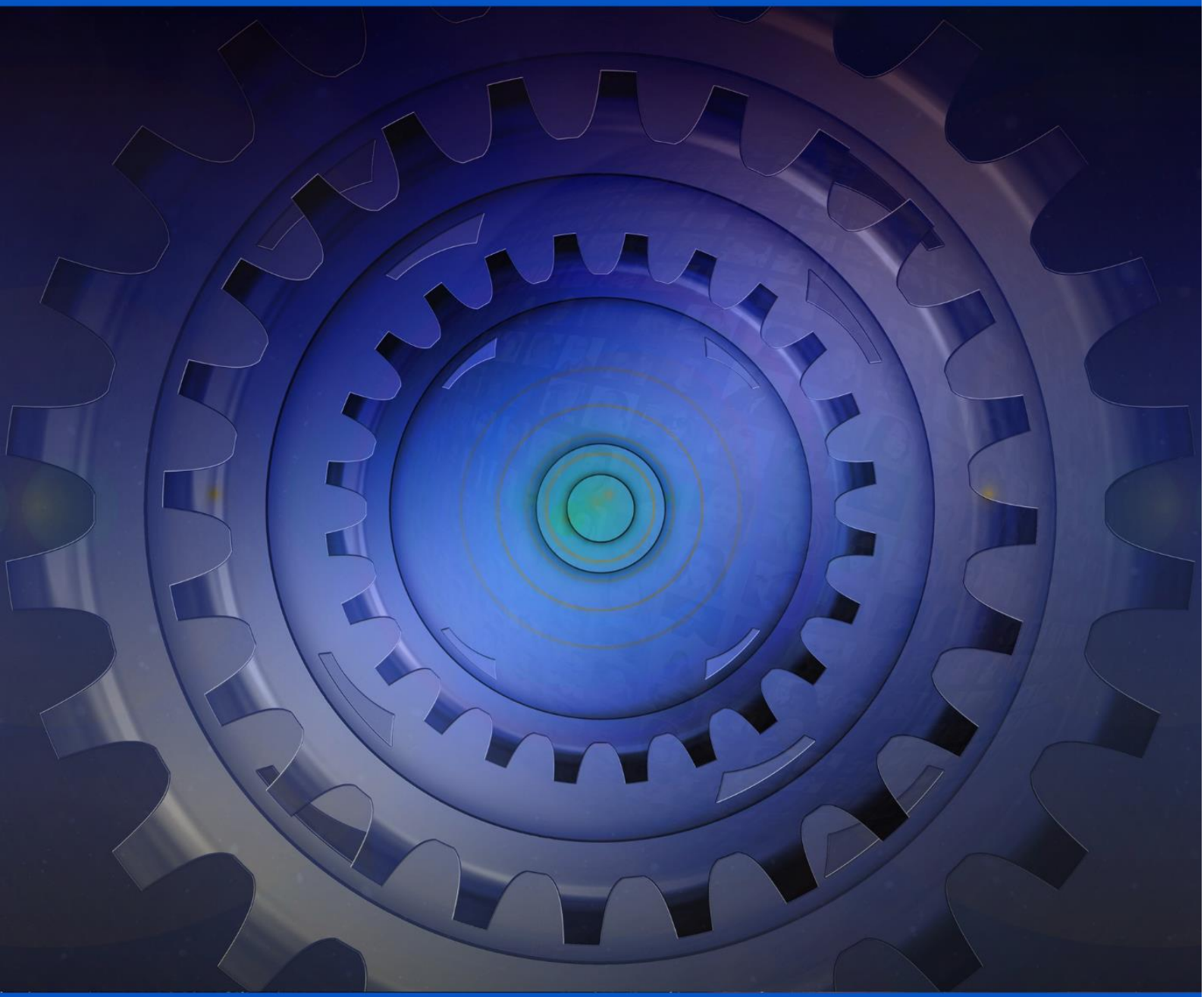
AI4IA CONFERENCE REPORT 2021



UNESCO IFAP

unesco

Information for All Programme

In observance of the International Day for Universal Access to Information (IDUAI)
28 September 2021

Table of Contents

***Disclaimer**: The views summarized in this Conference Report are meant to reflect those of the presenters and should not be attributed to UNESCO, the UNESCO IFAP Working Group on Information Accessibility (WGIA), or members of the WGIA.*

1. The Executive Summary

On 28th September 2021, the Artificial Intelligence for Information Accessibility (AI4IA) Conference explored nine themes on the promotion of accessibility by AI. These themes were: AI Policy and Ethics, AI and Society, AI and Healthcare, Media and the Right to Know, AI & Law, AI & Big Data and Innovation, AI and Creativity, Youth in AI, and the Accessibility Pavilion. The conference was a platform for more than 73 presenters from 17 countries to contribute to each of these AI4IA thematic areas in their unique and diverse ways.

The thematic session on AI Policy and Ethics captured the central concerns on AI for Information Accessibility. Eleven presenters from India, Egypt, South Africa, France, the United Kingdom, the United States of America, Canada, and Brazil, showcased the complexities of policy development and ethical considerations while representing the global diversity this conference sought to celebrate.

The AI and Society theme had thirteen presenters who explored notions of law, multi-stakeholder and multi-sectoral responsibilities, the features of future AI societies and the recommendations for bridging divides. The global representation was excellent, coming from Jamaica, Mexico, the United States of America, Canada, Germany, and Uganda.

The AI Health market has progressively increased from 2014 to 2021, and it will only continue to grow.

Though Lt. Gen. Velu Nair was the sole presenter in the AI and Healthcare theme, this topic arose quite frequently in other themes as well. This was due to the prevalence of AI being embedded in health care operations, especially during the Covid-19 Pandemic. This session critically engaged with medical practitioners, AI and their roles and responsibilities in healthcare in both complementary and divergent ways. We saw how AI impacts healthcare, especially due to the availability of big (medical) data on a vast collection of health-related data and learnt that by utilising this data, deep learning can solve complex problems to guide better healthcare options. It was also seen that the AI health market has progressively increased from 2014 to 2021, and it will only continue to grow. As a result, one can also see an increase in academic publications.

The next theme was Media and the Right to Know. This session showcased the role of the media and the right to know during ten presentations – from the United States of America, Brazil, Colombia, Jamaica, United Kingdom, India, Zambia, and South Africa. It explored the role of AI ethics and Accessibility considerations having an impact on public relations, communications, and reputation and the topic of fake news, which is also relevant to the right to know and reputation.

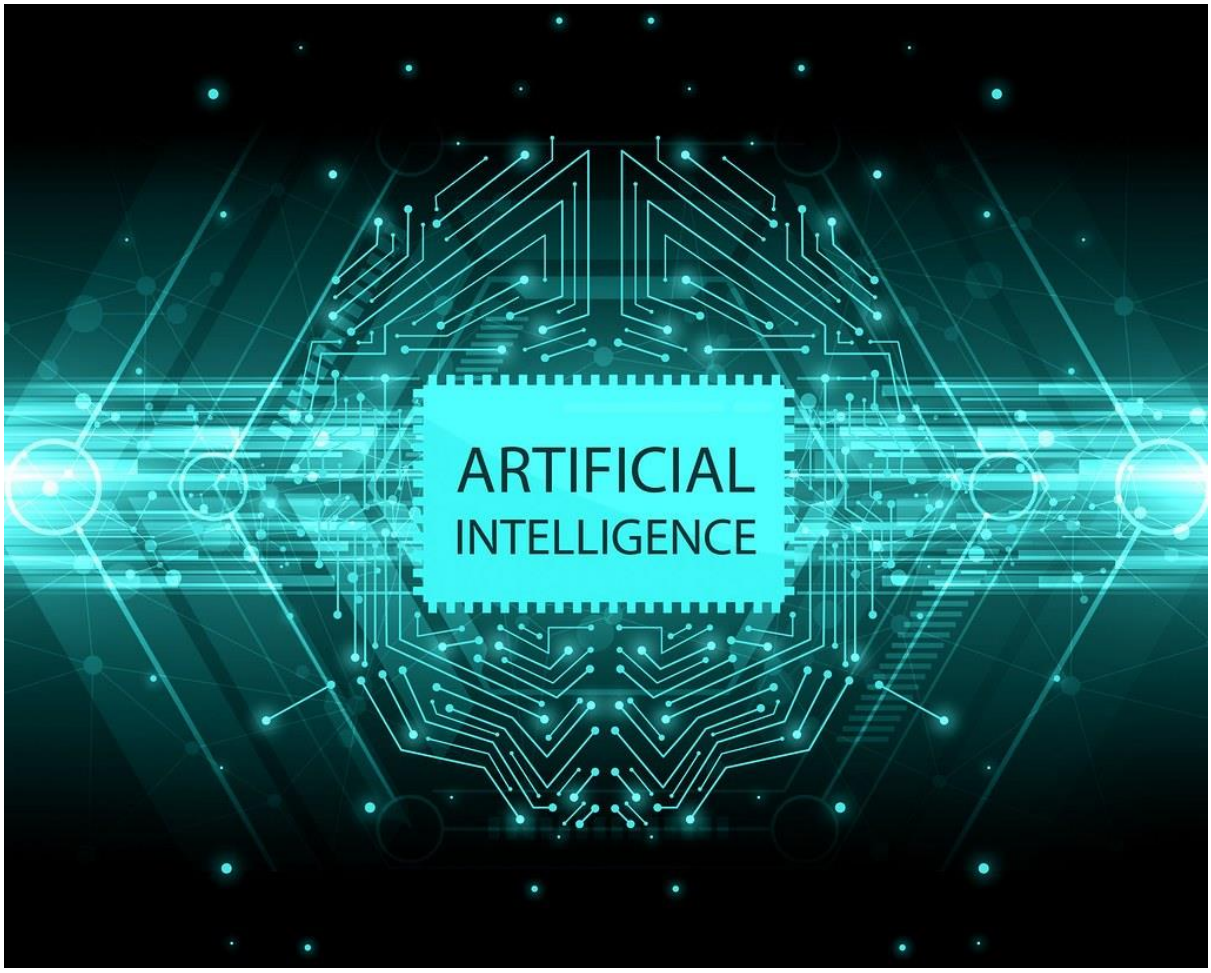
Also considered was how AI could be used to improve legislative decision-making.

Could an Artificial Intelligence be seen as an inventor or originator of something, and if so, what might the legal implications be? Nine presenters from Brazil, the United States of America, France, and India answered this question and explored the AI and Law session. Additionally, the presenters discussed the malicious uses of AI insofar as it can be used for cybercrimes that ought to be punishable by law and how AI can be used to improve legislative decision-making.

The thematic area of AI, Big Data and Innovation explored innovative and creative ways in which AI can be used to streamline and improve processes across a diverse representation of sectors. Six presentations from the United States of America, Canada, Chile, Germany, South Africa, and Turkey dove into the opportunities and challenges AI provides in this sector.

Moreover, five presentations from the United States of America, Canada, Jamaica, and Israel introduced us to the Creative scope of AI and the endless possibilities it contains to visualise the design, compose music and test our boundaries of comedy and woke culture. Presenters answered questions on whether algorithms can be creative, and how AI can be used to promote human creativity and provide new avenues for creative expression.

2. Introduction



3. General overview and acknowledgement

The UNESCO Information For All Programme (IFAP) Working Group on Information Accessibility (WGIA), hosted its second online one-day conference on 28 September 2021. This event was hosted in collaboration with the Kule Institute for Advanced Studies (KIAS) and AI for Society (AI4S) Signature Area, both at the University of Alberta, Canada; the International Centre for Information Ethics (ICIE); Future Africa at the University of Pretoria, South Africa; the Centre for New Economic Diplomacy (CNED) in ORF, India; and the Broadcasting Commission of Jamaica. It was organised under the auspices of the UNESCO Cluster Office for the Caribbean, Kingston, Jamaica and the UNESCO Regional Office for Southern Africa, Harare, Zimbabwe.

The conference was organised to commemorate the International Day for Universal Access to Information (IDUAI) 2021 under the global theme, “What We Know about Our Right to Know" and in the context of the COVID-19 pandemic, “The Right to Know- Building Back Better with Access to Information." The theme of the conference covered Inclusive AI and addressed Information Accessibility.

International Day for Universal Access to Information focused on the right to information in times of crisis and on the advantages of having constitutional, statutory and/or policy guarantees for public access to information to save lives, build trust and help the formulation of sustainable policies through and beyond the COVID-19 crisis.

The theme of the conference was Inclusive AI with topics addressing information accessibility.

The aim of this specific event was on promoting, and also understanding, the barriers to inclusive artificial intelligence. Sure, AI can be beneficial to society, but it can also yield harmful effects if abused. Therefore, the theme discussed a range of issues, including the relationship between Artificial Intelligence (AI) and Law, AI and Ethics, Media and our Right to know, Creativity and Innovation and how necessary it is to comprehend how AI can be made inclusive, thereby benefiting the widest cross-sections of society.

This event provided a platform for open discourse involving participants from academia, civil society, private sector, and government. In recognition of the central theme guiding the event – Accessibility – the AI4IA promoted accessibility in a number of ways. The conference organisers, partners and volunteers ensured that all the pre-recorded presentations were closed-captioned for those hard of hearing. In addition, volunteers were present throughout the saloon sessions to assist delegates and participants of the AI4IA Conference. The conference departed from the usual Zoom or MS Team interface which may preclude a variety of users and used a more interactive Gather .Town platform providing for alternative virtual conference engagements. An expression of gratitude is also to be conveyed to the international sign language expert- Mr. Andries van Niekerk from the National Institute of the Deaf, South Africa- who provided interpretation in international sign language. Together with his real-time sign interpretation, captioned versions of Ms.Monica Desai and Mr.Colton Bishop's presentations were also provided to facilitate greater accessibility to viewers who may be deaf or hard of hearing.

3.1. Popular themes raised

- AI is ubiquitous
- The rapid development of technologies
- The necessity of policies, guidelines, regulations and legislation (which take slower than the development of technologies)

- Promotion of various literacies, including AI, digital, media and information literacy
- Responsibility of big technology companies and governments
- Role of intergovernmental and international cooperation
- Enforcement of racial, ethnic, religious and gender bias
- AI brings both opportunities and challenges
- Efforts must be made to fight against mis-dis- and mal-information, fake news, filter bubbles and echo chambers
- Colonisation of data
- Users, legislators, researchers, journalists – all sectors of society – must be informed of, and understand how these technologies work.

3.2. Frequent AI4IA Themes

- Ethics
- Fairness
- Openness
- Transparency
- Privacy
- Net-neutrality
- Promotion of democratic societies
- Freedom of expression
- Diversity
- Inclusion
- Accountability
- Responsibility of developers

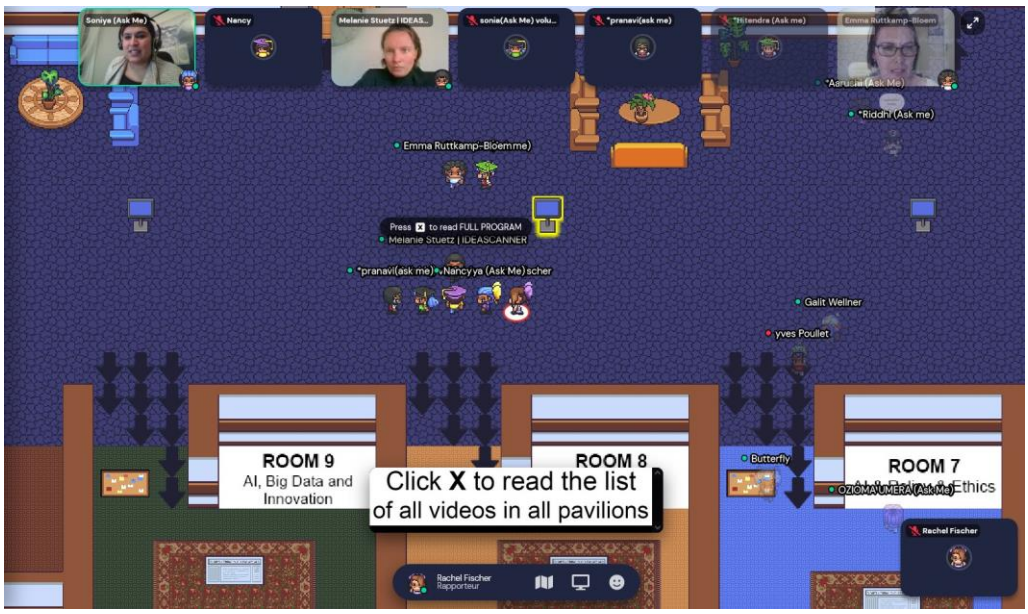
3.3. AI4IA Risks and Challenges

- Threats to societal interests
- Treats to the environment
- Threats to democracy
- Systemic risks

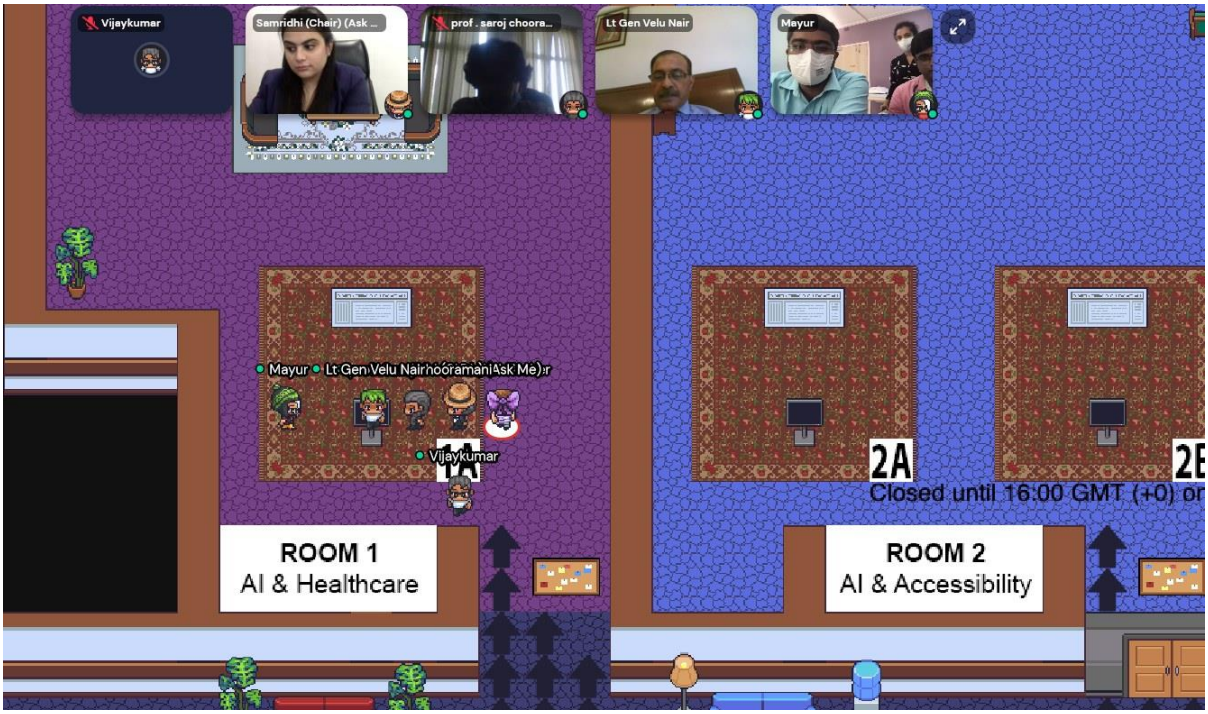
Overview of speakers' statistics

SPEAKER STATS		SPEAKER STATS		# of Presentations per theme Stats	
Africa	13	1	**Non-binary**	AI & Accessibility	2
Asia	9	35	**Female**	AI & Creativity	8
Caribbean	8	40	**Male**	AI & Law	12
Europe	13			AI & Society	15
Middle East	3			AI Policy & Ethics	12
North America	21			AI, Big Data and Innovation	7
South America	8			Media & Right to Know	10
Other	0			AI & Youth	6
Total	**75**	76		AI & Healthcare	**1**
				TBC	**0**
"Global North"	34			AI4Society (Alberta)	**0**
"Global South"	41			**Total speakers**	**73**
				Keynotes, Comedians and Welcoming	**8**

Images taken from the Gather.Town platform

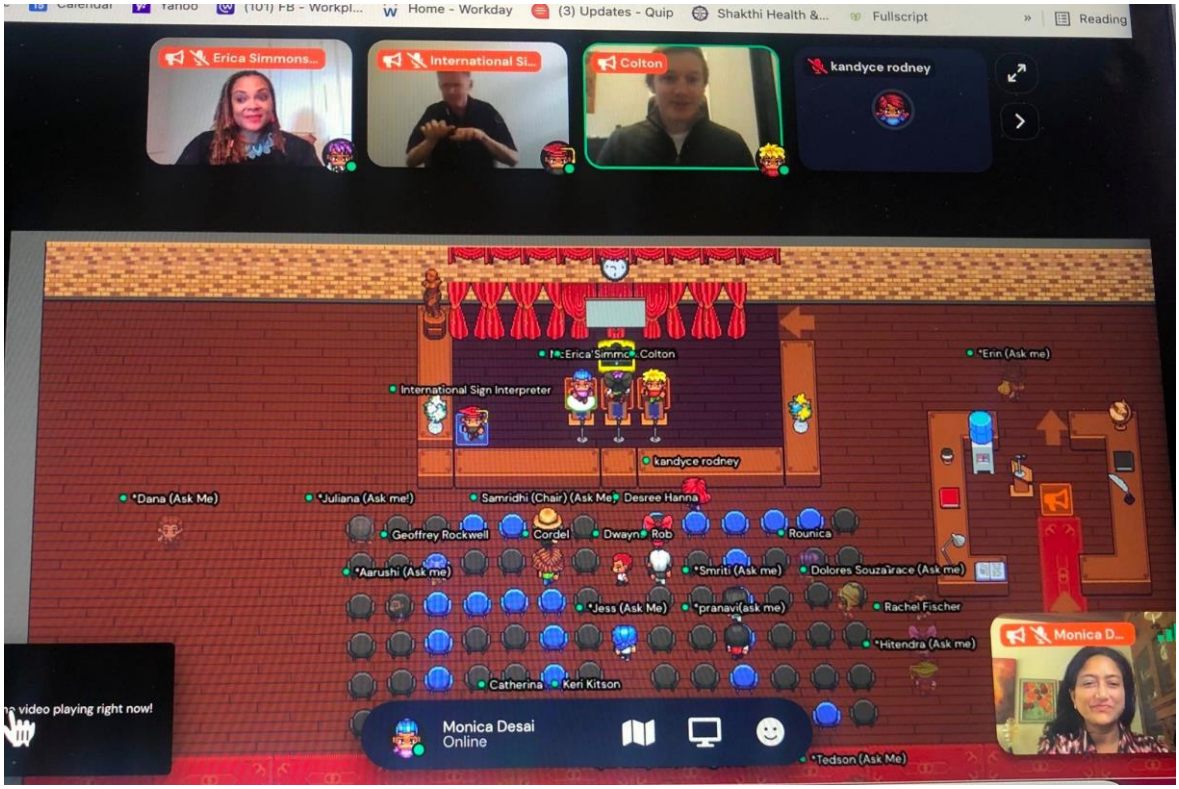


1 - Figure 1: Salon B

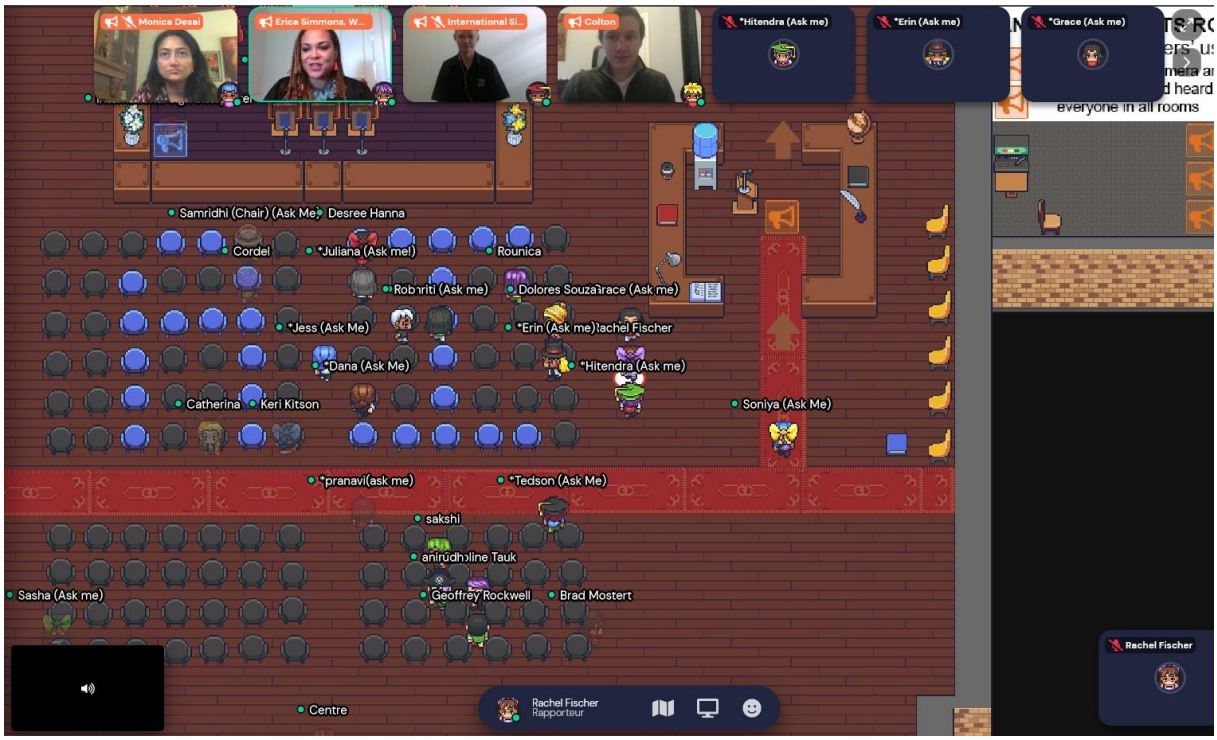


2 - Figure 2: Presentation by Lt Gen V Nair - AI and Healthcare

3 - Figure 3: Presentation by Shri Abishek Singh



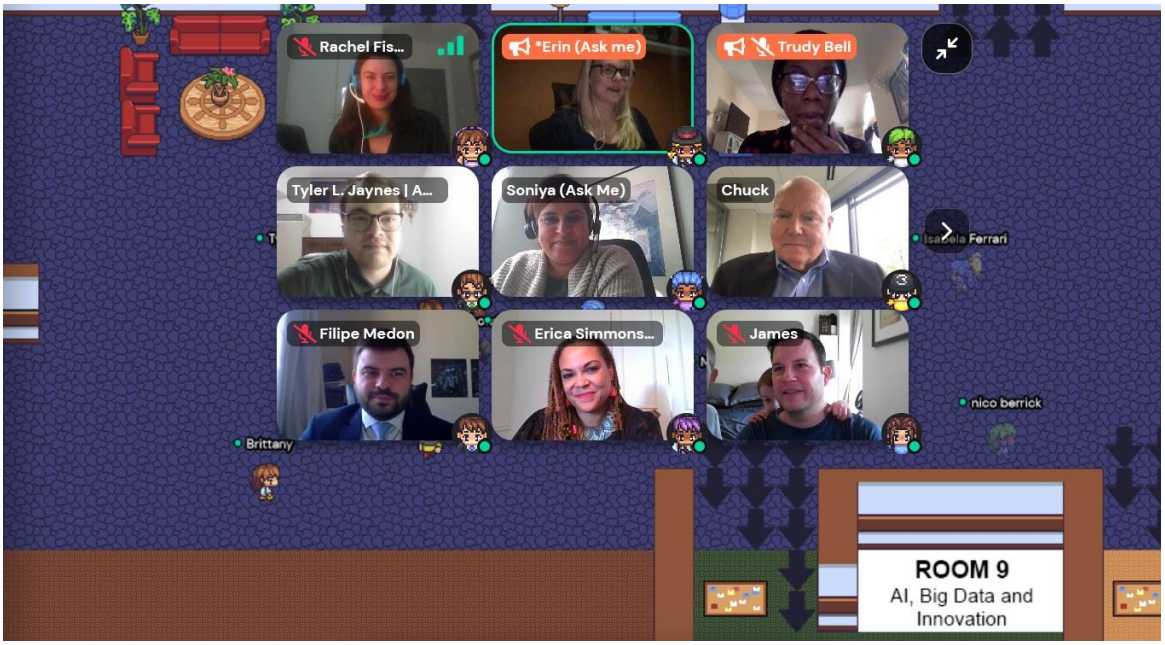
- *Figure* 4: Presentation by Monica Desai



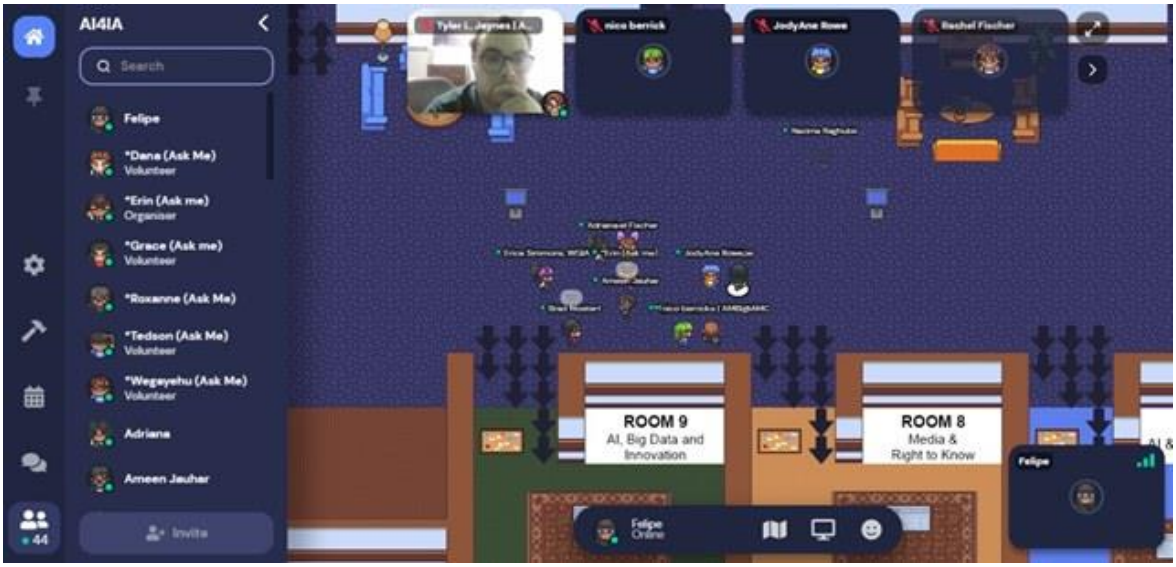
4 - Figure 5: Main Conference Hall for Keynote Presentations

5 - Figure 6: Room 6 Discussions

6 - Figure 7: Room 7 discussions



7 - Figure 8: Meeting hall discussions



8 - Figure 9: Meeting hall discussions

***Disclaimer**: The views summarized in this Conference Report are meant to reflect those of the presenters and should not be attributed to UNESCO, the UNESCO IFAP Working Group on Information Accessibility (WGIA), or members of the WGIA.*

4. Welcoming, UNESCO Opening and Keynote Addresses

4.1. Welcoming Address

Cordel Green and Samridhi Arora [1]

Cordel Green, Executive Director of the Broadcasting Commission of Jamaica, and Chair of the IFAP Working Group on Information Accessibility welcomed all the participants to the Second Artificial Intelligence for Information Accessibility (AI4IA) Conference, held in commemoration of UNESCO's International Day for Universal Access to Information (IDUAI), the 28th of September. He introduced the participants to the on-demand format of the 2021 Conference and shared his views on how it allowed for better global participation, wider reach and greater inclusivity. Partners, amongst others the UNESCO Cluster Office for the Caribbean and the UNESCO Regional Office of Southern Africa, were thanked for making this event possible.

Following Green's welcome, Samridhi Arora- Chair of the AI4IA Planning Committee, Advocate at the Supreme Court of India, and member of the UNESCO Working Group on Information Accessibility- officially opened the Conference. Since accessibility was the core focus of the conference, Ms Arora took the time to introduce the participants to volunteers who had been organised to assist with the programme as well as the new and interactive Gather. Town platform. She provided an overview of the platform, the rooms, and the thematic areas of the conference. Before closing the opening

remarks, she extended a sincere appreciation to all the partners, presenters, the WGIA members and especially the AI4IA Conference Organising Committee.

References

[1] https://youtu.be/fDT1vcxKsvI

4.2. UNESCO Opening Addresses

4.2.1. ***UNESCO Cluster Office for Southern Africa***

Presentation by Martiale Zebaze Kana [2]

Martiale Zebaze Kana opened his address by reiterating the slogan for the 2021 Conference "The Right to Know: Building Back Better with Access to Information" and highlighting how well it related to artificial intelligence, its capabilities, opportunities and challenges. He discussed the importance of promoting literacy, education, and the use of Information and Communication Technologies (ICTs), especially in light of the global pandemic since it has unfortunately precluded many children from learning because they lack access to ICTs to attend online learning. He pointed out that being kept out of school exacerbates poverty and makes people more vulnerable to mis- and disinformation and fake news but also stated that Artificial Intelligence can play a role in mitigating the spread of such disinformation by identifying false information. It can further assist with education by extending access to different languages and translating classroom instructions, whilst also promoting local, regional, and international education resource exchanges and collaboration. It automates administrative tasks, hence supporting teaching staff to be more effective and efficient in their increased duties. It was brought to the notice of the participants that currently AI had low adoption rates across the African continent, but there was an opportunity for states to collaborate to promote increased access to and integration of AI technologies. Mr.Kana called upon the states to take a proactive stance on the development of policy and adoption of AI and suggested they adopt, and adapt to, the technological and Fourth Industrial Revolution. He said that African states can learn from the European Union when it comes to AI policies and laws, but with the development and adoption of legislation and policies, it is pertinent for us to avoid stifling innovation. Recommendations for African states included:

- The need to strengthen policy initiatives for AI financing
- Streamline the regulatory frameworks for AI

- Enhancing capacity for AI governance

Mr Kana concluded that care should be given to updating education, skills, and training systems to strengthen human development and protect against algorithmic bias and called upon African states to work with UNESCO to promote AI to be used as a tool to benefit the African continent.

4.2.2. UNESCO Cluster Office for the Caribbean

Presentation by Saadia Sanchez-Vegas, PhD: Director and Representative UNESCO Cluster Office for the Caribbean

Saadia Sanchez-Vegas welcomed everyone to the second online AI4IA Conference and acknowledged the International Day for Universal Access to Information, observed each year on the 28th of September. A special expression of gratitude was given to UNESCO's Information For All Programme, the Working Group on Information Accessibility for organising the event, as well as the prestigious parties who supported this event.

The 74th UN General Assembly declared the 28th of September as the IDUAI in October 2019 and that the theme for the 2021 conference was "The Right to Know". She noted that UNESCO by facilitating a global dialogue highlights the role of access to information laws and their implementation to build back solid institutions for the public good and sustainable development. It supports international collaboration in this field. For the IDUAI, UNESCO and its partners were hosting seven panels:

- Panel 1: Access to information laws during the decade of actions: trends and challenges;
- Panel 2: The importance of independence and efficiency of oversight bodies and legal frameworks;
- Panel 3: Leveraging digital technologies for peace and sustainable development;
- Panel 4: Delivering regionally, delivering for citizens, building the effectiveness of access to information initiatives;
- Panel 5: Strengthening the right to access information in the universal periodic review;
- Panel 6: Access to information – regional perspectives and UNESCO policy guide; and
- Panel 7: Harnessing OER to strengthen access to information.

She pointed out that COVID-19 has raised the need for a global reflection on the impact of access to and the quality of information, democratic participation, and the culture of peace. Hence, we should

reflect on the impact it has on decision-making and the exercising of human rights. It was also seen that along with the social and ethical requirements of access to information by the public, there was also increased legal recognition of the right to access to information. While in 1991 only 12 countries had laws guaranteeing citizens the right to access government information, the number grew to include 40 countries in 2009, and 126 countries in 2019.

Ms Sanchez also noted the challenges in terms of the inclusion of international standards. Having access underscores the importance of citizens having the opportunity to access information utilizing ICT infrastructure, that it is affordable, and that they have the skills to engage with ICTs in a meaningful way. Other challenges include hate speech and disinformation. There is an urgent call to action for us all to tackle these obstacles by joining our efforts and resources to provide more access to technology and information, ensuring digital cooperation and transformation. Examples of UNESCO's projects that promote access include the ROAM-X principles as well as the Global Framework for Ethics of Artificial Intelligence.

In essence, we must ensure that we provide a safe, equitable and open digital future for all and leave no one behind.

References

[2] https://www.youtube.com/watch?v=0BeMJQDwWjg

5. Keynote Presentations

5.1. ***Shri Abhishek Singh***

President and CEO, National E-Governance Division, MyGov and Digital India, Ministry of Electronics & IT, Government of India [3]

In his keynote address, Shri Abhishek Singh recognised that AI has become part and parcel of our everyday lives (for example NetFlix recommendations). AI has assisted with the COVID-19 chatbot that provides useful information to citizens. When the potential of AI is considered, especially in monetary and economic terms, it can contribute to the digital economy. He pointed out that India is an excellent example of the usage and implementation of AI, such as having one of the largest workforces in AI, using Natural Language Processing to assist with language translation for those who do not understand English, licence assistance using voice-based interaction, and agricultural usages.

Mr. Singh went on to introduce our participants to The India National Strategy on AI which was launched in 2018 with the key focus is to ensure that India emerges as a garage for the world to store AI systems, because of the amount of data that is available due to the large population. The need was to ensure adequate capacity, by supporting PhD scholars who can be deployed to work in developing

AI solutions. This would allow for building capacity in government. He stated that to investigate the future of AI, India is targeting youth and government schools to sign up for the programme to get AI-based lessons to one day build AI-based solutions. This empowers them to have AI skills by the time they enter the workforce. Our keynote speaker proceeded to close his speech and envisioned that public services will be transformed to be even more accessible and affordable, transforming the lives of everyday citizens.

*5.2. **Pansy Tlakula***

Information Regulator, South Africa [4]

Pansy Tlakula started her speech by recognising the relevancy and importance of the UNESCO IDUAI Theme for 2021 and established the ideal of a human right, such as to access information, as an enabling instrument. She stated that as we reflect on COVID-19 and how it has changed our lives, we must consider that our experiences also mirror the countries we come from. Not everyone has similar access to vaccinations. For example, the Global South is far behind the Global North countries that are already deploying booster shots. Thus, it is pertinent that the communities of nations purposely adopt a shared mission to promote vaccination accessibility. This must be a right for all, not just those who have the financial resources to access it. Human rights-centred economic reforms must be adopted to improve the social-economic wellbeing of people, inclusiveness, and reduce inequality.

Ms.Tlakula noted that an essential element of the COVID-19 response and recovery is to ensure the honesty and transparency of public service delivery. To promote integrity in the public sector, information disclosure must be considered a norm. States must make it routine practice to open data and make information available in accessible forms, based on a gold-standard proactive disclosure principle and this must be applicable to both public and private institutions. An example of such a gold standard is the African Union's model law on access to information [5]. Central to these efforts is the notion that information must be democratised.

She called upon all role players – government, public and private sector, civil society –to be sensitive to inequalities exacerbated by global imbalances and by the development of technologies when designing economic recovery programmes. The resource rich should not be the only audible voices.

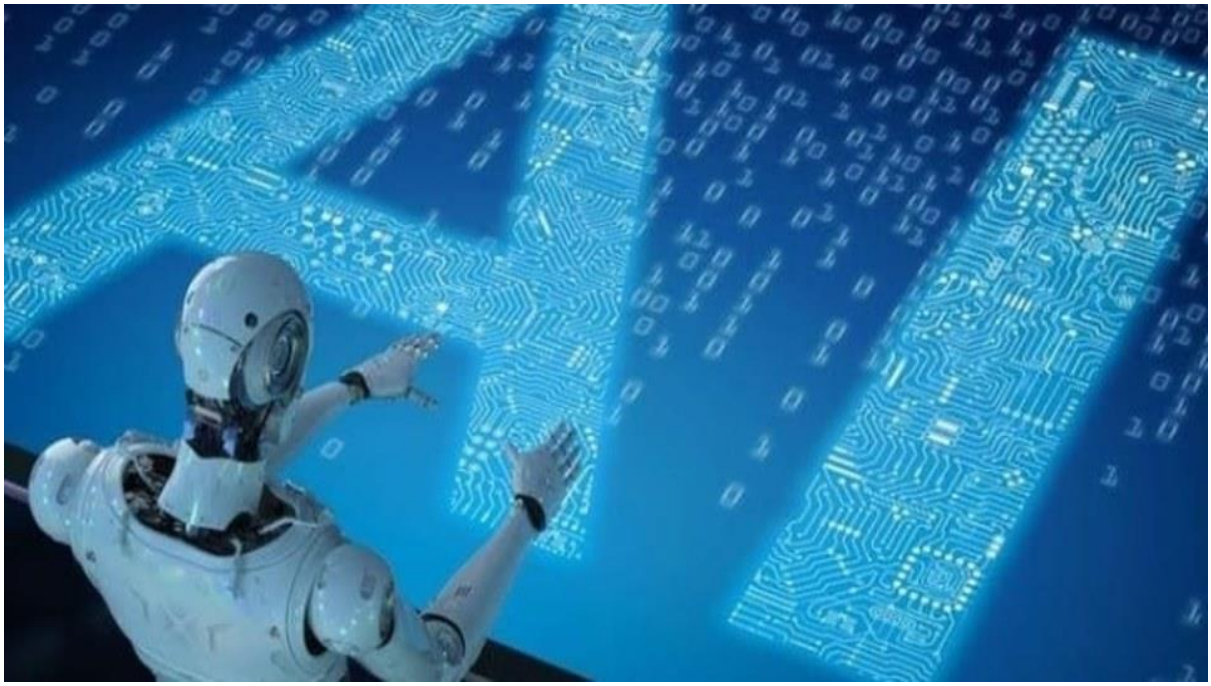
References

[3] https://youtu.be/zJLv8sreIiQ

[4] https://youtu.be/EVlI3ijkwV4

[5] https://www.achpr.org/legalinstruments/detail?id=32

6. Thematic Areas



The conference consists of the following thematic areas:

1. AI Policy and Ethics
2. AI and Society
3. AI and Healthcare
4. Media and the right to know
5. AI and Law
6. AI, Big Data and Innovation
7. AI and Creativity
8. Youth in AI
9. Accessibility pavilion

The recordings for each of the thematic areas have been made available on YouTube. Upon clicking on the theme, you will be able to access the recordings.

7. AI Policy and Ethics

7.1. Introduction

The thematic session on *AI Policy and Ethics [6]*, was thought-provoking and immediately captured the central concerns on AI for Information Accessibility. Eleven presenters showcased not only the complexities of policy development and ethical considerations but also represented the global diversity this conference sought to celebrate. The contributions came from India, Egypt, South Africa, France, the United Kingdom, the United States of America, Canada, and Brazil.

Wendell Wallach presented on *Ethics, Engineering and Oversight* and situated his departure in the ubiquity of ICTs and emerging technologies, as well as their rapid development and deployment. He questioned whose values will shape the trajectory of these developments and while grounding the need for the development of policy and ethics guidelines in already-existing global initiatives, such as the SDGs, OECD AI principles, UNESCO's Ethics of AI draft Recommendations and the IEEE's Ethically Aligned Design, he further argued that legislation lags. Due to the slower pace of guidelines, policies and legislation, the commodification and politicisation of these technologies *vis-à-vis* surveillance capitalism, the weaponization of digital tools might inevitably drive development. He concluded that a value reset, soft laws and well-designed policies and government reforms can nudge the technology trajectory onto a sustainable path.

Artificial Intelligence, class, gender and race were Arthur Coelho Bezerra's focal points. He succinctly stated that information accessibility is closely related to educational accessibility. Taking a step further, he argued that educations cost money and that it then becomes the breeding ground for deepening inequalities between those who can access quality (paid) information and educational resources and those who do not have access to those resources. Not even zero-rated websites solve these concerns, since they delimit the ability of individuals to visit other websites to verify the accuracy and validity of the information they receive, which ultimately contributes to the veracity of mis- and disinformation whilst embedding echo chambers. Contrary to the usual arguments of access to information, Mr Bezerra warned against information dependence and suggested being aware of big technology companies' efforts to encourage addiction to the internet, social media platforms and information consumption.

Yves Poullet presented from a European Union perspective on whether digital platforms require regulation. In his presentation, he put a specific focus on very large online intermediaries and social media and e-commerce platforms that currently own approximately 10% of the market. He stated that the EU functions as a gatekeeper and therefore seeks to protect civil liberties – such as privacy – by employing its EU Data Protection (GDPR) legislation. Regulation of digital platforms is imperative, especially if we wish to continue nourishing a lively democratic society respecting social justice imperatives.

Elaborating on the development of recommendations on AI Ethics, Emma Ruttkamp-Bloem presented an overview of actionable and meaningful AI ethics policy. This policy is UNESCO's Recommendations for an Ethics of AI, as drafted by the UNESCO Ad hoc Expert Group on the Ethics of Artificial Intelligence (AHEG). Not only do these recommendations include principles to guide the development, deployment and usage of AI, but they also promote inclusivity, fairness and diversity, especially by encouraging multicultural participation. This presentation was complemented by Golestan Radwan who also focused on the Recommendations. Ms Radwan presented a detailed overview of the values, principles and policy sections and how they align with UNESCO's central domains of work, such as the Education, Science, Culture and Communication and Information sectors. She concluded that it is imperative to regard this document as a living document that will need to be reviewed regularly every few years.

James Brusseau contemplated a decentralised and accelerated Artificial Intelligence Ethics. He problematised not only information for all, but also the nature and availability of information at all. He stated that the discourse should not just focus on the protection of data, but rather be concerned that the individual can be identified by 'de-anonymization' of a conglomerate of data sets. Due to the

lag in AI ethics, regulations, policies and legislation, he argued that AI ethics must be decentralised and be made accessible to everyone across all phases of the lifecycle. AI ethics should not be in the purview of experts only, since it does not only impact experts. The development of AI ethics can therefore be accelerated if more people have access to it, thereby removing bottlenecks caused by regulators and experts.

Towards adding to the expanding literature on AI and assisting with ethical guidelines, Louise Pryor presented “A Guide for Ethical Data Science”. Although this guide specifically pertains to the domain of actuarial sciences, its thematic recommendations apply to a variety of sectors. Marjorie Ngwenya presented on ethical Artificial Intelligence and consumer protection and the role businesses can play in resolving issues caused by AI. She emphasised the responsibility of developers, governments and industry in ensuring that ethical considerations are part of parcel of the entire lifecycle of AI and its management. These sentiments were echoed by Danielle Davis who warned against the ethical and legal implications of AI particularly concerning marginalised societies. She argued that whilst AI can make data-driven decisions, it cannot replace human abilities such as judgement and values such as freedom.

Positioning the role of media and information literacy in the AI and information accessibility deliberations, Prof.Felipe Chibás Ortiz, referred to the evolution of smart cities into media and information literate cities. In these cities factors that enable literate citizens are promoted. Literate citizens can actively contribute to the Fourth Industrial Revolution and will therefore not be excluded in the continuous development and integration of AI in our daily lives. He argued that we need multicultural, transdisciplinary and multi-stakeholder collaboration, policies, and solutions to concerns and gaps presented by emerging technologies.

Examples of such concerns include the malicious use of AI (MUAI), which was expanded on by Mohammed El-Guindy. MUAI was defined and elaborated on, indicating how governments, criminals and organisations can use it to increase their efforts, whether it is surveillance, criminal activities or the pursuit of profit. It was established that due to the subversive nature of MUAI, education on ethical considerations of ICTs and comprehension of how these technologies work will enable policymakers, researchers and even general society to better identify, and deal with MUAI.

7.2. Overview of presenters

Wendell Wallach

Ethics, Engineering and Oversight [8]

In his speech, Wendell Wallach explored the sheer ubiquity and speed at which new applications are deployed is disruptive to organisations, governments, and the socio-technical fabric in which our lives are embedded. He questioned whether we can navigate the opportunities and challenges and whose values will shape this trajectory. He stated that there was some indication as to the latter, for the values of the technocratic elite focus on efficiency and capital accumulation and were only occasionally respectful of the values of communities being disrupted and reshaped. The technology industry only moderately felt responsible to promote accessibility, transparency and equality across societies impacted by their technologies. He considered for example how the digital economy had exploded and witnessed tremendous growth during the Covid-19 pandemic. Poverty had increased due to the decrease in wages, compared to the stock growth of these technology industries.

While he emphasised that to reach the goals stipulated in the Sustainable Development Goals by 2030, emerging technologies will play a central role, he also identified the trade-offs (i.e. automatization of industrial processes versus employment of workers). Due to these, numerous principles of AI were being championed by the OECD, UNESCO, etc., to guide the development and deployment of AI. Unfortunately, AI Ethics and AI for Good provided weak tools in comparison with the momentum of technology development. Another step towards sustainability was to focus on the operationalizing of AI principles (see for example the IEEE's standard-setting). This step could be seen as soft law, as compared with hard law as implemented by the government. The former though is much harder to enforce, but it can benefit from effective governance by all countries who are interested to reap the benefits of these emerging technologies. He noted, once again, the unfortunate misalignment between the speed of technology development versus the slow pace of creating and implementing ethics guidelines and legislation. This encompasses the fact that the trajectory of the digital revolution is drawn towards surveillance capitalism, the weaponization of digital tools, and the inability to recognise opportunities for international cooperation. An unfair situation arises allowing technology companies to reap the benefits of the technologies they deploy, without taking responsibility for the societal costs. The G20 recently endorsed the minimum 15% tax to be applied to these industries.

Mr Wallach ended his presentation on the note that policies and new approaches by governments– for being flexible and adaptive – were imperative! Towards contributing to this, an Inequality Initiative had been established at the Carnegie Council for Ethics and International Affairs, due to the concerns that AI exacerbates structural inequalities, creates new forms of inequity, and negatively impacts

society. He established that value reset, soft law and well-designed policies and government reforms, could nudge the technology trajectory onto a sustainable path.

Arthur Bezerra

Artificial Intelligence, class, gender and race [9]

Arthur Bezerra began his presentation by stating that any discussion on AI policy and ethics, is intricately connected to the legal, cultural and technological questions, which are all embedded in the political economy of our societies. Information accessibility is closely related to educational accessibility. Conversely, in capitalist societies, education costs money. He held that when we are talking about policies related to AI practices that are more inclusive, we have to consider the conditions that make information accessibility more exclusive. Although AI technologies provide advantages, it also deepens inequalities and forms of oppression of groups that are the most vulnerable in societies. For example, the zero-rated practice is an example of a direct link between information access and economic power. This can be very concerning, for if one has access – at no data cost – to some social media platforms that are part of the business agreement, however, if one has no or restricted access to the general internet, then they cannot check whether the information they receive on the social media platform is accurate or fake.

Hence, fact-checking becomes a privilege, available only to those who can pay to have access to information. Mr Bezerra mentioned examples of racial bias and facial recognition, together with the dystopia illustrated in the movie *Minority Report*. Other examples of information invisibility based on race, gender, class, employment opportunities, cultural events and the recommendation of romantic partners in dating applications were also given. According to his presentation, the big technology companies – who profit from these technologies - do not seem to take any responsibility either for the implications on mental health and wellbeing or the addiction that accompanies the constant usage of devices and applications. Shockingly, this addiction is encouraged by companies to improve usage. Therefore, information accessibility mutates into a form of information dependence where everyone feels the need to be constantly updated.

In light of this, Arthur Bezerra highlighted the recent initiative (2020) taken by the Chinese Government to create the first set of standards for the regulation of the use of algorithms in the world. The key purpose of this was to ensure that algorithms follow principles such as ethics, fairness, openness, and transparency and also because special care is expected in the creation of users' classification models together with the endeavour to avoid using harmful and discriminatory

information. Additionally, this initiative was taken so companies avoid promoting compulsion or addition in the use of these services. Similarly, in Brazil, one can find an example of collaboration between government and civil society for the elaboration and implementation of a set of information policies aimed at digital technology. This was built around three pillars: 1) users' privacy, 2) net neutrality and 3) the non-input ability of companies that own digital platforms.

Thus, the strengthening of collaborative ties between governments, companies, and civil society, is even more important in the search for a more inclusive and less oppressive technological structure.

Yves Poullet

Do we need regulation of the digital platforms? An EU approach [10]

This contribution focused specifically on very large online intermediaries and social media and e-commerce platforms. and that these companies combined own 10% of the market. Yves Poullet pointed out that the EU functions as a gatekeeper between the technology companies, businesses and consumers – serving as a bottleneck – for important digital services. He argued it to be a justified opinion for a regulatory initiative from the EU public authorities, the reason being that the ubiquity of the presence of the technologies in our daily lives and different activities leads to an unprecedented collection of vast collection of personal data, significantly impacting our liberties. However, this is not the only risk. Other risks include:

- The risk to collectivities, for example, profiling people
- Threats to societal interests
- Treats to the environment, for example, abusive conceptions of energy
- Threats to democracy, for example, the recent Cambridge Analytica case
- Systemic risks, for example, the shifting of public opinion and online trade. The companies must therefore consider the potential misuse by the recipient and take appropriate action to mitigate concerns.

In the absence of effective regulation and enforcement, EU authorities can set the rules, raising the notion of the platforms' social responsibility and asserting their obligation to assess their system. He guided how to regulate these platforms by looking into an EU disinformation case with specific reference made to the GDPR. Mr Poullet referred to two options- self-regulation and co-regulation. He also shed light on the EU Commission's *Guidance to Strengthen the Code of Practice on*

Disinformation in which the Commission noted that a new stronger code is necessary to regulate the companies making money from disinformation, whilst also fully preserving the freedom of speech.

Following this, he introduced a Draft regulation on Competition- known as the Digital Markets Act, 2020. He stated that it was issued by the EU keeping in mind that the concentration of revenue and economic power can be as dangerous as the concentration of political power, leading to social unrest. The DMA 2020 was issued to mitigate this because there was a need for a better-founded taxation model, a need to have interoperability and international standardisation measures and a need to apply competition rules which take the transversal value of information into account.

He also stated that according to DMA, a gatekeeper must operate a Core Platform Service. CPS consisted of essential services in our digital world offered by very large platforms and included search engines services, social media networking services and information platforms, cloud computing services etc. The regulation should be available only for gatekeepers through asymmetric legislation with three criteria to define these gatekeepers: 1) they must have a significant impact on the market, 2) they must play a gateway role between business and individuals 3) they must have an entrenched and durable position. This regulation must be founded on legitimate reasons, such as the fight against disinformation, profiling, and anti-competitive or discriminatory practices. In conclusion, regulation for digital platforms is needed if we want to keep a lively democratic society respecting social justice imperatives.

Emma Ruttkamp-Bloem

Actionable meaningful AI ethics policy [11]

Through her presentation, Prof. Emma Ruttkamp-Bloem reflected on the UNESCO Ad hoc Expert Group on the Ethics of Artificial Intelligence (AHEG), which includes broad and global stakeholder consultations. She submitted that the revised version had been submitted for finalisation during May/June 2021, with a possible adoption during the UNESCO General Conference in November 2021. The most important consideration was for it to be considered as a recommendation for a global instrument on the ethics of AI. Its focus areas include gender equality as well as the protection of the environment and ecosystem.

Next, Prof. Bloem highlighted the challenges that have arisen in the process of achieving a global instrument. Two specific challenges have been highlighted:

1. Reality does not necessarily reflect the goals, values and principles mentioned the draft;

2. The exclusion of low-and middle-income countries from most international discussions on AI and AI ethics has different implications

She held that considerations then not only include representation of a diversity of values and ethics in AI, but also the adherence to policies, should regulations be implemented. An extremely important point to be considered and integrated is the recognition of diversity in value representation to ensure inclusivity in the final recommendations.

It was noted that the AHEG followed some basic rules to guide its research, consultations and ultimate guidelines. AHEG focused on internationally agreed mechanisms, such as the Sustainable Development Goals. Moreover, it focused on human and environmental concerns that essentially emphasise the urgency of the implications of AI. Various values and principles have been included in the draft recommendations, and there has been a commitment to find the middle-ground between the diverse collection of values and principles[12].

She pointed out that of core importance is the possibility of actionability, and this has been attended to by different policy areas and instruments for monitoring and evaluation.

Prof. Ruttkamp-Bloem also addressed the major area of concern when speaking of AI and that is the Nature of Ethics. Together with this, accountability, diversity of vulnerable groups, education, bias, exploitation and inequity, and ecological concerns were also raised.

James Brusseau

Artificial Intelligence Ethics decentralised and accelerated [13]

James Brusseau opened his presentation with the statement that it is essential to not only consider "Information for All", but also **information at all**. This is specifically of relevance in the discourses about AI and the human condition, as it is difficult to get a real sense of what is happening in this space of interaction. He provided us with an example of a hospital in Italy during the Covid-19 pandemic, where they would be overwhelmed by a large number of patients but not enough radiologists to analyse their chest x-rays, thus assisting with a diagnosis. To mitigate this, the idea was proposed to develop AI to assist with these analyses, however, there was a lack of training data to make this work, which specifically entails the usage of patients' health data. Therefore, in the consideration of strictly adhering to privacy considerations, some of these "restrictions" had to be loosened to allow access to the information for the training of AI and to further serve a greater social purpose. Mr Brusseau held that it is an arduous task that takes very long, but AI and emerging technologies are sprawling across

all aspects of our personal and professional lives. Owing to this very reason, our traditional ways of doing AI Ethics and considering our human condition concerning technology simply cannot keep up.

He suggested that a solution to this is to propose decentralising AI Ethics- an attempt to create ethics knowledge on a vast scale and rapidly, to make humanist information available and accessible to everyone everywhere. There are three steps to this goal:

- The source of the information – decentralised versus centralised – means that AI ethics no longer start with experts, but instead with common public information;
- Evaluation – with decentralised AI ethics, this step starts with machine learning and natural language processing and not necessarily with experts. Here the vast amount of available information can be analysed with metrics that are universally accepted amongst personal (i.e. autonomy, privacy), social (i.e. fairness, social well-being), and technological principles (i.e. performance, accountability).
- Implementation- The complexity of academic research and consultation together with the processes of publishing findings and recommendations, then engaging with expert groups (governments and agencies) to develop and implement regulations and laws, causes a lot of delays. With decentralised AI ethics, the implementation will be in real-time. This will entail getting a large amount of ethical data out to the public, which is a critical element to solve the problem of AI ethics that is too slow and behind.

In conclusion, current methods for evaluating the human benefits and risks of AI cannot keep pace with the technology's dissemination. Decentralised AI Ethics proposes to solve the problem using AI to apply AI ethics to AI intensive companies.

Louise Pryor

Ethical Data Science [14]

Louise Pryor opened her speech by describing Actuaries as problem solvers and strategic thinkers who use their mathematical skills to help measure the probability and risk of future events. She noted that actuaries – who not only work in the financial sector but other industries – had been working with large amounts of data since the 18th Century. Actuaries are keenly aware of the ethical dimensions of their work, big data and AI, and how these for example impact notions of privacy. Due to the rapid growth of these emerging technologies, actuaries need to keep up to date with the growing and challenging ethical issues.

She identified that the public's interest must be upheld and to achieve this, the Royal Statistical Society (RSS) and the Institute and Faculty of Industries (IFOA), have collaborated to compile "A Guide for Ethical Data Science" [15]. Five key themes are identified in this guide:

- Seeking to enhance the value of data science for society
- Avoiding harm
- Applying and maintaining professional competence
- Seeking to preserve and/or increase trustworthiness
- Maintaining accountability and oversight

Her speech settled that these themes could not be seen in isolation from each other. She provided examples provided of how AI and big data – and emerging technologies – could go wrong. Together with these issues, such as bias based on race and gender, solutions were provided. On a concluding note, she stated that good governance and ethical oversight will help address these issues and that both the implications and the source of these concerns need to be managed ethically. Therefore, the designers of automated systems must consider what the impact of their decisions will be on society and the environment. There was immense scope in applying the guide, which was complemented by the recognition that we must consider the whole picture offered by AI, including its benefits and challenges.

Marjorie Ngwenya

Ethical Artificial Intelligence and Consumer Protection [16]

Marjorie Ngwenya's presentation specifically focused on the role businesses can play in resolving the issues presented by AI. She referred to a study by the Ottawa Citizen which illustrates the amount of data that has been collected on Canadians by Meta, Google and Twitter. Based on the results of one person who willingly participated, the amount of data that was downloaded by this individual came to roughly 1.66 gigabytes (compare this to the average Kindle ebook which is 2.6 megabytes!). Combining the amount of data available with AI, the scale was compounded.

In her presentation, Ms Ngwenya reflected upon the importance of the Ethical application of AI for consumer protection. Notwithstanding the numerous existing regulations and guidelines on the ethics of AI, what exactly constitutes the ethical application of AI and which standards must be met? Three

options include transparency, equity, and privacy. Each of these ethical considerations was expanded on together with examples.

She stated that responsibility in an AI context concerns how the key issues and challenges of AI can be managed, particularly about consumer protection. Five ways in which consumer-facing organisations can move the agenda forward were recommended:

1. Create internal frameworks that outline a company's data stewardship
2. Data and model transparency requires attention
3. Education is required for all stakeholders
4. Dedicated risk management and investment are required due to the rapid development of AI
5. Independent and third-party reviews of a company's practices must take place

In conclusion, AI brings with it several complexities, but together with this it also provides opportunities for businesses to engage with it in a socially responsible and inclusive manner. The multi-Stakeholder collaboration will be at the core of the way forward.

Danielle A. Davis

AI, decision-making and the role of human judgment

This presentation considered AI and its role in society, as well as the ethical and legal implications on marginalised communities. Danielle A. Davis held that though AI is applied ubiquitously in our modern society, AI intelligence is not inherently more accurate, fairer, or less biased than humans. Therefore, how we treat artificial intelligence needs to account for this reality. This is particularly true when the data that is being used mirrors existing social inequalities. Reimagining diversity and inclusion efforts could help mitigate the current biases we are seeing today such as not to further entrenching the divides and exclusions experienced by marginalised and vulnerable societies.

In her speech, Ms Davis identified that in terms of ethical concerns, there are three buckets in which these can be categorised. They are 1) the privacy and surveillance bucket, 2) the bias and discrimination bucket, and 3) the role of human judgement. Each of these contain their complexities and consequences. However, an umbrella question arises which should be prioritised: "Can smart machines outthink us"? Or, are there human elements that cannot be replaced by AI and are indispensable to our daily engagements, such as liberty? The latter point is argued to be essential.

However, we must ensure that it does not negatively impact our rights such as freedom of expression, nor promote bias.

Conversely, it must be acknowledged that AI does have its advantages because it assists with decision-making. The more society – consisting of both individuals and organisations – is informed of both the challenges and benefits, the better they will understand the ethical and legal implications. Inclusivity and diversity should be incorporated from the onset of any AI-related project to ensure bias is mitigated.

Golestan Radwan

Egypt Artificial Intelligence Strategy [17]

The presentation by Golestan Radwan highlighted the relevant aspects of the UNESCO Ad Hoc Expert Group (AHEG) on Ethics of AI's recommendations, insofar as it pertains to the topic of Artificial Intelligence for Information Accessibility. An overview of the draft recommendation document was provided, which is also available for download [18]. In the preamble, the context is situated whereby it primarily covers the broader ethical implications of AI in UNESCO's central domains of work (Education, Science, Culture and Communication and Information sectors).

It was discussed that when access to information is considered, several elements come to mind, such as transparency, journalism, social media, privacy, freedom of expression, mis- and disinformation, media and information literacy, ethics, etc. However, there is an even wider perspective that comes to mind when we consider access to information, namely, the right to know or the right to be informed across all other domains of application. An example includes healthcare, which also contains the implementation and usage of AI and automated systems. This extends to not only health practitioners, but also the designers of the technologies, insurance companies and patients. Especially when looking at the last example, at what point is it acceptable or unacceptable, to inform a patient of a certain prognosis based on probabilities because of AI, especially if there is a likelihood of error? How is this information communicated, and how will the patient understand how the system works that provided this information? It is therefore evident that the concerns do not just extend to information, but also to explainability of AI systems, technical limitations, and advances in the systems, as well as legal and liability issues. She noted that all of these are covered in the draft recommendations.

Ms Radwan drew attention to another broader dimension that arises when looking at AI ethics and access to information. This is access to AI knowledge itself, which is mostly confined to high technology industries in developed countries. Unfortunately, due to the proliferation of AI in our lives across all

sectors, it also influences marginalised and underrepresented groups. The digital divide is therefore not only maintained but it is also amplified. Based on the foregoing, the draft recommendations emphasise human rights. She stated, however, that the notions of additional human rights – such as the right to know in terms of AI systems – are not something that can easily be added to, since it must adhere to the Universal Declaration of Human Rights and be formally included in the declaration. It may be a good argument in itself, but it does delay progress and inclusion of these 'emerging' human rights as the technologies continue to advance.

Although values and principles are contained in the draft recommendations, another section is dedicated to policy actions that pertain to the Communication and Information Sector of UNESCO. This section focuses on bridging the digital divide and improving access to information, and also how AI should achieve these requirements.

She concluded that it is evident that information access is present in nearly all sections of the recommendations on the ethics of AI. It is imperative to regard this document as a living document that will need to be reviewed regularly every few years.

Felipe Chibás Ortiz

Artificial Intelligence, Policy and Ethics: Free related issue in post-human society [19]

Prof. Felipe Chibás Ortiz, in his presentation, asked, what do people understand by AI, ethics, and public policy? He further explored the multiple relationships between these three elements which have also been discussed in detail in the book "From Smart Cities to MIL Cities", containing metrics inspired by the vision of UNESCO" [20], edited by him and Mitsuru Yanaze [21].

He discussed that due to the advances in technologies in the field of AI, compounded by the Fourth Industrial Revolution, all sectors of society have been impacted. This impact called upon the need to evaluate existing policies, strategies and ethics guidelines not merely to mitigate the risks these technologies pose, but also to guide best practices. He also questioned whether the cities we call 'smart cities' prioritise ethics in their development? The need for governments to collaborate with specialists and researchers in the field, to ensure the policies encapsulate ethical principles, and to further guide projects, programmes and activities, was discussed in this presentation. Examples included the lack of policies promoting transparency of the design and development of AI technologies in telecommunication and tech giant industries; the identification of discrimination based on gender, religion and race, as well as the occurrences of fake news, hate speech and restrictions in freedom of expression.

Prof. Chibás Ortiz suggested Ministries, or Departments, of Justice, prioritise regulation and legislation, with clear guidelines for responsible and legal behaviour, with consequences and punishment stipulated if contravened. He concluded that despite living in a 'post-human' world, we believe that technology can solve any problem humans may have and this is the greatest mistake we can make. We need multicultural, transdisciplinary and multi-stakeholder collaboration, policies, and solutions.

Mohammed El-Guindy

Malicious use of Artificial Intelligence [22]

The presentation aimed to shed some light on the malicious use of AI (MUAI) and the implications on national security. The legendary Alan Turing (195) had asked the question "Can Machines Think?"

Mohammed El-Guindy stated that the answer to this was far from simple and therefore required a philosophical debate. He said that intelligence is a controversial topical, especially insofar it pertains to man-made machines. Classification also becomes both complex and necessary, which is why specialists classify it as weak, or narrow AI, strong or general AI, super AI, or self-aware AI. Sure, AI has contributed to the distribution of the world, but it can also be used in a beneficial manner, i.e in strengthening national security.

Reference was made to the Capacity Building Programme of the United Nations Office on Drugs and Crime [23], which uses crime analysis and prediction tools for investigation purposes. Think for example of facial recognition to identify human traffickers and terrorists. However, every coin has a different side. Whilst AI can prevent crime, AI can also be used by criminals to increase their activities and efficiency. Mr El-Guindy discussed the book by Pedro Dominquez "The Master Algorithm: How the quest for the ultimate learning machine will remake our world" which discusses the ability of criminals to become supercriminals! He pointed out that AI can be used in three malicious ways: 1) cybersecurity, 2) physical security and 3) political security (computational propaganda). Each of these instances was elaborated on during the presentation.

Two important initiatives that contribute to addressing the concerns together with providing potential solutions were also emphasised, during this presentation. These initiatives were:

- The UNESCO AI Initiatives [24]
- The IEEE Ethically Aligned Design [25]

Furthermore, Mr Mohammed made specific recommendations:

- Universities should implement Information Ethics, AI Ethics, Law and Cybersecurity in their curricula
- Policymakers and researchers must understand the malicious use of AI
- Regulation and best practices should be addressed with dual-use technologies such as AI

He closed his presentation with a quote from Norbert Wiener which states that "The world of the future will be an ever more demanding struggle against the limitations of our intelligence, not a comfortable hammock in which we can lie down to be waited upon by our robot slaves".

References

[6] https://www.youtube.com/playlist?list=PLTULETeBko5GUuVnfR0azmdQ8mGoS6r9Q

[7] https://www.youtube.com/playlist?list=PLTULETeBko5GUuVnfR0azmdQ8mGoS6r9Q

[8] https://youtu.be/AHPFU5VwRto

[9] https://youtu.be/MMlS3AkpQBw

[10] https://youtu.be/lZ9FeBqOLq8

[11] https://youtu.be/ILxUpoAhkHc

[12] https://en.unesco.org/artificial-intelligence/ethics

[13] https://youtu.be/Sl6yBGuuSGg

[14] https://youtu.be/HHucb3OcXKk

[15] https://www.actuaries.org.uk/upholding-standards/data-science-ethics

[16] https://youtu.be/LVoeeb7UZwc

[17] https://youtu.be/TUieQkV_9Xc

[18] https://en.unesco.org/artificial-intelligence/ethics#recommendation

[19] https://youtu.be/PNzVkUDXRV4

[20] https://en.unesco.org/milcities

[21] https://www.academia.edu/43369259/FROM_SMART_CITIES_TO_MIL_CITIES_Metrics_inspired_by_the_vision_of_UNESCO

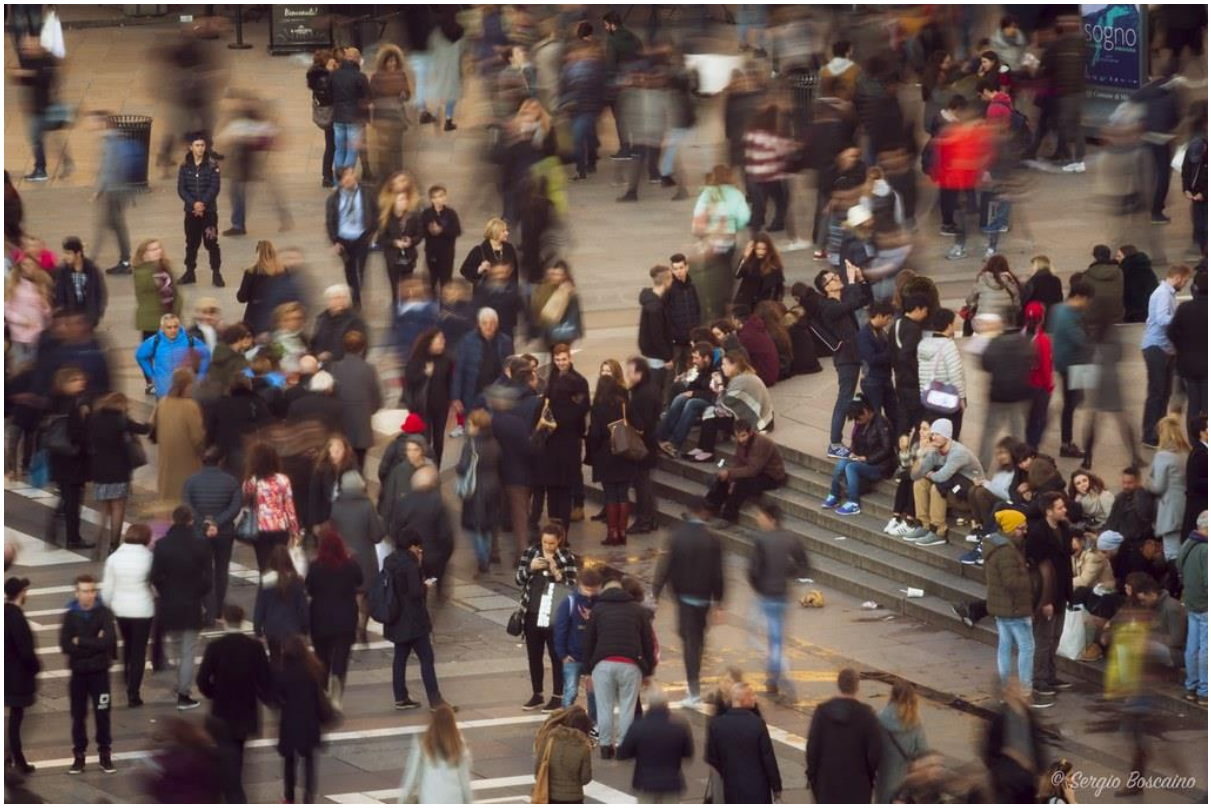
[22] https://youtu.be/mZ4-BwAq2c8

[23] https://www.unodc.org/unodc/en/data-and-analysis/capacity-building.html

[24] https://en.unesco.org/artificial-intelligence

[25] https://ethicsinaction.ieee.org/

8. AI and Society



8.1. Introduction

This thematic area had thirteen presentations that explored notions of law, multi-stakeholder and multisectoral responsibilities, the features of future AI societies and recommendations for bridging divides. The global representation was excellent, with presenters from Jamaica, Mexico, the United States of America, Canada, Germany, and Uganda.

Prof.Verene Shepherd discussed the 'computer must have gotten it wrong' and the various excuses that are made to (silently) condone bias and prejudice. She stated that this excuse has been used for the misuse, and oftentimes abuse, of AI. These instances are observable especially within law enforcement agencies, extending to predictive policing based on facial recognition, data harvesting and data surveillance, all of which contribute to the profiling of citizens. She noted that with any advancement, there are related opportunities and risks. However, for this very reason, media must play a critical role in society. Since mass media can mitigate some of these concerns, they must be used effectively as a tool for advocacy, education, and public awareness.

The question *Can transparency restore accountability* was posed by Vijay Chauthaiwale and the presentation opened with the oft-quoted statement "with great power comes great responsibility". It was discussed that this responsibility is very much on the shoulders of developers, who must ensure due consideration is given to the design of algorithms and autonomous systems. One of these

concerns pertains to how the algorithms work, which leads to the notion of the uninterpretable “black box”. A call was made for transparent AI and the governance of organisations that develop, design and implement AI.

Inaccessibility of data, especially if it concerns the local communities from when it was originally collected without them owning the data, is what is meant by the term colonised data. Nithya Ramanathan problematised such colonisation and called for the decolonizing of data. This can be achieved by advocating for countries to own their data, ensuring countries are involved in the decision-making about their data and promoting standards such as interoperability.

Following data colonisation, Scott L David presented on the rise and demise of computational sovereigns and the emergence of verified information community environments. He compared the extraction of electronic resources to the historic e*xtraction of resources in a colonial setting, even if there was consent*. Currently, if you control the data, you control the data. He argued that we need to consider the meaning of concepts and values, such as the inherent differences between access and accessibility. If you do not get the meaning of information, even if you have access, it will not be useful to you. In essence, equity remains a big focus when discussing the actual aim of ethics insofar as it is applied to AI and emerging technologies. Although it is noted that ethics should not be conflated with legislation, it is worthwhile considering how equity can be promoted across societies. Community is the most authoritative source of where identity comes from. Perhaps then one day, after the computational sovereigns, humans will come back and explore the notion of the “human” community again and the knowns and unknowns of what it means to be human. In this instance, it is possible to consider that AI is giving us a common challenge to ask, “Whom do we want to be”? This is a great question to ask a human species.

Seynabou Ndiaye explored how AI can be a tool to bridge equality gaps whilst acknowledging that it has certainly contributed to the creation of gaps. She provided examples of AI’s contribution to improving literacy, providing access to applications about healthcare information, agricultural practices, resource allocation and consumption, as well as the streamlining and delivery of essential services. Notwithstanding the models and technologies that achieve social good, concerns are compounded by a lack of regulation, monitoring and evaluation. Therefore, it is essential that the public must be informed of AI, its implications and how it works; policymakers must also understand how AI works to better respond to the rising challenges, and standards should be created to improve transparency.

Sheila Beladinejad provided a feminist perspective on Women in Artificial Intelligence and Robotics. She unpacked how digital transformation and AI relate to access to information, the effects of gender

disparity in AI, and finally, she provided recommendations on what can be done to address these issues. Characteristics that contribute to such gender (and even racial, religious and ethnic) disparities, include the type of data available, the quality and accuracy of data, as well as the explainability of algorithms and how it interprets this data. On the other hand, due to the digital transformation, more women should be able to access economic and education opportunities, which leads to the empowerment of women.

The issue of knowledge representation and inclusion was raised by Adriana Labardini when unpacking cognitive justice. She explained what is meant by this type of justice and linked it to indigenous knowledge and the promotion of co-existence between all forms of knowledge. She argued that AI, and society, need to acknowledge and include knowledge and value pluralism to allow for diversity and inclusive design of emerging technologies. Towards promoting opportunities for small businesses and new market entries by entrepreneurs, Diana Paredes showcased the platform *Suade*, which is a tool – utilising AI – that assists with increasing the capacity of bankers to have better access to information. By employing Agile Regulation Technology, stable and well-informed financial services can contribute to stable societies. Financial technologies, and the regulation of these technologies, assist with agile governance because it not merely promotes responsibility for profit, but it also seeks to improve digital infrastructure and services.

A very informative and technical presentation on algorithmic effectiveness was given by Chuck Howell. He discussed how Sociotechnical Systems (STS) will enable the right to know and improve mitigation efforts to reduce harm in an autonomous system. On the concept “Left of the algorithm”, he explained that it implies that checks and balances need to occur before the action takes place. He indicated that participatory design is essential in the early design phases of algorithms. Such an inclusive approach helps in understanding how AI systems affect, and are affected by, social constructs, assumptions, and individual and collective behaviour.

Hero Laird’s presentation on *Ethics, Artificial Intelligence and the Law: A truth about stories*, made the argument that if technology can affect law, then it means the law can affect technologies. How do stories fit in? Ms Laird explained that we co-evolve with technologies, law, and other constructs in society, These constructs influence the narratives we use and apply to current contexts and shape our interaction with one another and AI. We need to ensure that as humans, we continue to shape society and know what it means to be human, without letting AI shape/define this for us. The role of the society was echoed by Susan Juliet Agwang who represented a pan-African civil society organisation. She held it crucial for us to utilise tools – such as AI – and align our actions towards achieving the

Sustainable Development Goals (SDGs) as well as towards the observance of Article 19 of the Universal Declaration of Human Rights (UDHR).

Claire Nelson took us on a journey of future decision-making, tools, industries, education, and elderly care as found in the age of AI. Her journey extended beyond the SDG goals of 2030, into 2050 and beyond. Elaborating on the vast array of these services, she said that although these opportunities sound exciting, we must be ready to meet this future by getting smart and being equipped with the right attitude and abilities. How do we cultivate these attitudes and abilities? Jason Lewis presented *Future Imaginaries through indigenous Artificial Intelligence*, by basing it on his culture and how it is imagined – visualised, enacted and presented – in an AI-informed society made accessible in one's mother tongue.

8.2. Overview of presenters

Verene Shepherd

The computer must have gotten it wrong: Artificial Intelligence and Racial Profiling [27]

The presentation intended to identify how the excuse "the computer must have gotten it wrong", has been used to misuse AI. Even law enforcement is guilty of this misuse, and hence the media must remain vigilant. Our global communities have been propelled into a new phase of development due to the advances in technologies and the establishment of global social media platforms. However, one should not forget that the same platforms and the application of AI advance our global citizenship, and also differentiate us – and collect our data - based on our gender, race, religion, cultural backgrounds, etc. Prof. Shepherd stated that our identity is "as unique as our fingerprints".

She went ahead to consider the scope and depth of access to data that law enforcement agencies have on citizens, including images and personal information. This data is not only gathered from social media platforms but also from government databases, financial and health records and surveillance technologies. Moreover, with increased pressure by forms of terrorism and migration of refugees and asylum seekers, the use of AI decision-making tools, may inadvertently contribute to increased racial profiling against ethnic minorities. Stereotypically, black, and brown communities are targeted due to racial profiling. She discussed that with these tools, the possibility of algorithmic bias will always occur when used in a law enforcement context. Reference is made to the Committee on the Elimination of Racial Discrimination (CERD) General Recommendation 36[28], adopted in 2020. This recommendation seeks to address the growing international human rights concerns regarding the use of facial recognition software in law enforcement.

With any advancement, there are related opportunities and risks. However, she called upon the media to play a critical role in society. She insisted that the media must provide information to the public on the related policies and legislation so the public is well-informed of their rights. Mass media is a tool that allows for all forms of leadership to remain accountable to its citizens and in the digital society, the media plays an even greater role! Therefore, the costs and benefits to society of these emerging technologies must be calculated. It must also be ensured within policies, regulations, and legislation, that these technologies are designed and used objectively, efficiently and devoid of prejudice and abuse. It is the role of the media to keep leaders honest, promote advocacy, and keep the public aware of the implication of these technologies on their human rights.

Through her presentation, Ms Shepherd conveyed that in the absence of public awareness of human rights – and potential abuses such as racial profiling – the ability of citizens to question abuses and demand reprieve, is threatened. Hence, the media bears two burdens: 1) they have the responsibility of informing the public of instances where state actors have impeded human rights, and 2) they have the responsibility to promote international human rights conventions and support the advocacy of human rights defenders.

In conclusion, it is up to us – as global citizens – to correct the faults in the programming of AI tools towards ensuring that everyone can enjoy their freedoms, rights and security in peace.

Vijay Chauthaiwale

Can transparency restore accountability [29]

Vijay Chauthaiwale opened his presentation with the quote: “With great power comes great responsibility”. This is especially true about AI which is already part of our personal and professional lives and integrated across public and private sectors. Accountability is a very important component in any AI policy, it means there is someone responsible for the AI design, implementation and responses. There is still a question concerning how the algorithms work, which has led to the notion of the uninterpretable “black box”, or the accountability gap.

In his presentation, Mr Chauthaiwale emphasised how the human workforce is being replaced by an autonomous workforce but also questioned how this latter workforce be held responsible should something go wrong. How will one be able to explain the AI’s decision-making? This black box concern has led to numerous initiatives that address the need for explainability and transparency of AI, for example, the GDPR’s “right to explanation”. Promoting algorithmic accountability is the primary contributor to explainability, for it also encourages access to information. Explainability also requires

a provision of how certain parameters are utilised in the design of an algorithmic system, for the concept in itself does not ascertain those inferences made are wholly accurate. This might be due to flawed data that has been input into the system, which will lead to flawed results and/or decisions. An explanation is therefore not exactly equivalent to transparency. This leads to the inclusion of the principle of fairness which is closely connected to transparency. And subsequently, fairness leads to legal considerations such as liability should an AI system be opaque or make wrong, inaccurate, or false decisions.

In conclusion, he said that the call for a transparent AI system is justified whilst accountability promotes answerability. Achieving this will not be an easy task; hence governance, multistakeholder-collaboration and management of AI systems need to take place throughout the entire lifecycle.

Nithya Ramanathan

Decolonizing Data [30]

A footnote to the presentation is made that it contains excerpts from the Skoll Forum 2021 conversation "Decolonizing Data" [31] *:*

Data is increasingly at the core of the social impact sector. However, there is a pernicious pattern of data colonialism in today's commercial tech ecosystem. As social entrepreneurs, we are committed to shifting power to the communities we serve and need to actively fight the forces of data colonialism. Join this fireside chat for a deep dive into data colonialism and a discussion of methods to resist—and reverse—it.

In her presentation, Nithya Ramanathan answered what "Decolonizing Data" means and how it relates to "data colonialism". She defined the latter concept as when one entity claims ownership of data that is produced by others or for others. A disturbing trend is arising whereby organisations – albeit with bonafide intentions – go to a country or region and collect data from others (such as health data) and keep this data to be utilised for analyses. They in essence derive value from this data, at the expense of the originators, such as local communities. In extreme cases, some of the data is taken without consent and even published privately without being made public. This loses the context of the local communities and/or countries from where the data has been taken and is utilised for decision-making without the knowledge of the originators.

Consequently, the following question arises: "How does data colonialism reinforce traditional colonialist thinking and structures"? Ms Ramanathan considered as examples the removal of

resources without consent, the formal systems in place that enable this extraction, and the rhetoric of how this is contributing to progressive research and monitoring and evaluation processes. And finally, similar to the extraction of primary resources that are extracted from one country but refined in another country, the same pertains to the extraction of data from one country but analysed and used in another.

Hence, emphasis was placed on the fact that, data is knowledge, is power, and is money and that each of these steps is value-laden and ultimately leads to economic gain by the 'data colonialist'. She stated that understanding the fundamentals of disrupting data colonialism will assist with finding restitution. These include: 1) countries should own their data 2) they should make the decisions about the data and 3) contain standards such as interoperability.

Moreover, she took the example of Nexleaf [32] as one of the organisations that partner with countries to ensure they have the data they need to build lasting solutions that improve the health of people. Unfortunately, good intentions are not enough, and therefore one must remain vigilant that data is not taken away from the local communities without the knowledge. To support this vigilance, it helps to recognise data colonialism and aspects that are related to it, such as 1) data ownership and data accessibility, 2) benefits of data and data beneficiaries, 3) discerning how the decisions are made and 4) the issuing of a set of data rights [33]. As an organisation, Nexleaf seeks to incentivise high-quality data and high-quality data use by providing steps to achieve these foregoing considerations.

Ms Ramanathan concluded that decolonising data has emerged from indigenous groups concerning their data rights and other organisations dealing in this space. Even though this is an emerging topic, the definitions and concepts are being broadened into different sectors. Thus, we must understand that owners of data own power and by returning data to its actual owners, the data asymmetries can be addressed, and data decolonised.

Scott L David

Synthetic Human Intelligence (SHI) in human history [34]

The presentation looked into the rise and demise of computational sovereigns and the emergence of verified information community environments. The context was sketched of how humans adapt to a changing (information) environment, with specific reference made to us being "homo sapiens sapiens sapiens" which translates into "those who know, that they know, that they know". Scott L David then argued that the power of the human species is not physical, but rather an information. Certainly, we are not as strong as certain animals.

Mr David dove into the concept of humans as sovereigns, whereby sovereignty entails being an entity that neither needs to ask permission nor forgiveness. He gave examples of such sovereigns nation-states, corporations, property, etc.) and stated that due to moving from physical beings to information beings, we also see the move from physical to information sovereigns, where the efficacy of our information development and utilisation of ICTS (including AI and other emerging technologies) constantly increases. The question, therefore, arises as to how do we manage these computational challenges, and how do the crypto-based systems manage us?

He argued that there is a need for new sovereign stories to enable humans to shift from physical to information beings, which allows for a space to consider the implications of computational sovereigns, information goods and complexity. This is certainly a unique period in humanity's history, where the internet and ICTS have raised new information risks which did not exist before. Two main problems that are new and unique now are: 1) the blinded hierarchy power, where all human organisation is hierarchical which leads to centralised information flows, and 2) the "flood of interactions" problem whereby there is an exponentially increasing volume of interaction with ICTs. To counter these problems, Mr David recommended that communities of "self-interested" parties de-risk together. He suggested that this might be achieved by having sustainable and resilient systems which are based on notions of risk mitigation and leverage (governance by network effect), as well as elevating human cooperation, such as a network "neighbourhood watch".

Currently, computational sovereigns offer only interim solutions which are generalised and based on collected data and programmed algorithms and do not adequately address the unique and specific challenges experienced by humans. Since generality does not necessarily lead to equity, he suggested that post-computational sovereigns might therefore lead to the rise of community-based synthetic intelligent sovereignty, which will need to encompass consideration of scaling issues and promoting (or protecting) self-interest. He concluded by stating that the interoperability of global communities, and the management of intercultural paradox, will be the service that artificial intelligence and machine learning offer to humans on the continuing path to discovering and inventing who we – like humans – will be. This should lead to greater resilience of societies and greater participation within society.

Seynabou Ndiaye

Artificial Intelligence, a tool to bridge equality gaps? [35]

AI has contributed to the widening of equality gaps in the past few years. However, despite concerns about AI's impact on society, it has the pa powerful tool to bridge these gaps. The presentation by Seynabou Ndiaye focused on the various ways in which AI can resolve certain equality gaps and contribute toward creating a more accessible world (whether it improves health care or even better food systems).

Some of these considerations include encouraging transparency, the implementation of ethical AI and the adoption of standards and policymaking about AI. Ms Ndiaye also discussed how raising the public's awareness and improving literacy are essential components. She cited examples of AI's contribution, such as to the agricultural sector where there are automated harvest processes, better monitoring of food waste, tracking of food production, etc. Other examples included support to people with hearing impairments, such as real-time translations, which also promote intercultural communication. However, the question remained, if we have all these benefits, why do we also see reports of why AI is dangerous?

To answer this, Ms Ndiaye drew attention to the fact that the people who are developing these models and technologies, tend to be from powerful private institutions and research centres, who may have other objectives (such as profit) than just achieving social good. Most of these advances are usually applied to encourage consumption, and therefore only benefit the tech companies themselves. This is compounded by the lack of regulation of these tech companies, which also use our data to drive their practices to motivate targeted advertising to increase profitability, also known as surveillance capitalism. Other issues include bias in AI, due to the nature of the data input into the data sets, which can lead to discriminatory results. AI and resulting decisions are only as good as the data it is based on. The abuse of power and resources by the tech companies is a result of a lack of consequences and having more policies in place, will contribute to addressing these concerns.

She suggested that policies should contain the following three aspects: 1) raising public awareness about AI and its applications, 2) policymakers need to understand the workings of AI, to better know how to respond to the need, and 3) creating new standards toward improving transparency. In conclusion, there is a strong need for inclusion and diversity in both policy creation and AI development.

Some NGOs are already working towards achieving this, for example, CIFAR's AI Futures Policy Lab Toolkit [36].

Sheila Beladinejad

Women in Artificial Intelligence and Robotics: A feminist perspective [37]

The presentation focused on elements of AI, its applications and challenges; how digital transformation and AI relate to access to information; the impact of gender disparity in AI; and what can be done collectively to address inaccessibility to information for the marginalised population. Together with this, Ms Shiela Beladinejad provided an overview of "Women in AI & Robotics" [38], their mission, programs and how one can collaborate.

Quite importantly, AI was explained to be an umbrella term that contains a suite of technologies in which computer systems are programmed, such as AI itself (AI-computers that can imitate human intellect and behaviour), including machine learning (ML-statistical algorithms enabling AI implementation through data), and deep learning (DL-subset of ML using neural networks by using unstructured data). These different levels are important to consider because AI is embedded in a range of decision-making processes where women are not well-represented. She stated that by looking at these different levels, it becomes evident to what extent this exclusion is present, and the depth to which this must be addressed to address gender disparity. To illustrate this exclusion and disparity, she provided statistics, for example- according to the World Economic Forum, only 22% of the global workforce in AI is female.

It was noted that challenges of AI include the dependency on data and the quality of data (for example, biased input generates biased output), and explainability. There is a host of characteristics of explainability, such as being: interpretable, explainable, transparent, justifiable and contestable. Explainability in this instance is the core component because if an AI system is explainable, it will lead to transparency and accountability in AI solutions/decisions. AI does present an opportunity for women since the digital transformation provides for economic, social, and political growth. Consequently, there are systematic and societal barriers to entry which lead to inaccessibility to information, education, and other opportunities. The book by Mary Ann Sieghart, *The Authority Gap* (2021) [39], was referred to as an elucidating text providing insight into these gender inequalities. Following the barriers, recommendations were made to address the AI disparity for women, and this includes the removal of all barriers to information access, boosting confidence, addressing imposter syndrome and the provision of role models.

In conclusion of her presentation, Ms Beladinejad quoted: "If the people on artificial intelligence tools, products and services do not resemble the society (gender, ethnicity, physical and mental abilities), then their innovation will not have a positive impact on society and there will always be imbalance".

Adriana Labardini

Cognitive Justice [40]

The originator of the term- Cognitive Justice was Professor Shiv Visvanathan [41] from India who promoted the notion of diverse epistemologies. In her presentation, Ms Adriana Labardini provided an overview of the concept of cognitive justice as well as the importance of changing the paradigms of what we deem as knowledge. She stated that Cognitive justice underscores, and directly relates to, indigenous knowledge and argued that all forms of knowledge have the right to coexist, and no form of knowledge can assert itself as the only claim to truth.

Thus, Cognitive injustice included the exclusion of knowledge of women, indigenous people, etc. But now with climate change, we are asking how did indigenous communities relate to and work with nature to be in harmony? Through Land, water, spiritual belief, and alignment. Ms Labardini established that cognitive justice is fighting for recognition with other knowledge as it wants to do justice to other types of knowledge and aims to be extremely inclusive.

She went on to state that there are a couple of guides out there to help guide the analyses of data sets, to ensure bias does not creep in and affect analyses and findings, excluding other minority groups or types of knowledge. Many of these technologies were not designed with safety, privacy, and protection in mind thus, she suggested that we all join with a multidisciplinary approach to support inclusive design.

She concluded that Artificial intelligence needs to acknowledge the need for such pluralism, embed it and thus ensure that it is inclusive and supportive of diversity. Doing so will allow AI to use decentralised, diverse information as an input to its predictions so that they are unbiased and richer in knowledge.

Diana Paredes

Reimagining Finance with Agile Regulation Technology [42]

At Suade [44], artificial intelligence and machine learning are used to increase the capacities of supervisors and central bankers in a way to have better access to information. The aim is also to increase capacity and access to information for the betterment of society, as a stable financial system means a stable society. Using AI and ML does help with building back better, as we have seen with the devastating impact of the Covid-19 pandemic, but also our capability as a global society to act together to be more efficient. There has been a big, coordinated effort which is inspiring. With the collection

of analytics, these are being sent back to the regulator to help improve the standards of digital regulatory reporting.

Ms Diana Paredes stated that following the financial crisis in 2008, many systems were put in place to help support the financial system to become more stable. She noted that based on the experience of 2008, regulation has improved. Now, it could leverage Covid-19 to ensure that financial firms become more agile and prioritise digital infrastructure and services. So, both financial and health crises have contributed to regulation improvement and better data standards. Inadvertently, better data standards lead to better software. These considerations contribute to discussions around *fintech* – financial technologies – and *regtech* – regulation of technologies. As an example, you want access to data, but you must also regulate how that data is used and managed so as not to contravene people's rights.

She summed up her presentation with the prioritisation of responsibility for profit, stating also that access to data has importance, not merely due to its contribution to the creation of good technologies, but also because it allows one to act on the frontiers of development allowing for agility through efficiency and coordination. These considerations encompass what is meant by agile governance as discussed by the World Economic Forum [44]. Utilising AI is not only a utopia but a reality, however, this reality must contain freedom of access to information without jeopardising the economy. To achieve this, agile regulation is required which does not prevent innovation whilst protecting society.

Chuck Howell

Enabling the Right to Know "Left of Algorithm": The need for early Sociotechnical System (STS) considerations [45]

A quote leading this presentation shed light on the theme: "We must be careful how we fix what we do not understand", by Fred Brooks in *The Design of* Design. Chuck Howell started his speech by emphasising the importance of the AI4IA Conference as it introduced AI into consequential complex sociotechnical systems (CCSTS) [46], impacting people's lives. He noted that complex is differentiated from complicated, where the former refers to emergent behaviour, feature interaction and subtle coupling which leads to how AI systems affect, and are affected by, social constructs, assumptions, and individual and collective behaviour.

Looking to the left of the algorithm implies that checks and balances need to occur before the action takes place. He took for example the prevention of fraud in finances: whereas the initial focus on detection would have occurred during the payment process, and if fraud had occurred, the payment

would have been recovered and/or fraud investigated, the detection and prevention must occur sooner on the continuum. This involves having appropriate statutes and policies in place during the programme design, have fraud and error detection during an applicant's preparation as well as during the processing phase. Should a potential error or fraud be detected before payment is effected, then the payment can be stopped in time. This saves both time and money and reduces opportunities for fraud to occur.

One of the approaches towards achieving this, particularly in the design phase, is a participatory design that considers inclusion and recognition of diversity. In other words, it can be phrased as "no about us without us" [47]. This will help to address racial, class, gender and cognitive biases within an algorithm and examples are provided of this occurring within a health system [48]. Looking at data and models alone is not sufficient since the cost of a health system and consequent health care is not race-neutral.

Another aspect is the right to know versus the capacity to know, where the roles of trusted proxies in representing operators and stakeholders come into play. Unfortunately, everyone cannot engage individually with every aspect of a system, therefore some proxies represent various stakeholder interests during these social constructs.

Thus, it is imperative that these systems, and proxies, should be transparent to promote trust and confidence. It is not just about Explainability, but the right to know in itself [49].

Hero Laird

Ethics, Artificial Intelligence and the Law: A truth about stories [50]

Hero Laird started her presentation off by introducing The Digital Law and Innovation Society (DLIS)[51], a student group at the University of Alberta Faculty of Law promoting familiarity with digital law topics and the responsible and effective use of technology in the law. She sketched the context by indicating where law and AI met and conveyed that due to the proliferation of AI technologies and especially the speed by which it is evolving, the law is failing to keep abreast and articulate the requirements to ensure human rights are protected. She suggested that a solution is to start articulating legal protections against the loss of autonomy and privacy, as well as mitigating discrimination and stigmatisation. In essence, if technology can shape the law, then the law can shape technology. This might be done through the inclusion of a broader set of social norms and ideas that were not wholly included in the design, implementation and use of these emerging technologies.

In the context of stories, Ms Laird provided a quote by Thomas King: “The truth about stories is, that’s all we are”. This pertains to how we co-evolve together with law and technology, meaning that AI also has aspects in common with the law, which creates strong narratives that can deflect and even dampen a sense of agency in society. She noted that interestingly, in terms of stories/narratives, AI and law can both take on these gigantic, nearly mythic proportions, and this holds implications for ethics. How will we act? How will it impact society? She identified that if AI is shaping our society, it might mean we are not. In other words, if one can access information, however, is not involved in shaping or defining it, then how will one be included in the design of AI? During the presentation, examples of stories – based on others’ experiences – were shared by Ms Laird.

In the final reflection on where law and AI meet, she concluded that it is the crucial site of exercise for ethics, for it questions ethical considerations of technologies.

Susan Juliet Agwang

Access to information and Artificial Intelligence [52]

The presentation referred to the Africa Freedom of Information Centre [53], a pan-African membership civil society organisation promoting the right to access to information, transparency, accountability as well as freedom of expression in Africa. Susan Juliet Agwang stated that as stakeholders gathered globally, both on- and offline, it was important to underscore the access to information, particularly insofar it related to emerging technologies brought on by the human drive to innovate and to provide solutions to problems as they arose. She pointed out that one of these solutions was AI, as it had been integrated into our digital infrastructure.

She emphasised that in the quest to achieve the Sustainable Development Goals (SDGs), we required all the tools that could empower society, such as with the instrumental help of online learning during the Covid-19 pandemic. This had provided a mechanism to promote access to information. Similarly, AI had been facilitating the free flow of information, had supported states to manage and control the spread of Covid-19 and had enabled collaborative solutions such as vaccine research and robotics. Conversely, it had also brought with it some challenges. Article 19 of the Universal Declaration of Human Rights (UDHR), protects and promotes the right to freedom of expression. However, several nations had utilised AI to restrict freedom of expression, or even used AI to curtail the enjoyment of fundamental human rights. Ms Agwang provided the example of the breaching of people’s privacy to collect personal information when using the internet as many of us failed to read the terms and conditions when accepting “cookies” when visiting a website. In the conclusion of her presentation,

she stressed that AI is an opportunity that we needed to realise, whilst remaining cognizant of the challenges it posed particularly to our human rights.

Claire Nelson

XYNOGENY? How we share decision-making in the age of AI [54]

Claire Nelson's presentation began with the definition of Xynogeny. Xynogeny is the production of offspring completely different from the parent. So, the question arises in the marriage of human intelligence and artificial intelligence, will we still recognise ourselves?

She emphasised the state of future shock that we are currently in and shed light on the characteristics of this state which were:

- Complexity (multiple key decision factors),
- Volatility (rate of change),
- Ambiguity (lack of clarity about the meaning of an event)
- Uncertainty (unclear about the present).

Currently, it seems as though we are caught in a race between human skill as a means and human folly as an end. The AI revolution is transforming economies, jobs and even society itself. And within itself, it contains both promise and peril.

She proposed that concerning our future we must ask what kind of future we want and for it to be aligned with the Sustainable Development Goals and the consideration of smart futures.

To share our future decision-making, we should be resilient and transformational in our thinking and rights considerations. These include the AI and Use of AI rights; Minority and Gender Rights; the Use of Data Gathering Technologies; the Use of Decision Support Systems and stakeholders who are involved in the design and use thereof; Earth Rights versus Human Rights; Human Rights versus Corporate Rights; and then finally Access to Information Rights.

Co-creation – which involves inclusivity and diversity – is certainly the main feature surrounding decisions regarding AI design, development and deployment. An example of this is the theme of World AI Day in 2022 “AI as a Public Good”. In addition, this is a “call to affirm the importance of cherishing AI as a global public good, and explore what can be done in the design, development, and deployment of AI to advance transparency and empowerment leaving no one behind; [as well as] recognising the

fundamental system changes that AI will have on society, that is, human rights, government and governance and our evolution to sustainable futures". The notion of a public good is elaborated on together with the utilisation of Scott Barrett's Taxonomy of Global Public Goods [55] to illustrate how it can be an aggregate effort such as global climate change initiatives.

Other examples were provided on the application of the Barrett Taxonomy to AI as a Public Good, application of Isaac Asimov's Three Laws of Robotics, and applying Japan's Ten Principles of Robot Law (one can also replace robots with AI).

So, in terms of Xynogeny, how might the future emerge [56]? The basic bricks of research are applicable here such as who, what, when, which, where, when and how will life emerge in 2030, 2040, 2050, etc.? Examples of initiatives – Imagine 2050 – that attend to this include the LivWell Corporation which looks into AI inf the AfterLife, with proposals of a curatorium that allows people to live well in their 90s due to progress in research and treatment. Other potential considerations of future decision-making and social lives include ElderLife, AI and Smart Systems in the home, AI in SpaceLife, AI in BeautyLife, and AI in ZenLife. These examples encompass transportation, manufacturing, healthcare, education, media and customer service. Extended from this, the jobs of the future include EI ethicist, Coding ethicist, Telesurgical AI Tech, Robot recruiter, Avatar design-security consultant and Education-technology integration specialists.

Sure, all these opportunities sound exciting, however, the fact is we have to be ready to meet this future by getting smart and being equipped with the right attitude and abilities. This helps us to think about the design of the products, policies, programmes, processes, and services that are integral to our shared future. Underscored by these deliberations is the absolute imperative to promote AI literacy and its competencies. To achieve this, we need smart leaders and smart citizens!

Jason Lewis

Future Imaginaries through indigenous Artificial Intelligence [57]

Jason Lewis started by talking about the future imaginary. He said it was composed of a couple of things:

- It is a vision of the future shared by a group of people and used to motivate change in the present;
- It provides communities with a shared vocabulary for discussing the future and strategies for getting to the future they desire;

- It centrally incorporates capacity-building within the community so that the community can take control of how such futures get built.

According to Mr Lewis, future imageries contain a set of strategies for creating worlds that we choose, and want, to have. Much of the work and projects currently engage with indigenous communities to accommodate their needs and vision and support their experiences in building a future that recognises them. The future imaginary is currently predominantly Western with a majority representation of white people, which comes at the cost of excluding black and brown communities (for example, Star Wars represents all these various planets and alien species, but human inhabitants are mostly white). He suggested that we need to practice a future together that is inclusive, enabling diversity and supportive or imagining a future we all wish to share. He provided examples of initiatives for indigenous futures as well as projects, some of them were:

- Indigenous protocol and artificial intelligence workshops
- Indigenous Protocol (IP) AI Position Paper
- Quartet – a poem series: Concept developed by Jason Edward Lewis (the presenter), with illustrations by Kari No, allowing a reflection on the type of future one specifically wants to have based on one's culture and personal experiences and needs
- A language example is provided in a position paper 'Ōlelo Hawai'i translation by 'Ika'aka Nāhuewa: This enables one to learn about technologies within one's local language and one's community context. This might also enlighten the fact that indigenous communities may interpret artificial intelligence differently compared to Western dominant interpretations and frameworks of artificial intelligence.
- 'Anu 'u 'Ōlelo Programming Collective for a Hawaiian language version of C-sharp
- Pioneered by Kari Noe, Kalani Bright, Nathan Nahina, Kauwila Mahi, Maui Bartlett and Kainoa Keanaaina
- Advised by Dr Noelani Arista and Prof Jason Edward Lewis

In essence, what does it mean to learn about science and technology within your language? And what are the potential implication if our future imageries contain non-humans?

References

[27] https://youtu.be/5Ldsa4Yygto

[28] https://www.ohchr.org/en/hrbodies/cerd/pages/cerdindex.aspx

[29] https://youtu.be/_NBmE89MJZo

[30] https://youtu.be/h5jUZwPepB0

[31] https://skoll.org/session/skoll-world-forum-2021/decolonizing-data/

[32] https://nexleaf.org/

[33] https://nexleaf.org/data-rights/

[34] https://youtu.be/gjfK_DwTPU4

[35] https://youtu.be/62Zcz9CZvlA

[36] https://cifar.ca/ai/ai-society/ai-futures-policy-labs/ai-futures-policy-lab-toolkit/

[37] https://youtu.be/Ev0oIsQt7Bk

[38] https://www.womeninairobotics.de/

[39] https://www.theguardian.com/books/2021/jul/16/the-authority-gap-by-mary-ann-sieghart-review-why-men-are-still-on-top

[40] https://youtu.be/SqUldHaBkl0

[41] https://www.india-seminar.com/2009/597/597_shiv_visvanathan.htm

[42] https://youtu.be/UKF_mivJgvA

[43] https://suade.org/

[44] https://www.weforum.org/communities/gfc-on-agile-governance

[45] https://youtu.be/GWMcNLuXnRA

[46] Knowles, B. and Richards, J.T., 2021, March. The Sanction of Authority: Promoting Public Trust in AI. In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (pp. 262-271).

[47] https://partnershiponai.org/methodsforinclusion/

[48] Benjamin, R., 2019. Assessing risk, automating racism. Science, 366(6464), pp.421-422.

[49] Knowles, B. and Richards, J.T., 2021, March. The Sanction of Authority: Promoting Public Trust in AI. In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (pp. 262-271).

[50] https://youtu.be/Pd3gQosFehg

[51] https://dlis.ca/

[52] https://youtu.be/BL6fn60b99Q

[53] https://africafoicentre.org/

[54] https://youtu.be/RXXzSGoo0KQ

[55] https://www.scottbarrett.org/global-public-goods

[56] https://www.futuresforum.org/

[57] https://youtu.be/bhsVn_LfgHk

[58] https://youtu.be/bhsVn_LfgHk

[26] https://youtube.com/playlist?list=PLTULETeBko5EPdf4OKnm6GlseSq5tldyX

[26] https://youtube.com/playlist?list=PLTULETeBko5EPdf4OKnm6GlseSq5tldyX

9. AI and Healthcare

9.1. Introduction

The section about healthcare was of utmost importance. AI and its roles and responsibilities in healthcare occurred regularly during the conference. This is especially true in the wake and realities of COVID-19. Various applications of AI in Healthcare include:

- Monitoring
- Clinical decision-making
- Treatment options
- Mining and managing medical data with AI
- Logistical and administrative applications
- Clinical trials, training and medical education

AI impacts Healthcare, especially due to the availability of big (medical) data or vast collections of health-related data. Utilising this data, deep learning can solve complex problems by involving high dimensional data to guide the best healthcare options. The explosion of the AI health market has progressively increased from 2014 to 2021, and it will only continue to grow. As a result, one can also see an increase in academic publications.

Esteemed speaker: Velu Nair

Why AI is needed in Healthcare [60]

Lt. Gen. Velu Nair started by talking about how technology has become embedded in our lives and by extension in health care services as well. AI can assist with the detection of health concerns (i.e. cancerous moles) and even the prediction of diseases and diagnoses, such as cancer.

However, he questioned if can AI meet the demand of unmet clinical needs, such as addressing the shortage of clinicians? WHO prescribes one doctor and three beds per thousand population (1/1000), however in reality the figures are lower. There is a much higher demand for patients to see doctors, than the help that can be supplied. It was noted that India has prioritised this requirement and now has a ratio of 1.34/1000. Very emphatically, AI can provide effective solutions!

He placed emphasis on the fact that AI models be embraced. It is imperative that the end-user be involved from the onset, and it must be AI for ALL, not some. AI must bridge the gaps between haves and have nots, rather than contribute to the digital divide. AI contributes to medical assistance via the service delivery of a virtual nurse, who does not replace a real-life nurse, but they can provide useful information, assist patients, and give recommendations towards health care options.

According to Lt Gen Nair, there are three approaches: 1) Rule-based approached, 2) Machine learning, and 3) deep learning is a more advance field of machine learning which makes use of neural networks to solve more complex problems. Objectives of AI are for:

- Increased predictions for accuracy (i.e. look at the data from the first, second and third waves of Covid-19 in order to better prepare)
- Decision making becomes more precise due to the shortlisting of possibilities
- Solve complex problems such as with genetic research
- High level computations are the future of AI (virtual models for clinical trials and genomics)

Lt. Gen. Nair provided examples, such as the Indian Myeloma Academic Group (IMAGE) – Care4Myeloma, Haemophilia tracking apps, TB diagnoses and MRI scanning and diagnoses, smart socks and bras, and popularly, smart watches and activity trackers which all lead to the visualisation of models to improve health and wellness.

There are also several beneficiaries, such as the patients, the healthcare providers, AI developers, payers, and insurance agencies and finally, pharmaceutical companies. Pharmacovigilance, which is the identification of medication errors, can improve by the utilisation of AI. It can assist with the:

- Detection
- Assessment
- Understanding and
- Prevention of adverse effects and other drug and devices causing potential safety problems because of errors.

He identified that ethics and limitations of AI are perhaps the most complex considerations. In terms of responsibility, it includes the notions of transgression rights and requisite regulations and regulators. Though, AI will essentially improve decision-making and make the lives of doctors simpler and safer, it will not replace the important role of doctors. Will patients accept AI (or robots) and can it replace the human touch and empathy? Then ofcourse, AI is also faced by other ethical issues including hacking and malware, which also have legal implications. Cost effectiveness are crucial to AI, if it is not affordable, it will not be accessible and will inadvertently widen the gap between rich and poor communities and countries. Limitations also include bias in machine learning, GIGO (garbage in garbage out).

Initiatives in India that utilise AI are: Healthcare AI Catalyst project, Diabetic Retinopathy, Cancer Biobank. There are many AI-assisted medical applications currently in development and it will increase in future. Biases must be addressed to improve the machining learning models which base their calculations on the input data. And finally, although AI certainly provides many benefits, the social, economic, ethical, and legal concerns must be addressed to ensure the challenges are mitigated going forward.

Lt. Gen Nair quoted the Hippocratic Oath "If I cannot do good to a patient, then I should do no harm" and concluded that trust is very important, especially between AI and humans. This trust must be developed especially within villages and the rural populations. End-user is very important, for collaboration from the beginning. The architect must meet the buyer. Computational scientists must engage with users. Being replete with information, we need to apply the right filters to best differentiate what is needed.

References

[60] https://www.youtube.com/watch?v=FAKAAHzhItk

[59] https://youtube.com/playlist?list=PLTULETeBko5G17bEsI_S_WRnb3rarheRd

[59] https://youtube.com/playlist?list=PLTULETeBko5G17bEsI_S_WRnb3rarheRd

10. Media and the Right to Know

10.1. Introduction

Showcasing the role of the media and the right to know, ten presentations – from the United States of America, Brazil, Colombia, Jamaica, United Kingdom, India, Zambia, South Africa and India – dealt with this topic. Andrew Bruce Smith opened the session with his presentation on the impact of Artificial Intelligence on Public Relations, Communications and Reputation. He did so by looking at three focal areas, which included the Ethical in AI, the impact of AI and the reputation based implications of AI usage within the domain of Public Relations. He reminded us that just because something can be done, it does not mean it should be done. The cornerstone of ethical decision-making, especially in the role of AI, is to make thoughtful and thought-through decisions. Public relations officers should ensure that no decision that is made – by a human or AI – should ever cause harm to anyone.

In considering avoiding harm, Shalabh Upadhyay presented on AI's battle with fake news. It was noted that before the internet and information deluge, information was finite and depended on journalists to collect, curate and present it. However, today, with emergent technologies such as AI, the proliferation of information (experienced as information overload) appears messy, voluminous, un-curated and even manipulated. He argued this is not all bad: for there are exciting opportunities for current and future journalists to harness AI to improve their reporting processes. AI and other

technologies may continue to develop, but so will our abilities as humans to utilise these. Therefore, it is incumbent on society, and especially journalists, to ensure they understand how these technologies work and how they can be used to shape the future.

The media and sphere of journalism do not only impact the lives of adults. Algorithmic awareness also heavily features in the daily routines and interactions with youth. Kara Brisson-Boivin, from MediaSmarts, presented a study on conversations with young Canadians about algorithms and AI. This extremely insightful study looked at the assumptions and lived experiences of the youth, via an interactive study to gauge their awareness of the implications and workings of AI and big data collection. The study both captured their pre-study opinions and compares these with their responses following a three-step game-based educative session. It was indicative of the initial levels of trust displayed by youth in engaging with online and social media platforms, but also their frustration and discontent when realising the implications on their personal information and profiling based on aggregate data.

These considerations led to Marco Schneider's presentation on the right to know *what*? One can promote the right to know in general, but how is the quality and reliability of available information guaranteed. Not all information needs to be known, such as information about state security and an individual's bank account details. On the other hand, there can be information available that is dangerous, misleading and hurtful. The right to know is therefore not absolute, and neither is all information necessary. That is why the qualitative, and not just the quantitative, elements of information access need to be considered within a fair and just society. When considering a fair and just society, Nazima Raghubir asked who are the guardians of the information held by a society, organisation or entity? She recommended that the media, or broadcasting agencies, must be part of the industry to promote awareness of media and information literacy, to best inform and guide the citizenry. This is especially true in the current challenging times.

One might ask how possible it is for a broadcasting agency, media institute or communication regulator to ensure such access and quality standards are integrated and maintained? This is the perspective Ernesto Orozco brought to the table as a representative of the Communications Regulation Commission in Colombia. He provided an overview of steps taken by the regulator to improve diversity in media content delivery, not only in terms of multilingual capabilities but also in consideration of marginalised, vulnerable or rural communities. Not only do they seek to improve audio-visual content, but they also want to avoid content that might infringe on the rights of others, such as, for example, excluding hate speech. The regulator enriches their practices by conducting

academic research, and the results are fed back into regulations and service support to meet the needs of the public.

Jan Vermeulen seconded the role of the media in promoting and upholding a democratic society, especially insofar as it is seen as the fourth estate (or the fourth pillar of a democratic society). On the right to know, and the issue concerning the "what", Vermeulen expanded on the instances of information that should not be known, such as the identities of recently deceased, witnesses, victims, minors and suspects of court cases and even the publication of graphic images. If the distribution of information is not managed, there can occur an erosion of trust as well as the proliferation of mis- and disinformation. The public can easily be manipulated by the selective use and curation of information to meet the objectives of those in power.

Daniel Sikazwe stated that AI can help with journalism and the citizens' right to know. It provides tools to evaluate information, distribute and package it, but also to verify it. Conversely, it is acknowledged that it can be used as a tool to harm or influence the public. Essentially, AI can help create a truly free press that is not defined as being homogeneous but instead known for being welcoming of diversity and the promotion of value pluralism. In addition, the democratisation of information puts pressure on traditional media to raise the standards of research, consolidation, curation and communication of information.

It would be very difficult to discuss the communication of information without introducing the importance of language diversity. Especially the accommodation of local, native and mother tongue languages. This important topic was raised by Thoriso Maloka who presented from a South African context where there are eleven official languages. AI makes media and information more accessible to communities through its ability to provide speech-to-text services, sub-titles and automatic translation. Examples were provided of organisations that have developed radios which require less electricity to function within rural settings that do not have regular or trusted electricity provision. In a society that is dependent on the quality and accurate information – for example in the build-up to elections – it is imperative to make information available in a language and medium that the youth, elderly and non-English speakers can access.

Kristen Tcherneschoff supported this notion by recognising that minoritized and indigenous languages have been displaced by dominant languages through colonisation and forced assimilation. This led her to present digital language activism and the process of language reclamation. She advocated for a positive approach, stating that dominant discourses about language reclamation tend to focus on the decline of languages spoken in the world. Instead, there are numerous instances where minority languages are being revitalised by families, the youth and community members.

These practices are very much enabled through the use of digital spaces, which is making it more possible for communities to connect and share their language experiences and histories.

10.2. Overview of presenters

Andrew Bruce Smith

The impact of Artificial Intelligence on Public Relations, Communications and Reputation [62]

AI already has many implications for all aspects of Public Relations. Andrew Bruce Smith presented various key focal areas in this presentation, such as:

- The ethical use of AI in Public Relations Practice
- Impact of AI on Public Relations work
- Reputational implications of AI use

Steve Jobs's quote "Computers do not make mistakes, humans do" led to Mr Smith's presentation.

Thereafter, he stated that machines make mistakes only because humans have either input the wrong data, have forgotten to factor something into our decision-making, or simply because we have a poor understanding leading to mistakes. Depending on AI to make and guide independent decisions can lead to unintended consequences, hence the responsibility lies on humans to ensure this is mitigated by inputting correct and unbiased data. However, ethics is not only about avoiding mistakes. It is about doing good and promoting right behaviour as opposed to wrong behaviour.

AI can be used to streamline PR and it also encompasses how AI is replaying the human workforce, such as the usage of chatbots. The data collected is aggregated, can be stored, analysed and used to improve service delivery. But it can also be biased due to a limited scope of engagement of certain sectors of society. AI tools can be used on purpose to 'disinform'- where fake news is deliberately distributed and used to influence people's thinking to persuade them to do things inadvertently. Thus, an ethical framework is needed to help figure out what is the right thing to do. Regulation and legislation do not keep up with technology development. How do we go about considering the ethical implications of a particular tool? However, it should be emphasised that AI must contribute to the public good. AI is encouraging PR professionals in the sense that it might motivate staff to upskill. It is also probable that PR professionals are using AI tools without evening knowing it!

He reiterated the fact that though AI can be used for social good, it does contain dangerous elements. Thus, just because something can be done, does not mean it should be done. That is the core of ethical decision-making, to make thoughtful and thought-through decisions. The best test for an ethical decision is to see whether it stands up to scrutiny based on thought, intent and execution before arriving at our decisions. Ethics is difficult in everyday life, so by adding AI and machine learning and other emerging technologies, it becomes even more complicated and is amplified in their impact on individuals and society at large.

He insisted that PR professionals should ultimately not make any decisions that can cause anyone harm, but anyone at a disadvantage, or unconsciously create bias. PR professionals offer strategic advice to colleagues and organisations to make ethical decisions, almost like playing a guardian role. AI will radically change the way we live and work, those that know how to use AI will benefit from it, and those that do not might become disenfranchised. Big questions arise as to the governance of these technologies. In conclusion, any of these decisions and resulting actions will have an impact on an organisation's reputation.

Shalabh Upadhyay

Artificial Intelligence's battle with fake news [63]

Shalabh Upadhyay's presentation aimed to discuss AI and its ramifications when it comes to journalism, storytelling and the wider society. Journalism – and its medium – has evolved as the realities of our societies have changed. Journalism uses various means of communication as tools to fit a larger objective, which is value creation for society.

Before the internet, information was finite, and it was up to journalists to make information more accessible to the public. In addition to this, journalists also broke the news firsts to keep citizens informed whilst communicating directly to the masses via print and broadcast media. Many of these aspects changed with the advent of the internet. For example, mass communication is now a feature of social media platforms. Conversely, even though there is now a surplus – or infinite – the amount of information available, we might argue we do not feel more knowledgeable.

Mr Upadhyay noted that fake news existed before AI since it is essentially propaganda that has been used by the government to manipulate and shift perceptions many times. However, it is now seen to be specifically a problem for our generation, due to the transition from a non-digital to a digital society. The challenge now is not necessarily to address fake news but to question what the role of journalists will be going forward.

AI, like any tool, can be used for right or wrong. Certainly, people will use AI to proliferate fake news, but AI is also used, in the New Emerging World of Journalism (NEWJ)[64], to look at how information can be made more accessible and streamline delivery. Herein lies an opportunity for current and future journalists to adapt and understand these new technologies that are coming through and see how they can be best implemented to serve the greater purpose of journalism. Even should AI become much more complex in the future, our ability to utilise these tools will also expand. Journalism's utility as the source of credible information can therefore be greatly enhanced.

He concluded that those who have never considered journalism as a profession, especially young students, should consider it and as aspiring journalists, they must be bold and learn about these technologies and how they work.

Kara Brisson-Boivin

Algorithmic awareness: Conversations with Young Canadians about Algorithms and AI [65]

Kara Brisson-Boivin began her presentation by giving a background on the organisation-MediaSmarts [66]. She talked about a recent study, that applied game-based approaches, conducted with young Canadians on algorithmic awareness, with the following two aims to gauge insight:

1. How do young Canadians understand the relationships between AI, algorithms, privacy and data protection;

2. Benefits and concerns about recommendation algorithms,

The project was also used to inform and call for more algorithmic literacy tools and resources to increase protection in digital spaces. The project methodology is elaborated on, explaining the timelines (2020-2021), target groups (13-17), platforms (virtual platforms such as Zoom), etc. The game prototype, #ForYou, was specifically developed for this project and was designed to be played collaboratively over three phases.

Some of the findings of the project included (but were not limited to):

- The youth pointed out the attention between helpful content filtering and concerning content narrowing;

- Participants of all ages pointed out an algorithmic content narrowing effect which includes an excess and overload or saturation of similar content;

- This led to rising concerns around default settings which platform and content creators use to manipulate algorithms to optimise engagement and manufacture consensus;
- Participants were concerned when a false sense of social consensus was generated, for example on political topics and climate change;
- They felt frustrated by the powerlessness to change this algorithmic architecture;
- Regarding the usage of personal information, most participants had few reservations about algorithms recommending entertainment and leisure content, however, they felt unsettled by the invasive corporate surveillance strategies;
- They felt uncomfortable that their data were lumped together to form data aggregates to train algorithms without their knowledge – no longer were they, unique users, with unique needs, but recommendations were made based on guesses of other users similar to them.
- Many participants were aware of bias and the role that it can play and the repercussions it may have for online businesses and users. It was noted that these companies need to be aware of such biases to ensure discrimination, racism and marginalisation do not take place.

In many instances for the youth, it was the first time they had made these connections between algorithms and the platforms and technologies they use. These so-called 'A-ha' moments made them want to speak in-depth about the impact of AI on their lives. Scholarship, science and technology studies have explored children and youth's meaning construction in the 'parasocial' relationship with technology (voice assistants such as Siri, and internet-connected toys). This can be concerning since an illusion of intimacy or friendship is created with an algorithm, which is not human. These technologies do not understand emotions or what is right or wrong. A trend amongst young Canadians is that they tend to view the online world through the same lens as they view the offline world. At the inception of the discussions on AI and algorithms, participants approached them with the notion of 'being a friend', but as the discussions continued, participants realised more than their views on this relationship may be problematic. These moments led to conversations about trust, responsibility and control which translated into a series of recommendations.

The findings from this project provide key role-players – such as researchers, policymakers, and the tech industry leaders – with important considerations for the way forward to address issues about protection, awareness, control, and transparency. The development and implementation of AI literacy curricula are strongly recommended to improve awareness and education.

Marco Schneider

The right to know what? From the corporate media gatekeeping to the AI confirmation bias filters of big tech corporations [67]

In this presentation, ethical and political questioning was proposed by Marco Schneider. This questioning pertained to the contradictions between the right to know and the reliability of the information. He stated that these contradictions even extend to corporate media gatekeepers and their generally conservative ideological bias, which currently manifests as right-wing misinforming confirmation bias. All these instances are mediated by algorithms. Other themes that arose in this presentation included credibility; self-deception; the notion of private hegemonic apparatus; the theory of gatekeeping; big tech corporations, extreme right-wing growth and infodemic.

If artificial intelligence means computing devices that can perform smartly, one should first distinguish between instrumental intelligence and ethical one. Whereas the former deals with efficiency, the latter questions "for what"? When discussing AI about the general issue of information access and the right to know, the point is to ask what kind of information do we seek to make more accessible? Examples of accessible, yet damaging information such as seen in the current infodemic, consists of hate speech, right-wing propaganda, anti-science and all kinds of negating information and practices. Perhaps then the focus should not only be to provide access as such, but also on how AI could better filter "good" from "bad" information. Consider for a moment one of the main information problems – the infodemic – because of going from scarcity to an abundance of information. This problem then leads us to the philosophical issue of the quality of information, together with deception, self-deception, confirmation bias, the social construction of cognitive authorities, credibility, and ideologies.

The presentation elaborated on the importance of quality and qualified information, the notions of self-deception and confirmation bias, the meaning of cognitive authorities (and cognitive justice), the roles of cognitive authorities/gatekeepers, values such as credibility and reliability, and the existence and maintenance of certain ideologies by the hegemonic apparatus.

Mr Schneider believes that information access and the right to know are not only quantitative but mainly qualitative issues. Freedom of speech is a major civilization achievement, but should not be taken as a fetish, as a value apart from others equally or even more important, like commitment to the truth, with the public interest, with social justice, with fair information ecosystem. These considerations also extend to AI, which together with its benefits, can also pose harm to society.

Nazima Raghubir

What Artificial Intelligence means for media in the region in the midst of challenging times [68]

Citizens' right to information and access to information raises the questions of what that information includes and who are the guardians of such information? Nazima Raghubir pointed out that these rights have been enshrined in constitutions, laws and regulations across the entire globe, however, it does not imply all countries have done so in equal measure if at all. This leads to the role of the media – the fourth estate – and the role of journalists in terms of the right to know to achieve the public good.

Subsequently, what implications do AI hold for an ever-changing industry? Not only is information distributed in new ways, but it is also consumed in new ways. Political decision-making impacts the nature of, and the methods by which information is communicated, and the public's decisions are then based on the narratives which are created by the media. As an example, the Caribbean Media landscape has been changed forever due to the growth of news and online social media platforms. The influence of AI has become debated in the media industry: consider that news is researched and compiled by journalists, but then disseminated and presented using AI formats. AI also contributes to the spread of disinformation, which inadvertently weakens the Caribbean media landscape. Will the media industry be left behind?

In conclusion, in the absence of strong media and information literacy levels, AI journalism can pose a challenge to the citizens. It can however also lead to opportunities for value-additions such as a greater representation of diversity and inclusion of indigenous communities.

Ernesto Orozco

Media and the right to information (A Regulator's Perspective) [69]

At the Communications Regulation Commission (CRC), the right to information is sought to be guaranteed through studies and projects that strengthen democracy. Not only have regulatory functions been extended from audio-visual to television, but also surveillance and control concerning content. This function used to be exercised by the National Television Authority, which included guaranteeing pluralism, the impartiality of information and the promotion and regulation of citizen participation in matters that might affect viewers. Services have been extended to include open broadcast TV and sound services at a very high quality. These inclusions of regulations, such as those about communications and specialised audio-visual content, are done by the law in Colombia.

Ernesto Orozco pointed out that through these, two rights have been guaranteed, namely: Pluralism and the Impartiality of information, especially in respect of the experiences of users, in terms of dissemination, protection and advocacy of the interests of television viewers. It also seeks to prohibit the behaviours of those that impinge on these rights.

He provided an example of Colombia, where to benefit citizens and foster sector development, many components have been implemented to provide quality, accurate and accessible content. By promoting citizen pluralism (external), the internal pluralism of the CRC has been encouraged together with the promotion of pluralism in audio-visual channels. The provision of continuous information is requisite in the participation and representation of citizens in television media. Studies have continued – to measure pluralism – to ensure the CRC remains sensitive to the inclusion of diversity. It also helps to understand how the risk for pluralism is fundamental to understand the scenario provided by legislation, to guarantee such pluralism of information and sanction behaviour that infringes upon it.

Understanding the context of the broadcast and communications sectors in Colombia is central. Even though there is high economic concentration in Colombia – as with the rest of Latin America – the media must remain pluralised in its content provision. Pluralism is seen as a fundamental human right that essentially promotes social diversity. It also seeks to include three specific groups: women, people with disabilities, and people in rural Colombia. Reference is made to a study targeting broadcast content across local, regional and national levels, to gauge the diversity of content, particularly concerning television content. The effectiveness and satisfaction of these systems are highly regarded especially insofar as it meets the needs and expectations of the target communities. This study is continuing to ensure that it provides more insight into the performance of these communication platforms and systems. Based on the results, decisions will be made based on the provision of adequate and effective access to content on a variety of platforms, to diverse communities and in recognition of the different schedules of these communities.

Therefore, not only does the CRC (with member states in Mexico, Catalonia and Colombia), seek to play a regulatory role, but also wishes to provide academic research to adequately inform and improve current media provisions by following a multistakeholder approach.

Other considerations include media literacy, Over-The-Top (OTT) media provisions, gender representation on television, youth sensitivity and inclusion, and an analysis of the audio-visual sector from broadcasting to broadband. This is therefore a global collaboration between academia, industry, and the media sectors. This approach acknowledges the challenges and opportunities posed by an interconnected world as realised by an ever-increasing digital landscape and the Covid-19 pandemic. Regulators face numerous challenges on this interconnected world and Covid-19 consequences,

especially since it causes shifts in consumer behaviour. It is therefore imperative for the regulator to be aware of these shifts in consumer behaviour and changes caused by global events. This will allow the regulatory body to be aware of the trends in the sector and translate those into the quality and relevant content for the population. Flexibility and innovation are essential to leveraging this digital shift, and that is why intelligent services are integrated with regulation.

In conclusion, the aim of the regulator to leverage the digital transformation are threefold and was listed by Mr Orozco as 1) regulation as a tool for the digital transformation of the sector, 2) the digital transformation of the regulator, and 3) the exploitation of data (to promote input to the regulatory policy development and improving decision-making). Therefore, a number of strategies are used to maximise social wellbeing, foster investment, promote competition and ensure pluralism of the media in Colombia.

Jan Vermeulen

Technology, Media and the Right to Know in 2021 [70]

Jan Vermeulen began his presentation by giving the background of the context which informs the presentation, for example, by applying investigative journalism, the biggest cryptocurrency scam of 2020 was uncovered by utilising chain analyses. Another investigative report that refers to- is Africrypt [71]. Pertaining specifically to this presentation, the media is referred to as the "fourth estate", or the fourth pillar of democracy:

1. Executive – Cabinet
2. Legislative – Parliament
3. Judiciary – Courts
4. Free press – Media

Conversely, in South Africa, much of the executive and the legislative are entrenched in deep corruption, also what we now term State Capture. However, together with the judiciary and free press, it was possible to hold the executive and legislative to account. It is, therefore, essential – imperative – to have checks and balances in place in a democracy.

He referred to a South African investigative journalism programme, *Carte Blanche [72]*, and their slogan "You have the right to see it all". However, the right to know is not absolute, there are some restrictions, for example not being legally allowed to reveal the identities of recently deceased,

witnesses, victims, minors and suspects. Other rules contain societal rules such as those about graphic images. Other instances are debatable, such as the right to be forgotten (European Union) and keeping information secret insofar as its implications on national security. Weighed against national security, is the notion of disclosing information for the public good.

Some obstacles and/or threats to our right to know are elaborated on, including censorship versus free speech; internet shutdowns and throttling; access to public records; surveillance, threats and attacks on journalists which have a potential chilling effect on journalists. It should be noted that in many instances court documents are not easily accessible by the public: it is mentioned that it is easier to find court cases/reports in the USA. An example is provided of documents required in Uganda that were not digitally archived, where someone had to physically go to the archives and manually scan and send each page!

Together with the foregoing, some mistakes take place in information disclosure, such as eroding of trust, and the spread of mis- and disinformation to manipulate or misinform citizens.

In closing, Mr Vermeulan quoted from the computer game, *Sid Meier's Alpha Centauri™*, "The once-chained people whose leaders, at last, lose their grip on information flow will soon burst with freedom and vitality, but the free nation gradually constricting its grip on public disclosure has begun its rapid slide into despotism. Beware of he who would deny you access to information, for in his heart he dreams himself your master".

Kristen Tcherneschoff

Digital language activism [73]

This presentation acknowledged that minoritized and indigenous languages have been displaced by dominant languages through colonisation and forced assimilation. Language reclamation can become a form of resistance to the dominant hegemonic forces. Language reclamation can be used to describe a social process of re/claiming the appropriate cultural context and value that the language would have sustained had it not been colonised or suppressed.

Kristen Techerneschoff in her presentation highlighted that all languages are vital to the world. and one of the spheres impacting language and communication is the internet, which functions as both an enabling and disruptive tool. Media in a dominant language can marginalise some cultures, but media also makes it possible to capture the languages that are being marginalised and can serve as a vehicle for revitalisation by employing language digitisation and preservation methods. She gave examples of

the International Year for Indigenous Languages in 2019 that promoted marginalised, minority and indigenous languages. Another vehicle for revitalisation is recognition by the International Standards Organisations (ISO) Code which provide communities with a three-character identifier for their language. These and other examples highlight the importance of having a community within the language reclamation process.

She emphasised that reclamation requires the building of infrastructure for a community: speakers must find one another by providing an example from Louisiana, about preserving the Tunica-Biloxi language [74]. However, due to a lack of institutional support, the project did not flourish and records remained stored away in the university and other archives. Donna Perry – a lady whose husband, Michael, had his language reclamation journey – drove to Baton Rouge in New Orleans, to visit the archives and to make photocopies of these records! This process of bringing her language home lasted for nearly a decade. In this process, the family built a community around reclaiming their ancestral language through the distribution of media. Now, there are more than 100 active learners (10% of the overall tribal population) with 32 new fluent native speakers of which the parents are passing the language down to their children.

Previously the dominant discourse about language reclamation focused on the loss of language from our world. Instead, there are many individuals and communities actively turning to their heritage and cultural languages and many of these language users have championed the support provided by digital spaces. There are two initiatives to note: 1) Rising Voices which is building a toolkit on how to be a digital language activist [75], and 2) Wikitongues [76] supports language revitalisation movements through grants.

Daniel Sikazwe

AI and Journalism [77]

Daniel Sikazwe's presentation aimed to look at AI, and how it helps in journalism in addition to the citizens' right to know. The right to know forms part of a broad range of epistemic rights and goods, like information, knowledge and truth. People desire to have information, knowledge and truth, especially in an information-centric society. Sometimes these rights are contravened by governments

and commercial interests, and even oftentimes by religious interests. Those who control what citizens know can exert a huge influence on the lives of citizens, and this is very dangerous in a democratic society. This harm can extend to individuals, communities, and even social and political institutions.

Stumbling blocks to the right to know were expanded on, such as a lack of transparency, limited freedom of expression, and laws which preclude accessible information which also inhibit a free press. In short, citizens must know what their governments are doing! That is why there is usually this conflict between those who wish to exercise their right to know against those who seek to prevent it. The importance of this can be observed by the vast variety of regulations, policies and strategies in place by intergovernmental agencies, multinational entities and civil society organisations, that promote the right to know. In turn, if citizens enact their right to know, it helps to improve decision-making and promotes the quality of policy, laws, and societal development, essentially bridging the inequality gaps.

So where does artificial intelligence come in? AI tools can help to break down these provisions and provide access to information that is usually kept confidential. By using AI tools, journalists can empower citizens to both act as producers and consumers of news, allowing citizens to become more active citizens. Conversely, despite the existence of various AI tools, at the moment most media institutions are limited by the fact that they cannot use all of these tools (e.g. due to cost factors).

Additionally, due to information overload as well as data dumping, citizens can become even more confused, especially if there is the occurrence of mis- and disinformation. It was noted that this can be addressed by journalists who can use AI tools to curate the data received and package it in accurate, quality and accessible information. AI can help create a truly free press not defined by being homogenous but instead diverse. Democratisation of information provides pressure on traditional media to raise the standards of verification through the application of fact-checking tools. Citizens do not want to be distracted by irrelevant information or information that clutters their newsfeeds. AI can therefore assist in meeting citizens' information and news demands.

As we know, the internet is not a permanent and perfect archive of historical material indexed by neutral entities. It is messy, dynamic, and constantly changing. He suggested that for this reason, it is imperative to educate citizens on some of the AI tools for it may assist with finding relevant information, fact-checking and verification of news/information received. It might also assist with understanding the context, complexity, nuances and dynamics of information resources, which will allow citizens to gain a more balanced and objective view.

Thoriso Maloka

Role of the media in creating access to information [78]

Thoriso Maloka began by considering the role of the media in creating access to information, and the impact of current and emerging technologies in making this information available. What is the mandate for creating a right to know? Their mandate is to provide information that allows for informed decisions and the ability to hold institutions and individuals accountable.

For many of us, specifically, Africans, when having discussions about holding governments and individuals accountable, it is something we can identify with since we are going through that period. This includes the quality of information as well as receiving it promptly to effectively hold them to account. Unfortunately, sometimes that information is lost in the gaps. These gaps are not always related to the platform but instead related to the method of delivery, for example, language.

She shed light on the fact that in South Africa there are 11 official languages, but not all information is available in all the languages. In terms of the medium, we still have radio broadcasts which the elderly communities have easier access to than compared with podcasts and other social media and online news platforms. Notably, if people cannot access information in their language, this information is no longer accessible, and it then falls through the cracks. Consider for a moment the communication of particulars about Covid-19 – such as the specifics of each variant – how is that translated into local languages and rural communities? Information is provided to citizens in a language – English – that impedes their understanding.

How does technology play a role in this? How can the media improve on this? There is this concept now of algorithm journalism or automated journalism. In reality, what you hear over the radio is a small percentage of work that occurs behind the scenes. There are aspects of automated journalism that can serve communities, such as transcripts of broadcasts and speech-to-text/closed captions on television. AI can also be used to recognise voices over the radio, or even facial recognition over television, to support remote (or neglected) communities who do not receive information in their language. She suggested that we should therefore be cognizant of the ways AI and emerging technologies can be married with the roles and abilities of the media. A company that achieves this is Freeplay Energy [79] / Lifeline Energy [80] which provides information access to those who need it most and they also develop products and platforms, such as radios. They are particularly developed to not require electricity to mitigate energy provision shortages as experienced in South Africa and other countries across Africa and even globally to best serve humanitarian communication.

Accessibility of information can also be made possible where crucial information – such as a manifesto of political parties – can be made available without needing to attend election campaigns.

References

[62] https://youtu.be/30Q9RWKz0aU

[63] https://youtu.be/_F_O_XdQOSQ

[64] https://thenewj.com/

[65] https://youtu.be/dfNnmkiI9u4

[66] https://mediasmarts.ca/

[67] https://youtu.be/OWHj_k_WOpQ

[68] https://youtu.be/ZjRMqvNpipw

[69] https://youtu.be/MFfbmfcnN48

[70] https://youtu.be/SbaKHdNt57U

[71]https://mybroadband.co.za/news/cryptocurrency/410706-rise-and-fall-of-south-africas-r54-billion-bitcoin-brothers.html

[72] https://m-net.dstv.com/show/carte-blanche

[73] https://youtu.be/-yJk6E5z-3E

[74] https://www.tunicabiloxi.org/

[75] https://rising.globalvoices.org/blog/2014/03/12/wikitongues-document-your-language/

[76] https://wikitongues.org/

[77] https://www.youtube.com/watch?v=u48gNyRZmlc&list=PLTULETeBko5Eqq8Jw4yT5Zh5ykTs3e2Ys&index=11

[78] https://www.youtube.com/watch?v=EU4LqdGZ9jg&list=PLTULETeBko5Eqq8Jw4yT5Zh5ykTs3e2Ys&index=10

[79] https://www.freeplayenergy.com/

[80] https://www.lifelineenergy.org/about-lifeline-energy-us/history-lifeline-energy/

[61] https://youtube.com/playlist?list=PLTULETeBko5Eqq8Jw4yT5Zh5ykTs3e2Ys

[61] https://youtube.com/playlist?list=PLTULETeBko5Eqq8Jw4yT5Zh5ykTs3e2Ys

11. AI & Law

11.1. Introduction

Nine presentations from Brazil, the United States of America, France and India explored the legal and regulatory domains of AI. Caroline Tauk posed the question of whether an Artificial Intelligence can be an inventor? An example is that of the AI that designed a painting – known as "The Next Rembrandt" – after having been trained on Rembrandt's paintings with the instructions to replicate them. Even art specialists could not clearly distinguish between Rembrandt's and the AI's styles. This example is indicative of AI's ability to not only mimic but also create new products, including works of art, inventions, documents etc. Due to AI's ever-growing ability, the role of Intellectual Property must be reflected. Although there may be the systematic recognition of AI as an inventor itself, we should continue to be concerned about the rights of the inventor. According to Tauk, the inventor must be the designer, and we should separate the inventor from the one who receives the royalties. The issue to be noted here is that we are trying to humanise the machine. Once machines are being humanised, the principle of agency comes to the fore. In essence, even if AIs can be creators and be creative, there must always be a human involved.

AI and Cyber Terrorism were the focal points of Samridhi Arora's presentation. She succinctly stated that from time immemorial man has not only endeavoured to understand life but also to create life itself, such as with AI. AI and other emerging technologies bring with them a conundrum: they both promote and weaken cybersecurity. Due to the utilisation of data gathering and analytics, supported by natural language processing which can help strengthen risk prediction, cyberterrorists can use the same skills and technologies to circumvent such protective mechanisms. To mitigate this it is

imperative to stay protected against current and emerging threats, together with observing developments in emerging technologies and also to understanding how these technologies work. In addition to understanding how AI works, multi-stakeholder collaboration in national and international platforms is requisite to standardise and promote best practices and the development of policy.

AI and its governance bring together roleplayers from a broad variety of sectors, culminating in the intersection of law, technology and policy. It is here where Ameen Jauhar positioned his contribution with an overview of how AI can be used to enhance legislative administrative efficiency in India. Jauhar is a proponent of the notion of predictive justice. Predictive justice protects people from bias. It was remarked how there is an interesting debate amongst humans questioning whether we are envisioning algorithms on a higher pedestal than us? And if so, what do those responsibilities entail? Begin human and fallible, judges can make mistakes, but how will algorithms and the owner/designer of algorithms be held accountable? If we consider the levels of patience and sympathy we accord to judges, will this same level be accorded to algorithms? Therefore, AI can indeed enhance legislative, administrative and other sectors' efficiency, but how will AI be held to account should something go wrong? Isabella Ferrari also engaged on the topic of how AI can assist with decision-making in the legal system. She stated that AI can be adopted to provide recommendations to judges, provide judgements that must be followed, and even replace human judges in some instances. Though there may be concerns that arise from AI's embeddedness in the judiciary, we can instead ask how machine learning can best be utilised to improve decision-making, to account for, or alleviate, potential errors in human decision-making. Dan Shefet elaborated on the advantages of using AI to improve decision-making in the courts based on algorithms. He asked "who judges the judges" and pointed out how human fallibility in court orders impacts people's lives when wrongful, or biased, outcomes result from such pronouncements. He argued that although AI has been critiqued for being biased, it must be emphasised that humans are biased too. And if the processes can be improved for how data is collected, curated and embedded in an algorithmic data set, statistical calculations will only continue to improve.

Since there may not currently be legislation in place to legally mandate the design, deployment and use of AI, Gary Marchant provided an overview of soft law governance of Artificial Intelligence and the Right to Know. He argued that one of the benefits of soft law is that it fills gaps in AI governance. Soft law is also a suitable avenue for the design of guidelines and policies, since it remains agile and flexible, and can adjust according to the pace and scope of the continuous development of AI and other emerging technologies. This approach was supported by James Sherer who presented ethics in Artificial Intelligence and promoted a practical approach to presentation and defence. Most of the current engagements with AI are with weak AI since this encompasses process-driven algorithms that

assist with decision-making. These are not the types that will replace or simulate humans, but they will assist with, and in some instances, replace human decision-making. These outcomes are based on data aggregation, curation, analysis and presentation. To promote effective regulation that will ensure quality and accurate information output, it is recommended that regulation be embedded throughout the lifecycle of algorithm development. The benefit of the lifecycle regulation is that citizens are informed of what will be done, how it will be done, and what the potential outcomes will be that affect their daily lives. The positioning of responsibility remains a key concern, but at least with a phased approach, checks and balances are embedded from early on.

Filipe Medon warned against the harm which AI can cause to society in his presentation on civil liabilities. One of the greatest concerns of AI is its opaqueness, which is compounded by its ability to mirror and reproduce existing biases in society. He called for more transparency of data as well as holding those who are responsible for designing and deploying such technologies to account. While on the one hand there is a call for the transparency of a system, Justice AK Sikri forewarned of the growing threats to privacy due to AI. He acknowledged that the concept of privacy is very broad and that it can be violated in many ways. It is due to these realities that there should be continuous efforts to protect the right to privacy. With AI products and services becoming ever more embedded in our daily lives, it means that we and our data become the products ourselves. It is therefore imperative to regulate data collection and management within a well-defined strategic framework.

11.2. Overview of presenters

Caroline Tauk

Can Artificial Intelligence be an inventor? [82]

The presentation was opened by posing the question of whether only humans can be creative? In response to this, it is stated at AI can surprise us. An example is provided of how in 2016 AI mimicked Rembrandt's brush strokes and produced a painting, nearly 400 years after the artist himself! This painting was named "The Next Rembrandt". This was achieved by humans training an AI by using various Rembrandt paintings as references, and then the algorithm was instructed to produce a brand new painting replicating the artist's style.

Due to this and other examples, Ms Tauk suggested the need to reflect on the role of Intellectual Property Law in the face of this new reality brought on by emerging technologies. IP Law protects by copyright, original work such as music compositions, paintings, movies and written texts. IP Law also protects original work by patents such as inventions, whether it be mechanical, technological or

pharmaceutical. The problem that arises is the fact that creativity is normally attributed to human beings, which is why legislation protects humans as authors and creators.

The above consideration leads to a discussion on how AI interacts with humans to generate creative products. Machine learning as the predominant AI technology teaches a computer program to identify patterns and data and then apply the knowledge to new data and processes. Together with this, machine learning is the dominant technique disclosed in patents and is included in nearly 40% of identified inventions, according to the World Intellectual Property Organisation (WAIPO). In these instances, AI was used as a tool to help the inventor.

Covid-19 has contributed to the acceleration of new methods by which AI tools create content and improve methods. However, this is not the core concern. The issue at hand is the fact that AI is developing innovations on its own, due to the minimal human contribution to the final output. The question thus arises of who owns the copyright to these creations? Machines have no rights, will it be the machine's owner, the service provider, or the person who trained the machine? Currently, there is no correct answer. These concerns are currently being deliberated in the courts. Can an AI system be recognised as an inventor? In 2020 the European, American and Australian Patent Offices denied the application by Stephen Thaler to name AI as the inventor of DABUS[83]. It must be noted DABUS does fulfil the potential ability requirements[84]. An Australian Court decided in 2021 that an AI system can be an inventor and the owner of the system can also request patent protection. It must be noted that South Africa granted the patent to the AI (DABUS) in August 2021[85]. In conclusion, only time will tell whether this is the end of anthropocentrism in IP law.

Samridhi Arora

Artificial Intelligence and Cyber Terrorism [86]

From time immemorial man has not only endeavoured to understand life but also to create life itself, such example AI. With any new technology opportunities are created, but with it also come consequences. One of the side-effects of the internet is the occurrence of cyberterrorism and it is therefore important to reflect on solutions posed by this threat.

Samridhi Arora stated that AI is an example of fabricated consciousness, when looking at how it can be used, two disparate scenarios come to mind: 1) it promotes cybersecurity, 2) it weakens cybersecurity. Together with implications on cybersecurity, there is also the occurrence of cyberterrorism. The latter is a conflation of terrorism and online spaces, where threats and unlawful activities target networks, computers and digital platforms of governments, and public and private

entities. A few examples were provided of cyberterrorism and then mitigation efforts were discussed in which AI can help prevent cyber terrorism. For example, AI can be trained and used to detect new threats and malicious activities, which is a lot more effective than traditional software. AI also allows super predictive intelligence with natural language processing that curates data and strengthens risk prediction by pinpointing potential weaknesses in one's existing computer system. Having this information enables one to plan and allocate the requisite resources to identify vulnerabilities and prevent potential malicious attacks utilizing malware, hacking attempts and viruses. These actions essentially contribute to cyber resilience.

She noted that to stay protected against current and emerging threats, it is important to observe developments in emerging technologies and also to understand how these technologies work. She suggested that additionally, solutions and prevention strategies must be regularly reviewed so that an entity does not fall behind. Together with the foregoing, regulatory frameworks are another tool in an entity's arsenal to protect against cyber-threats which can be strengthened by consulting with industry and legal experts who can best assess current contexts and also advise on strategies going forward. AI frameworks should define broad principles and guidelines, whilst organisations must design and cater these to the specific needs of the organisation to ensure compliance. Another consideration is whether AI can be acknowledged as a legal person, and if such personhood is conferred, it must be accompanied by suitable insurance to protect against wrongful decision-making and/or actions by the AI system.

In conclusion, these issues must be discussed on national and international fora to not only raise awareness and promote multi-stakeholder participation but also to collaborate in the standardisation of best practices and policy development, to mitigate threats and damages that may arise. Regular revision of existing laws and regulations together with sectoral reform (if and when needed), will allow for the identification of weaknesses and also recommend suitable mechanisms to update laws, regulations and sectors in the face of emerging technologies. Therefore, both the opportunities and the challenges of AI need to be observed, followed closely by responsible action to avoid damages.

Ameen Jauhar

Using Artificial Intelligence to enhance legislative administrative efficiency in India [87]

It is interesting to note that the presentation was positioned at the intersection of law, technology and policy, especially insofar as it pertains to AI ethics and AI governance, as well as the integration of AI within legal and justice systems. Ameen Jauhar provided examples of India's experience in developing and piloting AI intervention, as well as the digitisation process, within these systems. Together with this, consideration was given to the cost-efficient manner in which court pronouncements were translated to nine different Indian vernaculars to make the rulings more accessible to non-English speaking populations.

Some key considerations pertaining to AI's integration in these systems, included the 1) bolstering of administrative efficiency, 2) the facilitation of more sophisticated automation that supplements judges (not to replace them), and 3) the improvement of the overall access to justice.

She noted that India's current usage of AI has been starkly different from how international use cases have occurred. The translation tool utilised does manage to capture the unique subjectivities of the Indian justice system and demonstrates a thoughtful way of improving access to judicial information as well as justice delivery in general. In conclusion, this brief presentation provides an overview of how India has been utilising AI to enhance legislative administrative efficiency.

Gary Marchant

Soft law governance of Artificial Intelligence and the Right to Know [88]

Gary Merchant opened his presentation by providing a definition and explanation of what soft law entails. He defined it as: "Substantive obligations and requirements created by instruments that are not directly enforceable". Examples include guidelines, ethical codes, principles, private standards, codes of conduct, voluntary programs and partnership programs. These can be implemented across all sectors of society, but interestingly, following a study, it was found that governments are the foremost participant in AI soft governance.

He recognised the benefits of soft law, one of them being that it fills gaps in AI governance (particularly if there is a lag in legislation and regulation) due to its flexibility and agility. There are however shortcomings inherent to soft law which inhibits its effectiveness and credibility. These pertain to who participates, how is it enforced, how are people/organisations kept to account and transparency due to legal disclosure not being ratified. These aspects pose challenges to the right to know. Notwithstanding, it is a fact that soft law is a reality and can be seen as the preferred approach due to

the rapid growth in emerging technologies and its ability to address gaps until regulators and legislation fill them.

In his presentation, reference was made to a project by the Centre for Law, Science and Innovation, "Soft-Law Governance of Artificial Intelligence"[89] , at the Arizona State University (the entire database is available online). Following on the project, the is a recommendation to promote AI Soft Law version 2.0. This will:

- Promote transparency in all steps of the adoption and implementation of soft law programmes
- Involve trusted intermediaries
- Provide regular public reports on achievements and limitations
- Include direct and indirect enforcement

He ended the presentation with a quote by Winston Churchill, "Soft law is the worst form of governance, except for all the others".

James Sherer

Ethics in Artificial Intelligence and a Practical Approach to Presentation and Defence [90]

When looking at information governance or big data applications, together with the utilisation of AI, one engages with the domain of weak AI, or the process-driven algorithms, that assist with decision-making. These then do not necessarily replace humans in the workplace, but they may replace individual decisions made by humans. In his presentation, James Sherer gave examples of American (such as the FTC), Chinese and the European Commission's approaches to big data and AI applications and resulting regulations. One can consider, for example, the GDPR with its regulations and legislation about privacy, and the impact it has on big data and information management.

The foregoing raised the question of what regulatory enforcement meant? Part of the process with the FTC is to break down the various components of the regulation, to make it more streamlined and accessible to the public. Some of the components were briefly mentioned:

- The data-gathering phase of algorithm development
- The data compilation phase (which includes data cleansing and evaluation)

- Based on the data selection, one must then decide on which model to use, which is the next phase of model and AI application/tool selection
- The following phase is disclosure, also known as the step of consent
- Finally, the next step is model deployment which should be supported by a deployment strategy and regularly audited to check accuracy and correctness

So, throughout this lifecycle, citizens are informed of what will be done, how it will be done, the quality of the process has been clarified and checked, internal checks have taken place and disclosures have occurred, and finally, the model is being applied. A challenge that potentially arises is the aspect of responsibility, for once a model is deployed, whereto does responsibility extend? Hence, Mr Sherer concluded that the concerns and considerations throughout the lifecycle must be built in from the beginning, to ensure that responsible practices can be both observed and reported on.

Isabela Ferrari

The Honorable Artificial Intelligence risks and possibilities of algorithmic decision-making in the Judiciary [91]

Technology is reframing the way we live. This can be seen in the instances where computers and AI are making the decisions humans once made, and in this case specifically, within the legal domain. Keeping in mind the concerns that arise, the presentation by Isabela Ferrari focused on the risks and possibilities of algorithmic decision-making.

AI can be adopted to 1) provide recommendations to judges, 2) provide judgements that must be followed, and 3) replace human judges in some instances. Although this might be frightening, the developments and opportunities do make sense, for example insofar as those decisions may pertain to only proprietary rights and small amounts. Ms Ferrari gave an example of a robot judge being developed in Estonia to handle small claims. In such instances, due to the repetitiveness of these cases, there may not be much need for human creativity. Robot judges can foster the rule of law and values that are upheld in legislation, such as accessibility, efficiency, consistency, and the handling of backlogged cases.

As addressed earlier, with the opportunities, come the concerns- such as the opacity of algorithms. Algorithms make decisions based on their ability to apply machine learning: they learn based on the data that has been input and therefore create their programming. The point is emphasised that machine learning algorithms learn by finding hidden patterns in this data following several

correlations in many layers. This means that when the output has been provided, it does not allow humans to fully understand the internal process of how the algorithm got to that decision. This is also known as the black box of algorithms, for just looking at the code is insufficient to provide such decisional clarity. Hence, there is a gap between the activity of the programmer and the behaviour – or outcome – of the algorithm. To address this concern, programmers are engaging in a developing field known as Explainable AI.

Another concern is bias. If biased data is input to algorithms, the output will also be biased. Since humans and society are inherently biased, the patterns are replicated, targeting (or excluding) historically disadvantaged, vulnerable, minority and/or marginalised individuals and societies.

In conclusion, the concerns do not only imply negative consequences when adopting AI in decision-making, for the opportunities should also be considered. We should instead ask how machine learning can be calibrated to improve decision-making, address bias in human decision-making, and reduce opacity in the internal machine learning processes.

Filipe Medon

Civil liability and Artificial Intelligence [92]

The main goal of the presentation was to demonstrate how, despite all its benefits, AI can cause severe harm to society. This is indicative of why it is imperative to update the traditional civil liability schemes. With the proliferation of technologies, the scope of AI is also expanding, enhancing daily human activities such as driving and providing additional security measures such as avoiding human-caused accidents.

Concerns that arise from AI include its opaqueness, ability to reproduce existing biases in society, and poor quality in data. To mitigate this, transparency of, and diversity in, data must be encouraged. Together with this, we should collaborate in promoting the ethical development and testing of AI. This can be achieved by encouraging regulatory sandboxes.

AI poses risks to civil liabilities due to its complexity, autonomy, limited explainability, unpredictability, and the fact that multiple actors contribute to its design. The core issues become clear now, that if many entities are involved throughout varies phases, who will be held liable?

In resolution to the issue of liability, three core components are elaborated on, as also discussed in the book “Artificial Intelligence and Civil Liability”[93] [94 . These are 1) the parties involved, 2) the

type of AI, and 3) its autonomy which may alter the risks involved. Finally, global collaboration is of utmost importance.

Justice AK Sikri

Artificial Intelligence: Growing threat to privacy [95]

Privacy is a very important set of human rights and has authoritatively been recognised by the Supreme Court of India (Justice K. S. Puttaswamy v Union of India Supreme Court case [96]). Conversely, the Constitution of India does not explicitly recognise privacy as a fundamental right, but recently in a court case it has been identified as such, also since it links with Article 14 "Right to Equality", Article 19 which refers to freedoms, and Article 21 which is the "Right to Life and Liberty".

Justice AK Sikri acknowledged that privacy consists of various facets and likewise, can be violated in many ways. In the context of AI, this right must be best protected. It is also recognised that AI is already embedded in many aspects of our lives. It also has the potential to improve outcomes and the delivery of services across various sectors of society as well as government. What must be emphasised is the "National Strategy of Artificial Intelligence" [97] (NSAI) which was released in India in 2019 by NITI Ayog[98]. The NSAI has attempted to bring AI into the spotlight of reform policies and to utilise research to solve problems. The aim is therefore not only to solve national societal and industry concerns but also to play a global leadership role by scaling these solutions.

The opportunities are however counterbalanced by the challenges and impacts – direct and indirect – AI poses to human rights. Privacy, as mentioned earlier, is very central to the discussions on AI, since as a right, it has much to do with the dignity and identity of a person. As a notion, privacy is expanded on by defining it and reference is again made to the "Fundamental Right to Privacy" case of Justice K. S. Puttaswamy v. Union of India[99]. What is problematic is the fact that the surveillance systems (in India), are being developed without effective social engagement. Together with this, companies continue to feed individual and vendor data into AI systems without these stakeholders' consent or knowledge. Some problems arise such as data exploitation, identification and tracking, voice and facial recognition, prediction, profiling, decision-making, and the personalisation of preferences.

In conclusion, in the era of AI, AI data does not only define us, but it also plays a role in the development of AI products and services targeted specifically at individuals. This means that users – individuals – become the product. It is imperative to regulate data collection and management within a defined strategic framework. It is an essential condition for an open and democratic society, as well

as individuals' self-fulfilment and the exercising of freedom of expression. Therefore, a robust legal system is fundamental in protecting the right to privacy.

Dan Shefet

Artificial Intelligence and Justice [100]

Due to the enormity of this field and its implications, the focus of this presentation was "Who judges the judges?" In this presentation, Dan Shefet expanded on problems associated with the justice system together with examples and solutions. In particular, how AI can be incorporated into these solutions to assist with the justice system problem was recommended.

The presumption of innocence is being heavily challenged today by social media and this tendency of political correctness. These two aspects have shifted the burden of proof, which is a danger to the presumption of innocence, leading to the influencing of judges. Consider for example how a judge may be influenced in his decision-making should there be a particular public outcry on social media for or against a case, even if the public does not have all the (accurate) information at hand? Due to the unpredictable nature of court cases, the notion of equality is challenged, depending on who can afford, and has the best access to resources, such as lawyers, finances and information. This is a threat to democracy and trust in institutions, especially if biased decisions are being made.

Subsequently, AI has been criticised for being biased together with the developers' role in this bias. It was however noted that this bias is not done so wittingly, i.e. developers do not all consciously code bias into their programmes. Bias and prejudice are unfortunately features of humanity. It was argued that in this case, AI which is based on logic, may be less biased than humans since it is 100% objective. This is because AI can avoid (human) statistical miscalculations which will help prevent a miscarriage of justice. It has been recommended to the French Ministry of Justice and the European Commission that AI should be included in the judicial process, in the following manners: 1) the profiling of judges, 2) AI can be used to analyse precedent, and 3) it will assist with the analyses of facts and evidence.

Artificial intelligence is being challenged for being biased, but unfortunately, the judicial system is biased. AI is a solution that could be applied across the board.

References

[82] https://youtu.be/KOvydAJSlkg

[83] https://www.dwt.com/blogs/artificial-intelligence-law-advisor/2020/05/uspto-ai-inventorship-ruling

[84] https://artificialinventor.com/dabus/

[85] https://theconversation.com/in-a-world-first-south-africa-grants-patent-to-an-artificial-intelligence-system-165623

[86] https://youtu.be/Gq3f9PDvOlI

[87] https://youtu.be/eQ6-8U3aQk8

[88] https://youtu.be/Cd-Nigc_YvM

[89] https://law.asu.edu/centers/law-science-innovation

[90] https://youtu.be/D6weDm0qW34

[91] https://youtu.be/LEyix4tMm0o

[92] https://youtu.be/C-uuP2hEHyA

[93] https://uerj.academia.edu/FilipeMedon

[94] https://www.migalhas.com.br/coluna/migalhas-de-responsabilidade-civil/351200/danos-causados-por-inteligencia-artificial-e-a-reparacao-posta-a-prova

[95] https://youtu.be/H0NMlrphLPI

[96] https://indiankanoon.org/doc/127517806/?__cf_chl_jschl_tk__=pmd_TPQx6kHoEB7kP8FVlx81JFdULh3F3C87afp.bDF3E0s-1634136771-0-gqNtZGzNAjujcnBszQg9

[97] https://indiaai.gov.in/research-reports/national-strategy-for-artificial-intelligence

[98] https://stip.oecd.org/stip/policy-initiatives/2019%2Fdata%2FpolicyInitiatives%2F24951

[99] https://www.scobserver.in/court-case/fundamental-right-to-privacy

[100] https://youtu.be/5iXWYe0d2is

[81] https://youtube.com/playlist?list=PLTULETeBko5Ha-J34YqOJjTieBXJjkq80

[81] https://youtube.com/playlist?list=PLTULETeBko5Ha-J34YqOJjTieBXJjkq80

12. AI, Big Data and Innovation

12.1. Introduction

The AI, Big Data and Innovation thematic area explored innovative and creative ways in which AI can be used to streamline and improve processes across a diverse representation of sectors. Six presentations from the United States of America, Canada, Chile, Germany, South Africa, and Turkey dove into both the opportunities and challenges. Jason Mars first provided an overview of the transformative and disruptive implications of AI. He took us on a journey of how society developed across millennia and developed policies and guidelines that accommodated, shaped and adapted to our intuitions of mores and folkways, values, and beliefs within societies. Our policies and engagements were influenced by geographic and relational proximity. There is however a fundamental difference between pre-internet society and the one we experience now. Notions of proximity have shifted drastically, although we may be a citizen of a country, living in a specific town or city, we are also global citizens and connected via the internet. Information is now moulded by local and digital mores and beliefs, and our social fabric has also adjusted. These beliefs can be manipulated, and the fabric is torn, and that is why public policy is of utmost importance. Media plays a role in informing policy, and it must remain a channel, managed with integrity, to communicate and develop truthful and accurate information.

Maria Paz Hermosilla expanded on the benefits of AI, especially in the public sector and argued that transparency needs to be prioritised. In the promotion of access to information, an interesting point was raised around 'significant transparency' or 'meaningful transparency'. This means basically that you do not necessarily want to make *everything in* a system transparent, but only those things that are important for people to know. Differentiating between what is useful to know, and what is not, may pose a challenge for regulators, and public and private sectors. But it is agreed that if certain information is within the public's interest, they have the right to request and gain access.

AI as an enabler to small business development was the theme of Melanie Stuetz's presentation on "Democratizing the knowledge of successful venture capitalists: From a "pre-flight check" for business ideas to entrepreneurial thinking". The presentation reflected on Melanie and her husband, Andreas', childhood dreams and experience as entrepreneurs and pilots, which inspired their current endeavours. The importance of a pre-flight check was highlighted – not only when flying, but also when planning a start-up. Brad Mostert also talked about AI in small to medium businesses. It was observed that the majority of developers in the space do not have a formal computer science background but are instead highly effective problem-solvers and must also play a variety of roles within their business. But with the increase in and availability of open-source software, citizens have more opportunities to gain access to and develop skills about developers. This can be referred to as the "access renaissance". But just because you have access and some skills, it does not guarantee the best possible outcome should a machine learning algorithm be implemented, it can however provide a satisfactory outcome. The better-trained software developers are, the better able they will be to improve their understanding and reduce inaccuracies and uncertainties.

Abhishek Gupta provided a roadmap to more sustainable Artificial Intelligence systems. If one understands the context of a problem, especially about AI and emerging technologies, one is better positioned to develop sustainable software. The carbon impact of AI is a topic that was explored creatively in the presentation. Not only does this have an impact on the environment, but it brings with it a host of societal concerns. Four key recommendations were made to help guide our decisions and actions towards achieving an eco-socially responsible AI system.

And finally, the macro eco-social considerations of AI and mirrored micro-human considerations of AI implications of brain-machine interfaces (BMI) were discussed. This was presented by Ibrahim Kushchu. To situate the context, a few definitions were provided to clarify the meaning of AI and BMI, and these were extended to the actual applications of technology interfaces between external stimuli and the brain. These technologies provide solutions to those who require prostheses for limbs lost, they provide the ability to control external machines, but conversely, they may provide the opportunity for free will to be influenced. If AI is used efficiently, it can enhance our right to know.

Jason Mars

Transformative and disruptive implications of AI [102]

Artificial Intelligence and technology, and their relationship with public policy and media were central themes of Jason Mars's presentation. He spoke about how these technologies impact the way we look at these interesting worlds and how they are connected and will evolve.

He stated that public policy looks at the development of laws, systems and how communities develop. It captures our intuitions of mores and folkways, values and beliefs within societies. Thus, it is of much importance, especially in terms of having an open media, a free media, a media that is not regulated too much. The nature of our world is changing because of technology and AI. AI aren't citizens, so we do not have to grapple with the notion of what happens when we make AI citizens? Currently, AI is instrumental to analyse data, and it is an accelerator for ways in which technologies can continue to be created and used for innovative purposes. However, it also fundamentally changes the fabric of a society, what we are experiencing now is completely alien to us. Consider modern humanity/civilisation for the past 13000 years – we were defined by proximity and by geographic proximity. This defines communities pre-internet, where communities separated geographically have limited to no bearing on other communities, and where these granular communities develop themselves and their public policy applicable to their circumstances and needs. The nature of these granular communities was fluid and changed gradually over time. Public policy is a living thing – it is never complete – there is impermanence.

He also considered the role media played in informing policy. It creates a channel to communicate and develop truth, essentially a unified notion of truth. However, fundamentally, public policy trails behind innovation and policy. Especially now due to the rapid growth and change in technologies. We are now in a massive change historically of what communities look like, due to two reasons:

- The geographic proximity has less and less bearing on what a society is, i.e. we have organisations with no physical location. This means we have a blended community due to the internet, and policy and media trail behind
- The permanence of all activities that are expressed through digital needs is on a trajectory of moving into this 'new' social fabric. It is not the geographic fabric, but the digital fabric and there is a permanence herein that is changing things.

Shows how the social fabric has changed, as can be seen in terms of social sensitivities – racial, ethnic, gender, religion – which shifted across time. We now need a much broader sense of what policies make sense for our current contexts. How do we acknowledge the trajectory of our social fabric from geographic to digital proximities and how does the permanence of media? Media will have a field day in modern and future politics or public platforms such as which celebrities have because any aspiring

journalist can go and find what politicians have said and done when they were younger – based on cultural sensibilities we have now.

He conveyed that we need to catch up as to how justice needs to work and the processes, we follow in developing these policies. We need to be thoughtful in terms of media on what is okay and not okay. We should have an expiry date as to when something was said in the past, and how it could potentially influence the future. AI can be used as a tool to dig up and divulge data and trends on an individual in the public's eye. We are accelerating our ability to access information on society. We must be thoughtful.

Melanie Stuetz

Democratizing the knowledge of successful venture capitalists: From a "pre-flight check" for business ideas to entrepreneurial thinking [103]

At IDEASCANNER [104] - where business ideas are scanned – access to information is provided by democratising the knowledge of successful venture capitalists. Melanie Stuetz's presentation posed three questions together with their responses:

1. Why do most start-ups fail?
    a. The market hasn't been accurately identified, lacks insufficient funds, etc.
2. What makes a business model successful?
    a. Natural language processing and sentiment analysis provided some insight: the focus is essential, the solution must solve 'pain', the solution must save time and money, a moat/buffet is required to support the start-up in the long term, and finally, the solution must be easy.
3. How can you improve a business idea?
    a. Artificial intelligence must be used to foster human intelligence. With IDEASCANNER the application is very easy. By answering simple yes/no questions, a success percentage will be given to indicate business viability. In the course of validation, IDEASCANNER had a 90% corroboration.

She provided some general statistics, such as that 137,000 start-ups were founded each day as compared with 120,000 start-ups that fail every day. That means is only a mere success rate of 12%. She outlined that IDEASCANNER can help with this problem by utilising AI to democratise access to

successful entrepreneurs' knowledge. IDEASCANNER is also engaging with universities to make the technology more accessible to students to support potential entrepreneurs even sooner.

Abhishek Gupta

A roadmap to more sustainable Artificial Intelligence systems [105]

Abhishek Gupta covered the following issues in his presentation:

1. Societal (social inequities) and environmental (carbon output) impacts of AI
2. The current state of carbon accounting in AI is still in a nascent stage
3. How these issues can be solved

He stated that an aspect one does not immediately connect with AI, is its carbon impact. Regardless, it has a huge impact together with raising societal concerns. These risks can luckily be mitigated, but for that, carbon accounting is required to best guide our decisions and actions. The accounting part is important, because "we cannot fix what we cannot measure".

Mr Gupta proposed four key areas: 1) better data aggregation and collection as well as research, 2) standardisation and measurement of different methodologies which will enable comparisons, 3) by mapping the needs of practitioners the requisite tools – code or web-based – can be designed and implement to improve the workflow and 4) practice which entails a strong degree of evangelism to normalise sustainable AI systems.

He suggested in his closing remark that an eco-socially responsible AI system is imperative to contribute to sustainability because essentially, we do have the power to effect change by making informed decisions, sharing ideas and designing solutions that are carbon-efficient [107].

Brad Mostert

Artificial Intelligence in small to medium business [108]

As opposed to speaking about inherent biases in training and/or big data sets, this presentation by Brad Mostert focused on how these problems come about, especially from the perspective of someone in the business. Ranging from local development community entities (on PHP, to engaging with developers from a variety of different organisations, insight has been gained into how a wide variety of local companies are using code and AI solutions to solve their challenges.

A key observation was made that though the majority of developers in the space do not have a formal computer science background, they still are highly effective problem-solvers. If you are in a small business, it means that resources are restricted and that the staff needs to play various roles.

One of the first takeaways is that AI is not a core business competency for these developers or their competencies. The other effect of these limited resources is that they will seek any competitive advantage that can be achieved by one or two people, in a reasonable time for an achievable cost.

So where does AI come into the story? AI has progressed significantly in the past decade. The improvement in terms of access to these technologies has improved. Whereby undergrads and workshop attendees have more instantaneous access to open-source software. Call it a type of an "access renaissance". One of the main ideas of a developer meetup is to share and discuss solutions. A factor that arose during the meetups pertained to technical considerations (such as the performance of models on unseen data, implementation rates, etc.), but upon asking those questions, the responses were stunted. This might be because some of the representatives weren't from a computer science background. So, when using any of the machine learning algorithms aimed at optimisation, you are not looking for the best solution, you are looking for a satisfactory solution. This is because the problems you seek to solve with algorithms, tend to be hard. Machine learning algorithms are used to make a good guess. The aim ultimately would be to achieve the highest measure of certainty.

Next consideration is that access to the information, can better define confidence in the results from algorithms, and the education to correctly choose and configure a case, is something we can do better. When all "insignificant" errors in spreadsheets get added up, the cost is not insignificant. In conclusion, the use of machine learning in small to medium businesses is the flame that should encourage the handling of certainty better.

Maria Paz Hermosilla

Algorithmic transparency in the public sector [109]

Data science can be used to improve people's lives and transform the public sector. Of specific note is the improvement of transparency of automated decision-making systems which include AI, but are not limited to AI. If these systems – albeit complex or simpler – are not implemented properly, they can affect human rights.

Maria Pas Hermosilla made a reference to Chile's Freedom of Information Law which promotes access to information, where a request for information was made known as 'significant transparency' or

'meaningful transparency'. This means basically that you do not necessarily want to make *everything in* a system transparent, but only those things that are important for people to know. These latter aspects include knowing what the goal of a system is, what the data is used for, what data is used or not used, what are the predictive criteria if this is a predictive model, etc.? A questionnaire-based on these was designed and made available to different public agencies, but they found it difficult to get responses. This meant that barriers, to gaining access to these systems and required information, existed. Where information was available, it was not necessarily freely available, which provided yet another barrier. In some instances, there was copious processing of information that had to take place first, before sense could be made of it to answer posed questions.

Following this, the research team reached out to the Council of Transparency which is an autonomous agency that has oversight over compliance with the access to information law (with access to more than 800 agencies dealing with basic information). In this second process, there were positive responses and feedback, but they found that many agencies did not necessarily have automated (decision-making) information systems, but rather only digital repositories. This means there is a challenge as to what is called, and what an agency understands, as an automated decision-making system. She gave the example of The Ada Lovelace Framework that is being used to measure the transparency of information across these public agencies to better understand the type, method, categorisation, and accessibility of information on these systems. Because even though the public agencies contain information, it does not mean the information is easily accessible by the public.

In summary, the first challenge to be addressed is what is understood by an automated decision-making system, the second is what kind of information should we have about these systems (not just technical, but be better understood), and thirdly, there is not much information publicly available at all!

Ibrahim Kushchu

Implications of brain-machine interfaces (BMI) for "our right (not) to know" [110]

The presentation focused on these new technologies of brain-machine interfaces that use AI, and how this influences the formation and processing of information [111] as well as the new form of information that results from these brain-machine interfaces. It is essential to note the core definitions that guide this discussion. Ibrahim Kushchu defined intelligence as the "capacity to reduce uncertainty to adapt to changes in life situations". This leads to knowing to bet and having adaptive solutions to problems. Secondly, AI – which is difficult to define – is the "capacity of machines to reduce uncertainty to adapt to changes in life situations. This should us to know better and have adaptive

solutions to problems". Mr Kushchu postulated two technical characteristics of AI: 1) as a data-hungry monster that intelligently collects relevant, reliable, and the right amount of information and 2) as a gentle tailor that intelligently customises and delivers relevant, reliable, and the right amount of information.

He stated that If AI is used in a good way, it can enhance our right to know. Consider for example equality in job searching, access to education, etc. Conversely, our right to know can be abused by using AI. For example, is information is dictated to an individual (predictive recommendations, targeted mis/disinformation), and information can be forced (such as manipulating brain waves to produce signals to the body to stimulate fear or relaxation) by using intelligent body-machine interfaces and interactions. There are some examples of the body-machine interfaces and interactions, that include: wearable devices, intelligent prostheses to replace lost limbs, and then finally the brain-machine interfaces – consisting of one or two-way direct communication between the brain and external world – influencing and exerting other behaviours (see the Neuro-link project by Elon Musk). This last example can interfere with free will – which becomes an issue from philosophical and ethical perspectives – and experimentation on both animals and humans (see for example the Brain-net project).

Many of the projects are funded by the United State Defence Agency (DARPA) and are done in collaboration with universities. The technologies resulting from the experiments 1) are mostly non-intrusive brain interfaces, 2) can read and write to the brain and 3) can control external machines.

What are the implications in terms of access and our right to know? For the former, it is no longer just information as text/image/video, but also involves signals to and from the brain. The source, medium and target of the information are also changing. In terms of the latter, forced information can be designed using AI and when implemented, can lead to involuntary behaviour going contrary to the notion of free will. This also makes our right to not receive information very critically.

References

[102] https://youtu.be/moo4zostMk0

[103] https://youtu.be/g2J1F7Fi_ak

[104] https://www.ideascanner.com/

[105] https://youtu.be/t6LGZ0xeGVs

[106] https://montrealethics.ai/state/

[107] https://devblogs.microsoft.com/sustainable-software/the-current-state-of-affairs-and-a-roadmap-for-effective-carbon-accounting-tooling-in-ai/?WT.mc_id=green-30456-cxa

[108] https://youtu.be/tP8IsvcBGfI

[109] https://youtu.be/FEQcr4eFlBo

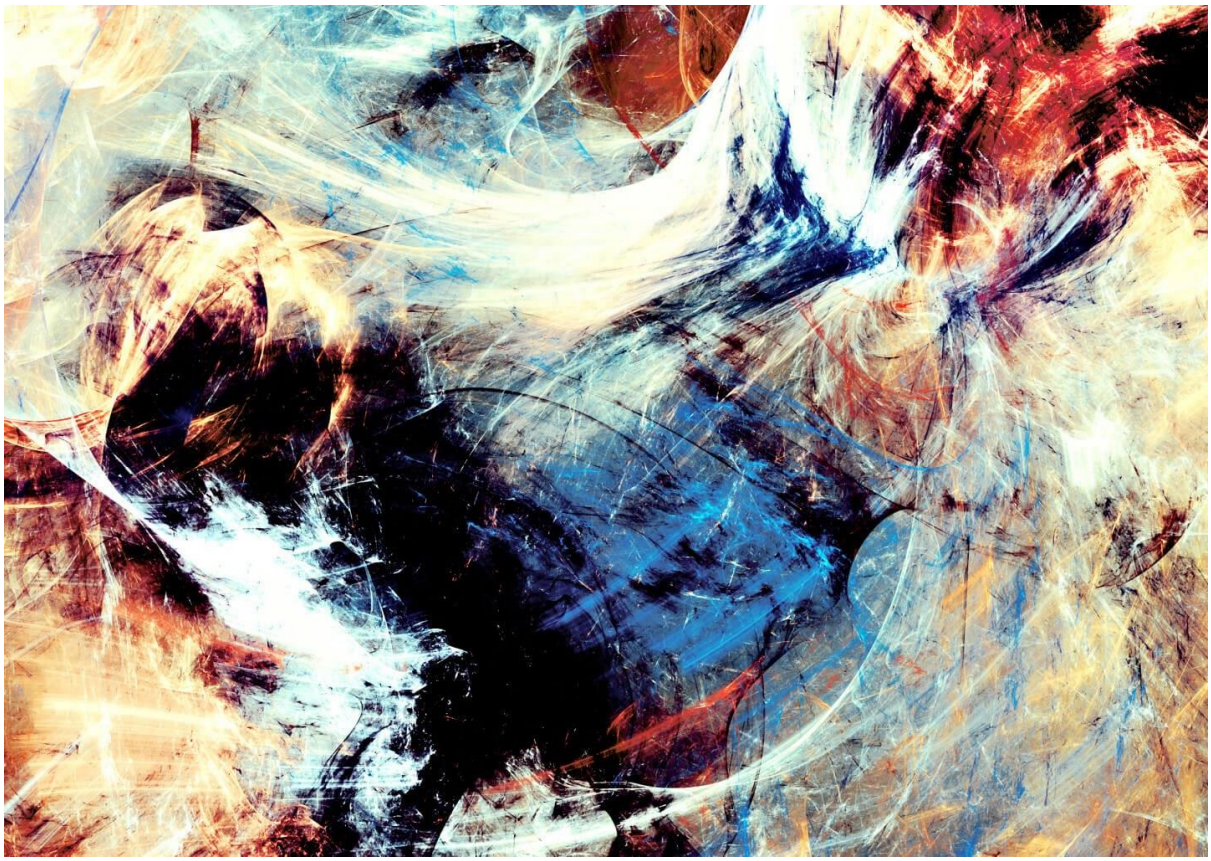
[110] https://youtu.be/5hDb3rGgKvc

[111] https://thenextminds.com/

[101] https://youtube.com/playlist?list=PLTULETeBko5G9NshDuSZcmMQE_BzyVasP

[101] https://youtube.com/playlist?list=PLTULETeBko5G9NshDuSZcmMQE_BzyVasP

13. AI and Creativity



13.1. Introduction

Five presentations from the United States of America, Canada, Jamaica, and Israel dealt with the creative scope of AI and the endless possibilities it contains to visualise the design, compose music and test our boundaries of comedy and woke culture.

Gene Kogan gave us insight into his childhood where he enjoyed playing video games and how this inspired his interest in artificial artistry. The artificial artist concept explored notions of personhood and agency in AI, as well as experiments with computational agents that mimic life. He listed a few properties of what can be deemed an autonomous artificial artist, which included autonomy, originality and uniqueness.

In Colin Clark's presentation, he referred to the Inclusive Research Design Centre where they work to ensure that emerging policies, systems, and design practices are inclusive of the full range of human diversity and cultural participation. It is lamentable that even though there are efforts to promote inclusivity, there are still instances of discriminatory decisions made by automated systems. Minority groups – due to limited data – will also be represented less in data sets which contributes to them being seen as outliers by the algorithms and machine learning training regimes. A call was made for policies and regulations to ensure the inclusion of minority groups and culturally diverse communities.

Can algorithms be creative? This was the question posed by Galit Wellner. She extended this question by pondering whether they may even have imagination. What does imagination even mean? Ms Galit took us back to the philosophical theories on imagination by Immanuel Kant and postulated that imagination is a bridge between my perception and my understanding. She then queried what creativity means, and grounded it in notions of novelty, value and surprise. It seems possible that AI can indeed be creative, and that a model – operated by a human and content generated by an AI – may be feasible, especially if AI and humans collaborate. In this instance, we can see how technology shapes us and create value, whilst we shape valuable technologies.

These instances of human and AI co-creation of artistic work were put on display by Suzanne Ciani when she expounded on music, composition and Artificial Intelligence. Ms Ciani was a speaker at the very first TED Conference in 1984. Mandelbrot – who was talking about fractals – was at this conference too, and she was struck by the simplicity – for we all strive for simplicity in our solutions – of a crystalline description of complexity. Ciani provided a demonstration of the instrument, Buchla 200e, which is a machine that uses repetition to create music. A couple of patterns were showcased to illustrate the parameters of sound and complexity as performed by modular electronic music instruments.

Trudy Bell acted out two scenarios regarding the current realities on personal data collection, de-anonymisation, as well as the monitoring of communication to ensure political correctness. Through these skits, the (alarming) absurdities of these issues were highlighted, but they also inspired us to take an objective look at ourselves and find some humour amidst all these serious considerations. AI and the internet are tools that make our lives more efficient but also more complex. Essentially, it is our responsibility to manage how we interact and react to AI.

13.2. Overview of presenters

Gene Kogan, Artist

Artificial Intelligence and Creative Intelligence [113]

Gene Kogan introduced the Abraham project while reflecting on his childhood where he enjoyed playing video games and running simulation tournaments where the AI played against each other. He described how this inspired his work and interest in AI-generated art. Seeking to find the aesthetics of neural networks, produced a piece of work “A Book from the Skye” in 2015, applying DC yen to making Chinese handwriting using a data set of handwritten characters. He stated how interesting it was to explore the capacity to generate images that came from an actual data set, learn Chinese handwriting

and use techniques such as deep dream and neural style transfer to make interesting graphics and animations, some of which seem like infinite loops. This can also be applied to Google Maps – zooming into locations.

Moreover, he defined the concept of the artificial artist. The concept stems from the 1980s (Harold Cohen), who endeavoured to build a robot called Aaron. This was probably one of the first attempts to flirt with the notion of personhood and agency of AI. Though there has been lots of experimenting with computational agents mimicking life, Mr Kogen also noted that the limitations of AI Artists include the fact that in all AI artists so far, a programmer writes an art generator. This leads to the artist merely speaking through the programmer. Thus, AI artists end up acting like a tool and lack agency. Attempts have been made to address this, such as the ArtDAO idea (2016), pioneered by Trent McConaghy and Simon de la Rouviere which entails the ability to:

- Create generative art and make multiple editions
- Timestamp on blockchain
- Sell them on Getty/Shoppify/OpenBazaar
- Transfer rights to buyers
- Pay for computation from proceeds

Mr Kogan described other multifaceted projects such as ArtDAO-line and Abraham, proposed by him [114] – which have emerged intending to create an autonomous artificial artist construct- having autonomy, originality and uniqueness- that produces unique digital art. Its motivations include:

- Create artificial life
- Interesting in modelling and exploring collective intelligence
- Advance more general causes
    - Decentralisation
    - Security and privacy
    - Fairer economic models

He concluded that the idea is to use crowdsourcing to group-curate an AI-generative model and help with gaining autonomy. There is intelligence in groups – such as ants, bees, and termites – and this

also applies to human beings. He concluded that to model the collective imagination is probably his greatest interest.

Colin Clark

Decisions of our own [115]

Colin Clark started by describing his role at the IRDC [116] [117]. He talked about his work which was to ensure that emerging policies, systems, and design practices are inclusive of the full range of human diversity, thus promoting cultural participation and creative expression for all.

AI systems are predicated upon an emerging weave of proprietary hardware, software and data that are both local and remote. Increasingly we cannot separate the servers that host the cloud services of technology companies such as Google, Meta etc, from the specialised hardware chips that run inside our mobile devices. Combining this with the vast and unprecedented troves of personal data required to train a system to generate results, AI can only be developed by becoming dependent on these stacks of these technologies and data sets. Material infrastructure together with free-market capitalisation, which comes at the cost of eroding working conditions, are underpinned by the invisible human warehouses and labour that also make this possible. All of these aspects are involved when the term artificial intelligence is used.

He referred to the Platform's culture of inevitability and wished to highlight the sense in which AI systems embody platform logic, that results from the way technology is designed by tech companies, specifically from Silicon Valley. He argued that these are increasingly at odds with values of equity, fair work, and social justice. Unfortunately, the way the technologies are developed and connected with the ideologies of progress and innovation, platform and the language of AI and ML drives a culture of inevitability. This culture of inevitability means that these technologies will be deployed whether we want to engage with them. This is the notion of "progress", and we cannot say "no", because these technologies are merely seen as tools. It is therefore up to us to ensure they are used more responsibly and ethically.

He stated that they have found increasingly the instance of discriminatory decisions made by automated systems, even though there is a proliferation of data. Data gathering and machine learning training methods must be more representative of communities impacted by the consequences of such biased decision-making. The issue with representativeness is the fact that minority groups – such as people with disabilities – will always be considered outliers due to the algorithms and machine learning training regimes. Outliers will inevitably either be recategorised or even excluded from the

data analyses. Uniqueness and difference are a kind of error in the representation of data. Refers to the term “new gym code” whereby technologies disproportionally target black, immigrant and racialised communities as all-inclusive subjects and thus suspects in a data regime of criminalisation. We need the option of being excluded.

We need policies and legislation that ensure that the platform companies and developers of AI technologies are accountable for the decisions, both by design or unintended, especially to include the voices of minority groups and perspectives of diverse communities. A deeper form of representation is also needed, in decision-making, this includes ownership and governance of the platform technologies. Luckily there are successful models of collective governance, that include multi stakeholder groups which work together in designing cooperative platform technology alternatives. New ways that are fairer, democratic and more inclusive. There is a project known as Cooperative Data Communities” that work to address the systemic inequity of AI and data platform. One of the partners is the “self-Employed Women’s Association in India”, which is the largest women-owned cooperative in the world and has more than 1.5 million women-worker-owners. They both grow and govern their initiatives, and also contribute to their communities on grass-root levels. The project is developing a toolkit of community-led design practices and cooperative governance approaches, sustainable business models and case- studies. Open-source tools are also being developed. We have learned to design with communities, as described in the community co-designed toolkit. What we make, is indivisible from how we make it and with whom.

Therefore, individual benefits must be balanced with growing healthy and sustainable communities. More reciprocal alternatives, to modern platforms, must be created.

Galit Wellner

Can algorithms be creative [118]

Galit Wellner led her presentation with the question "Can AI be creative, and do they have imagination?" She noted that until recently this notion was deemed to be unimaginable, akin to science fiction. However, this had changed, as with the example of the “Portrait of Edmond Bellamy” that was sold for $432,000-00 by Christies. The portrait was created by an algorithm and it was not the only example of an algorithm that has managed to be creative and develop works of art.

She referred to Immanuel Kant who defined what we believe imagination is. Kant said:

- Imagination is the faculty of representing an object even without its presence in intuition" – for example imagining virtual conference presenters due to Covid-19 impeding physical collaboration;
- Imagination works by and through a "synthesis of intuitions according to categories";
- Imagination first "conjoins the manifold of intuition" and then performs on that manifold a "schematism" of concepts", for example looking at the clouds and seeing images of animals. These are concepts that we hold in our minds;
- The schema is like a common denominator for a certain group of images

She stated that imagination is a bridge between one's perception and one's understanding. Schema is foundational because we cannot experience the world without them. However, on considering algorithms, it can distinguish between very similar-looking objects, even though they are completely different (an example is provided of a ginger cat and an ice-cream sundae with caramel sauce). Thus, these algorithms are doing exactly what Kant is telling us. She argued that we have assumed imagination is unique to human beings, but the algorithms are doing the same.

So, what is creativity? Margaret Boden defines creativity along the three lines of novelty, value (also related to understanding, and we need humans for understanding), and surprise. These three elements help us understand what algorithmic creativity is.

This leads to a layered model, which composes layers of imagination and creativity. Each layer is under the responsibility of either humans or algorithms. Ms Wellner developed her theory of imagination based on the layered model – for which an AI still need a human operator. It is composed of three basic elements:

- Starting the project
    - Defining the algebraic formula
    - Dedicating financial resources
    - Securing the needed computing power (servers, storage…)

- Data collection phase
    - Selecting content types, collecting data from multiple resources into a dataset (consider the verb to create)

- Meaning generation
    - There are attempts to teach algorithms to extract meaning
    - In textual databases, meaning can be “understood” by AI algorithms via vectors of words with which they calculate word proximity

However, sometimes the meaning can be inaccurate. Since algorithms can be inaccurate, why human operators are still required to develop the values.

The model, therefore, states that humans and AI work in collaboration: humans come up with new ideas and AI combines and generates the content. This essentially leads to a collaborative and co-shaping model whereby humans and technology shape each other, but humans always remain involved.

Suzanne Ciani

Music, composition and Artificial Intelligence [119]

Suzanne Ciani's presentation focused on the use of randomness in performance practice with the (Don) Buchla analogue music modular instrument [120]. With a background in classical music and extensive tertiary education, Ms. Ciani experienced the concept of electronic music and its possibilities, from then onwards she knew this will be her expression. Her relationship with the machine was one of interacting with it live. It is interesting to note that with this machine, all of its data (spatial positioning, voltage, connections, etc.) were transmitted by LEDs. To this day, it is an element lacking in the instrument design of analogue modules. She described how on her journey to New York and in her career as a musician/artist playing the Buchla, she met an agent, who recommended she receive additional training for them to communicate. This led her to find that she was in love with a machine. The denouement of this training/experience was that people are in fact machines and that we just need to understand each other’s operating systems ,for us to communicate better.

She stated that when she performs now, she is aware of techniques that are needed to enhance the capabilities of the machine. As with other machines, these machines are adept at repetition. Randomness is not chaos, it is not out of control. With the Buchla, one can be very specific with the

randomness, due to the parameters one can put in place to refine the content. Ms. Ciani closed her speech with a very interesting demonstration of the Buchla 200e, where she showed a couple of patterns of randomness.

In conclusion, the use of randomness in a very judicial way, is a huge enhancement to the live performance of modular electronic music instruments. Anything that is voltage controllable – basically all parameters of sound – can be manipulated with a degree of randomness. This is an important technique to give an expansion of what the machine can give back to us.

Comedy [121]

Trudy Bell

The presentation was warmly opened by a reference to the importance of humour. A 'simulated' news broadcast was played, where the topic was AI and privacy and whether the government was doing enough to regulate how AI utilises people's information.

This led to a feature of a lady visiting a doctor who seemed to have the wrong pre-diagnosis. However, the doctor already knew what was going on, since "once you visit one doctor, all doctors have access to your information".The patient was shown to be shocked. She immediately raised her concerns about ethical issues and legal implications. The doctor then continued to divulge other personal information about the patient – such as her vehicle that had recently been seized due to non-payment. We returned to the simulated news broadcast, where the reporter asked, "How far is too far when compromising peoples' privacy and trust"?

The next skit featured a woman presenting a live vlog on her line of "Candy" products in different fruit flavours. Whilst busy arguing that strawberry is not a good flavour, she gets flagged by an AI persona for making a politically incorrect statement: "Strawberry is the worst flavour". Although her opinion, she is reprimanded because some people find it offensive. The AI argues that opinions are not factual and may entail misinformation. Whilst continuing her argument in support of her freedom of expression, she is muted by the AI, since she agreed to the platform's T&Cs. The skit was a disconcerting reminder of the movie *Minority Report*.

Trudy Bell through the short recording – utilising the example of strawberries and the reality of data collection and de-identification – showcased the potential absurdity, and the implications, of a data-driven society. One is starkly reminded of the tensions between freedom of expression, cancel culture

and hate speech, as well as one's right to access information but also protecting one's personal information.

References

[114] https://www.abraham.ai/

[113] https://youtu.be/HdCYOuh0UoI

[115] https://youtu.be/QV33hcsooyY

[116] https://inclusivedesign.ca/research/ocadu/

[117] https://idrc.ocadu.ca/about/

[118] https://youtu.be/l2-6lxcAUDs

[119] https://youtu.be/bS3gvgMxVDg

[120] https://en.wikipedia.org/wiki/Suzanne_Ciani

[121] https://youtu.be/yXjpp6POJRk

[112] https://youtube.com/playlist?list=PLTULETeBko5E196Oy8Ppj2sjdLFVESqSr

[112] https://youtube.com/playlist?list=PLTULETeBko5E196Oy8Ppj2sjdLFVESqSr

14. Youth in AI

14.1. Introduction

These six presentations were made by youth from the United States of America, Jamaica, South Africa, and India, on various topics regarding AI.

Tyler Jaynes raised the question of Algorithmic Personhood and Being. How do we measure the digital world to secure future inalienable rights? Towards answering this, Jaynes turned to science fiction to explore these emerging technologies and how they informed the way we perceived and engaged with society. If engineers take inspiration from science fiction, why cannot researchers also take inspiration from it? It was argued that if we only focus on AI, we miss out on the opportunity to capture and engage with other emerging technologies, such as nanotechnology. The presentation comes to a firm conclusion that we need to collaborate on definitions and terminology to avoid miscommunication.

Joshua Burgess prioritised openness and inclusivity for disabled communities in a new era. In this thoughtful presentation, four key areas are set out for contemplation, the value and importance of AI for disabled persons, a discussion of AI tools that facilitate independent living, addressing bias and ethics in the development of AI technologies, and encouraging a multi-stakeholder approach for increased inclusiveness. Referring to the WHO statistics on people living with disabilities, specifically, the blind, Burgess argues that AI can potentially break down barriers and increase accessibility.

Centring the focus on Artificial Intelligence, health and law, Ms Pia-Milan Green provided a snapshot of emerging legal issues. It is emphasised that the Covid-19 pandemic has accelerated the integration of AI technologies in the healthcare industry. Together with this acceleration towards improving service delivery and solutions to challenges Covid-19 pose, several concerns also arise. These pertain to physician liability, informed consent, privacy issues and big data liability. Ms Green stated that liability in healthcare will be influenced by the Explainability, transparency and predictability of AI systems and explained that discourses on agency and responsibility need to be prioritised.

Mukund Trivedi commenced the presentation with a personal reflection on design theory. About the amalgamation of AI and design and its application in the fields of healthcare and natural resources, Mr Trivedi argued that the process of design needs to be simplified. When AI is used to achieve simplicity, the technologies and their solutions will become more accessible, especially for people with disabilities. In addition to this, Trivedi introduces the concept that where there is water, there is literacy. Improving access to water will inadvertently improve access to education. AI can therefore be utilised to measure the contamination in water systems, treatment plants and sanitisation systems. It can also best recommend solutions for improving water service delivery and the treatment of such contaminants.

The need for water provision and literacy awareness is compounded by the absolute need for ICT infrastructure, especially in developing nations. This was the call made by Ufulu Martha-Junior Chisale who focused on the role telecommunications service providers play in ensuring people have access to affordable and functional communications networks. It was argued that both public and private sector organisations are confronted with ongoing pressures to streamline activities, nurture innovation, advance efficiency and achieve demanding organisational objectives through effective communication. Essentially this is their duty to citizens to ensure that basic needs are met, such as the payments of grants and programmes to distribute Covid-19 vaccinations.

Daricia Wilkinson prioritised the concept of safety and what it means to be safe. Her presentation was on an integrated human-centred approach to online safety. In a study conducted in the Caribbean, it was found that a large proportion of the respondents have experienced some form of online harassment and victimisation. To address these concerns, equitable design, on- and offline deliberations and the promotion of justice must be central to the solution of how harm can be detected by AI. Wilkinson argued that despite the limitations AI pose, it can be harnessed to be an effective tool to promote online safety.

14.2. Overview of presenters

Tyler Jaynes

The Question of Algorithmic Personhood and Being: Measuring the digital world to secure future inalienable rights [123]

Tyler Jaynes introduced his speech by questioning "How do emerging technologies impact society?" He stated that the impact was visible with digital technology, where everything was internet-based and suggested that we should work towards developing a common definition to measure virtual environments to set the stage for the granting of rights to AI systems and non-humans, or advanced-human entities. Even though many of these considerations were not immediately relevant, as seen in sci-fi movies, it was important to start discerning potential challenges, benefits, and solutions in advance.

In his presentation, Mr Jaynes questioned the nature of the virtual property. He questioned how it would be defined and determined. Was an IP address only attributed to a single person in the sense of the design of a digital profile of individuals? How would we differentiate between information across different media (would the platform or method impact the content, style or structure of information conveyed?), and how would we go about accurately distinguishing between public and private information?

Inspired by science fiction, he stated that these emerging technologies inform the way we perceive and engage with society. Virtual and augmented societies take a variety of different forms, which may confuse our understanding of their nature, as well as our potential engagements with fellow human beings. However, in this regard science, fiction guides us on how to approach, engage with and regulate emerging technologies. He recommended that we find virtual measures that can be compared with physical measures, such as physical property versus intellectual property, electronic property, encrypted information, and public and private information and realise a merger between virtual and physical spaces where the two become intertwined. Therefore, there will be no separation between physical and virtual spaces. He believes this calls upon a paradigm shift that will accelerate the need to develop online hubs for our digital identities, increasing efforts to justify the right to be forgotten, promoting legislation that supports privacy and digital property using cybersecurity regulations, and adopting universal means that grants legal authority to digital property ownership.

Joshua Burgess

Openness and Inclusivity for Disabled Communities in a New Era [124]

The presentation reflected on the experience of someone who is both blind and has had chronic hearing loss since birth. There were four key focus areas in the presentation:

- The value and importance of AI for disabled persons, specifically the blind
- Some of the AI tools that facilitate independent living
- Bias and ethics concerns, in the development of AI technologies, and how that intersects with data collection, privacy and the risk of marginalisation
- The importance of a multi-stakeholder approach for increased inclusiveness in developing a framework for AI in the Caribbean

He referred to WHO's statistics and said that approximately 2.2 billion people were living with vision impairment; about 1 billion were living with a disability. According to the International Agency for the Prevention of Blindness, up to 20 countries accounted for 77% of visual impairments (2.7% are from the Caribbean). Why was this important? In a society where computer algorithms were informing decisions, the increased prevalence in the disabled community whose interests may be excluded, could not be ignored. With a lack of access and affordability, people with disabilities would feel left behind. Access to these tools was critical especially since it could enhance adaptability, especially as compared with able colleagues.

However, Mr Burgess also raised concerns as to how AI may perpetuate disparities amongst disabled communities and the issues of bias, ethics, data collection, privacy and the risk of marginalisation. Marginalisation has always been a reality for people with disabilities, be it regarding education, inaccessible physical infrastructure, discrimination, social ignorance and lack of empathy. AI could potentially break down these barriers. Hard questions were posed:

- Does AI technology in its present form, run the risk of increasing marginalisation for disabled communities?
- Who was monitoring this? Technologies companies were currently in the lead, so what was the role of governments? Many modern technologies were not designed with disabled communities in mind.

Mr Burgess concluded that AI mimicked a world view of normative behaviour, and its promise to integrate disabled communities into the normal, was in itself a discriminatory statement. This was a

human rights situation, and everyone deserved equal access and opportunities. Therefore, in a multistakeholder approach, values, ethics, human rights and affordability should be placed at the core of AI development. Legislative frameworks must be developed that would prevent the widening the inequity. A final question was posed: AI is the future, but for whom?

Pia-Milan Green

Artificial Intelligence, Health and Law: A snapshot of Emerging Legal Issues [125]

Covid-19 pandemic has accelerated the integration of AI technologies in the healthcare industry, as can be seen for example, in remote medical consultations, patient management, resource allocation, image analyses and robotic surgery, etc. Pia-Milan Green noted that although these AI-mediated interventions were both necessary and helpful, they also brought along with them several legal issues. These included:

- Physician liability in the digital age (informed consent liability), which was closely related to medical malpractice. What were the implications on physicians' standard of care and duty, and to what extent did the physician's responsibility extend to AI system recommendations, analyses and assessments (i.e. did the role of a physician conflate with that of a 'big data scientist'?). What would a physician need to do to reject the allure of technological dependency?
- Privacy issues and big data liability, especially insofar it extended to medical and personal data of patients and their health information. Healthcare custodians must de-identify patients' information. Unfortunately, AI technology could re-identify data by making correlations between different data sets (data collected from health trackers, internet searchers, third-party services providers, etc.)

Ms Green concluded that liability in healthcare would be influenced by the Explainability, transparency and predictability of AI systems. Thus, ethical principles must be applied to the design, implementation and use of AI to mitigate harm to patients.

Mukund Trivedi

Amalgamation of AI and Design and its application in the fields of healthcare and natural resources [126]

Mukund Trivedi asked, “What does design mean to me?” Understanding a problem and working towards a solution, was much like the clay that needs to be chiselled which leads to the design. But, the process of designing would have to be simplified. When an idea was simplified, it was accompanied by the evolution of human intellect. The gist of the design was when it was in its simplest form, devoid of all its complexities. Thus, he stated that it was necessary to focus on thought and emotion, instead of technicalities.

Mr Trivedi said that man must utilise tools to reach this stage of simplicity, such as vacuum cleaners. We were harnessing AI to achieve simplicity. AI could give the independence that people with disabilities may require. AI that utilised lip-reading could help people with hearing impairments. There was a huge amount of benefit in AI which was not yet being accessed to its full potential by people with disabilities, but as these technologies continued to be developed, many would be able to reach their potential. He held therefore that design was the interface and AI the tool to amalgamate the problem with the solution.

He concluded that water was at the core of human society and was critical for socio-economic development. Hence, where there was water, there was literacy. According to WHO, 1 out of 3 people did not have access to drinkable water, and more than half of the world did not have access to sanitisation systems. AI could estimate the contamination in water to improve the efficiency of treatment plants. Thus, AI and design could streamline the usage of water in agriculture, as well as water meters to monitor wastage in suburban areas.

Ufulu Martha-Junior Chisale

AI and ICTs in a developing nation [127]

Ufulu Martha-Junior Chisale's presentation was pertaining to telecommunications. She defined telecommunications as the study of interacting or communicating over a distance through the means of data, telephone, social media and or radio. Over the years the way communication is transmitted from one person to the next has changed. Having a strongly established regulatory framework in a country promotes economic growth and alleviates poverty. Connected to such telecommunications networks and frameworks, access is also central.

She established that in general, access to technology and telecommunications, both grant opportunities. Hence, it is essential to implement policies that look at the inclusion of all people and eliminate barriers such as the digital divide. This can be achieved by making available and accessible, opportunities to communicate, especially via the internet. With this increased networked mobility through ICTs, new opportunities have been created, albeit socially, personally, or professionally.

With these advantages also come challenges. The public and private sector organisations are confronted with ongoing pressures to streamline activities, nurture innovation, advance efficiency and achieve demanding organisational objectives through effective communication.

It was noted that Artificial Intelligence also plays a role in the effectiveness of ICTs and the ability of a country to deliver services to its citizens. We can see how AI has the potential to reduce labour and transactional costs. In addition, it increases productivity and information flow in the economies of resource-constrained developing countries. This can be seen for example in the manner it helps to overcome logistical bottlenecks and corruption in supply-chain management and administrative processes about – for example in South Africa – pension payments, grant payments, and even Covid-19 vaccinations. By utilising ICTs effectively, a state assists with creating environments for further development across all sectors of society.

In way of concluding, she quoted Ndidi Okonkwo Nwuneli: “For there to be effective change, let us disrupt and redesign”. In essence, for there to be an effective sustainable change, we need to disrupt current processes and how things are done and redesign a new way of achieving our goals.

Daricia Wilkinson

Pushing Forward: An Integrated Human-centered Approach to Online Safety [128]

Billions of people worldwide are connected to social media, with most of our lives migrating to online spaces. Together with this, we are exposed to risks, such as privacy and harassment. Many of this online harm can spill into physical spaces. Consequences for individuals include self-censorship and the withdrawal from online communities where people’s behaviour is influenced. In her presentation, Daricia Wilkinson posed the question “What does it mean to be safe?”.

She defined Safety to consist of the following elements, namely:

- Privacy
- Security

- Wellbeing

She noted that safety concerns in the Caribbean were expanded based on the above-mentioned elements to conduct a study in which 551 individuals participated to gauge their experiences of threats in some form or another. An alarming rate of people reported that they had experienced victimisation of some sort:

- Privacy – 43%
- Harassment – 35%
- Online-to-Offline – 32% (this included discrimination and online/real-life stalking)
- Security – 30%

With reference to the study, she concluded that interestingly, the majority of people reported threats via online advertisements (325 out of 551) and that people had not experienced only one type of harm, but multiple ones.

She recommended a Road to Safety which consisted of:

- Equitable design
- New approaches to Justice
- Offline protections

How could the harm be detected by using automated approaches? These processes included:

- Machine learning and Natural Language Processing 9NLP)
- Detecting “Intentional Annoyance”
- Use contextual and semantic information for the detection
- API for Machine learning to assign toxicity score

Ms Wilkinson held that unfortunately, the above had some limitations, such as how it could be easily outmanoeuvred by slight modifications, the requirement of users to flag content, unfair applications or usage of the process and the lack of understanding or consideration of social nuances. Diversity was a core requirement, not only of experience but also of cultural and socio-economic circumstances.

These enabled the holistic understanding of how tools were affected by cultural values and social nuances and the integration of traditional experience.

Contextual awareness was one of the recommendations to attend to these concerns. It encouraged awareness and consideration of individuals' attitudes, culture and resources for the development and exploration of resolutions. The scope of justice could also be expanded, such as including communities and marginalised societies that were usually not considered in the design, use and implementation of ICTs. Implementing such safeguards would ensure inclusivity, freedom of expression, transparency, and the provision of autonomy in dismissing threats. People should know their rights!

Ms Wilkinson recommended that people (users, academics and practitioners), should understand online misbehaviours, know which safety tools were at hand to mitigate such misbehaviours and work collaboratively to design local, regional, and global guidelines and policies.

References

[123] https://youtu.be/XZPwfK2Of9Y

[124] https://youtu.be/l1wbK53ZgZQ

[125] https://youtu.be/XI8PGq--jT8

[126] https://youtu.be/_rvoPDheG1Y

[127] https://youtu.be/DrVr0BQtcmI

[128] https://youtu.be/DKRAYQEDZ08

[122] https://youtube.com/playlist?list=PLTULETeBko5GmQFKL2wqRydmFiojd_dOl

[122] https://youtube.com/playlist?list=PLTULETeBko5GmQFKL2wqRydmFiojd_dOl

15. Accessibility Pavilion

15.1. Introduction

The pavilion took place in the main conference hall, during which all participants were invited to attend and engage with the two presenters. Colton Bishop demonstrated the Google Camswitch and Monica Desai delivered a Meta Accessibility Demonstration. During these demonstrations, and subsequently, in the Question-and-Answer session, Mr Andries van Niekerk provided real-life sign language interpretation.

15.2. Overview

Colton Bishop

Google Camswitch Demonstration [130]

When trying to drive accessibility innovation, there are needs and gaps of different user groups. How to better understand these groups and address their needs are central to any process of innovation that will drive accessibility. The cam-switches are an exciting project which has been in development for over 1.5 years. There are 50 people on the team that worked on this project 20% were volunteers, so much of the project was informed and inspired by volunteers.

Apart from the Camswitch, there are other improvements made to existing technologies, such as switch access, more support for users with impairments, such as arthritis, issues with repeated touch

or painful touch, touch, switch access and voice, etc., in an attempt to reach moderately impaired people. In terms of privacy, Google Camswitch is working with accessibility services, for we assume everyone using these services has disabilities, so there is a lot more sensitivity for their privacy, health data and physical data (like following a face for facial expression recognition). The gestures are used in the moment but then discarded immediately after.

Digital literacy initiatives are promoted by Google Camswitch as well. There has been a push to make sure the entire writing and configurations of all apps are more readable, technical, etc, feature sensitivity customisation: bigger and smaller gestures to make it more intuitive and more understandable, such that anyone can use it. There are also incentives to support conferences and attend as many as possible to understand what the standards are. With the latest updates of Switch accessibility on Google, it will be available for download on every Android phone and most devices and versions. On new Android devices, Camswitch will come preinstalled on all phones across the board going forward on almost all android devices.

Monica Desai

Meta Accessibility Demonstration [131]

Meta is investing much in improving accessibility. Towards achieving this they seek to get constant feedback and then invest significantly to improve on gaps. There are multiple rounds of testing the prototypes which help in getting sentiment from users based on their experiences. In addition, Meta treats privacy as a core consideration throughout all its projects.

The AR/VR capabilities of Meta are intriguing, especially because they are producing Oculus at Meta. This extended reality – AR, VR Mixed Reality – is a new and emerging technology, that is always evolving. Meta is trying to work best to provide inclusive experiences because many technologies that are needed do not exist yet. Therefore, Meta tries to work with the disability communities, together with collaborating in partnership with developers to address the needs of people with disabilities. For example, having industry best practices for XR to help guide developers to create more accessible VR apps such as the June release of Oculus v30, which will make this technology a better experience for everyone.

Meta is also seeing lots of opportunities for the development of technologies. Historical research shows how the experience can be opened to wider audiences, and how AR/VR technologies are being leveraged. Priorities continue to be engaging with the perspectives of communities around the globe

and these include improving and providing services, to give access to markets and information for people with disabilities.

It is extremely important to engage in regulatory and policy environments with academics, policymakers, and other sectors of society. Meta learns from groups representing those with disabilities, to prioritize how to make product improvements. Participating in this work is useful, especially to understand and exchange information related to technology and regulatory trends.

Meta also co-founded and is still active in Teach Access, a multistakeholder initiative to work in higher education to support students before going into tertiary education. Teach Access has won multiple awards and has grown to 400+ organizations. Teach Access and Meta are working with other companies to drive legislation in the broader ecosystem, such as the WWW consortium, to collaborate to improve accessibility standards, keep the dialogue going and ultimately expand Teach Access more actively in other parts of the globe.

Together with Teach Access, there are also digital literacy programs to help empower people by teaching them how and why to use the internet. Meta has developed a digital citizen program - Get Digital – which teaches a range of basic to advanced skills such as online safety skills to lesson plans that teachers can use. Meta also partners with many different telco operators on digital literacy programs for consumers.

It is widely understood that indigenous and other groups that tend to live in more rural locations, without strong broadband, will not be able to access many new technologies and features that will allow for improved accessibility. Meta argues that having broadband access is foundational to opening up a range of new accessible technologies and features. Meta has been collaborating with partners across the globe, to bring broadband access and new business models to unserved and underserved places. In conclusion, we should all engage with government regulators on this to improve connectivity.

References

[129] https://www.youtube.com/watch?v=pKjROs35Xe4

[130] https://youtu.be/iuNzi9HZGWk

[131] https://youtu.be/wFL2l6tjt7M

16. Conference Organisers

WE WISH TO ACKNOWLEDGE AND THANK ALL THE MEMBERS OF THE ORGANISING COMMITTEE

SAMRIDHI ARORA

Member of the UNESCO IFAP Working Group on Information Accessibility

CORDEL GREEN

Chairman of the UNESCO IFAP Working Group on Information Accessibility
Broadcasting Commission of Jamaica

GEOFFREY ROCKWELL

University of Alberta, AI4Society and Kule Institute for Advanced Study
International Centre for Information Ethics

NICOLÁS ARNÁEZ

University of Alberta and AI4Society

ERICA SIMMONS

Member of the UNESCO IFAP Working Group on Information Accessibility

SONIYA MUKHEDKAR

Member of the UNESCO IFAP Working Group on Information Accessibility

ERIN KLAZAR

Member of the UNESCO IFAP Working Group on Information Accessibility
Future Africa at University of Pretoria, International Centre for Information Ethics

TRISHA RAY

Member of the UNESCO IFAP Working Group on Information Accessibility
Centre for New Economic Diplomacy (CNED) in ORF

SHASHIDAR KJ

Centre for New Economic Diplomacy (CNED) in ORF

17. Conference Volunteers

WE WISH TO ACKNOWLEDGE AND THANK ALL THE VOLUNTEERS WHO OFFERED THEIR TIME TO THE EVENT

MARIA DOLORES SOUZA
UNESCO IFAP Working Group on Information Accessibility
Chile

RACHEL FISCHER
UNESCO IFAP Working Group on Information Accessibility
South Africa

AARUSHI GUPTA
India

ASHLEIGH STAMPP
Jamaica

CHARLES KAJOLOWEKA
Zimbabwe

DANA CRAMER
Canada

GRACE ANGKASA
Canada

ENESS PAIDAMOYO MUTSVANGWA-SAMMIE
South Africa

HITENDRA BORADE
India

ISHITA RAJGRIHAR
India

JANVI MOONDHRA
India

JESS RING
Canada

JULIANA TRAPOLINA
Canada

KJAI FRANCIS
Jamaica

NANCY MARANGU
Kenya

NICOLE DEDIER
Canada

OZIOMA ROSELINE UMERA
South Africa

POOJA KRISHNA
India

BHATIA PRANAVI
India

RIDDHI KOTHAWALE
India

ROXANNE ANDERSON
Jamaica

SASHA HARRISON
Jamaica

SHANTAM GUPTA
India

SHEDEL KHOURI
Jamaica

SONIA SHARMA
India (Sign Interpreter)

TEDSON NKOANA
South Africa

THOBEKILE MATIMBE
Zimbabwe

WEGAYEHU FITAWEK
South Africa

YANIQUE ANDERSON
Jamaica