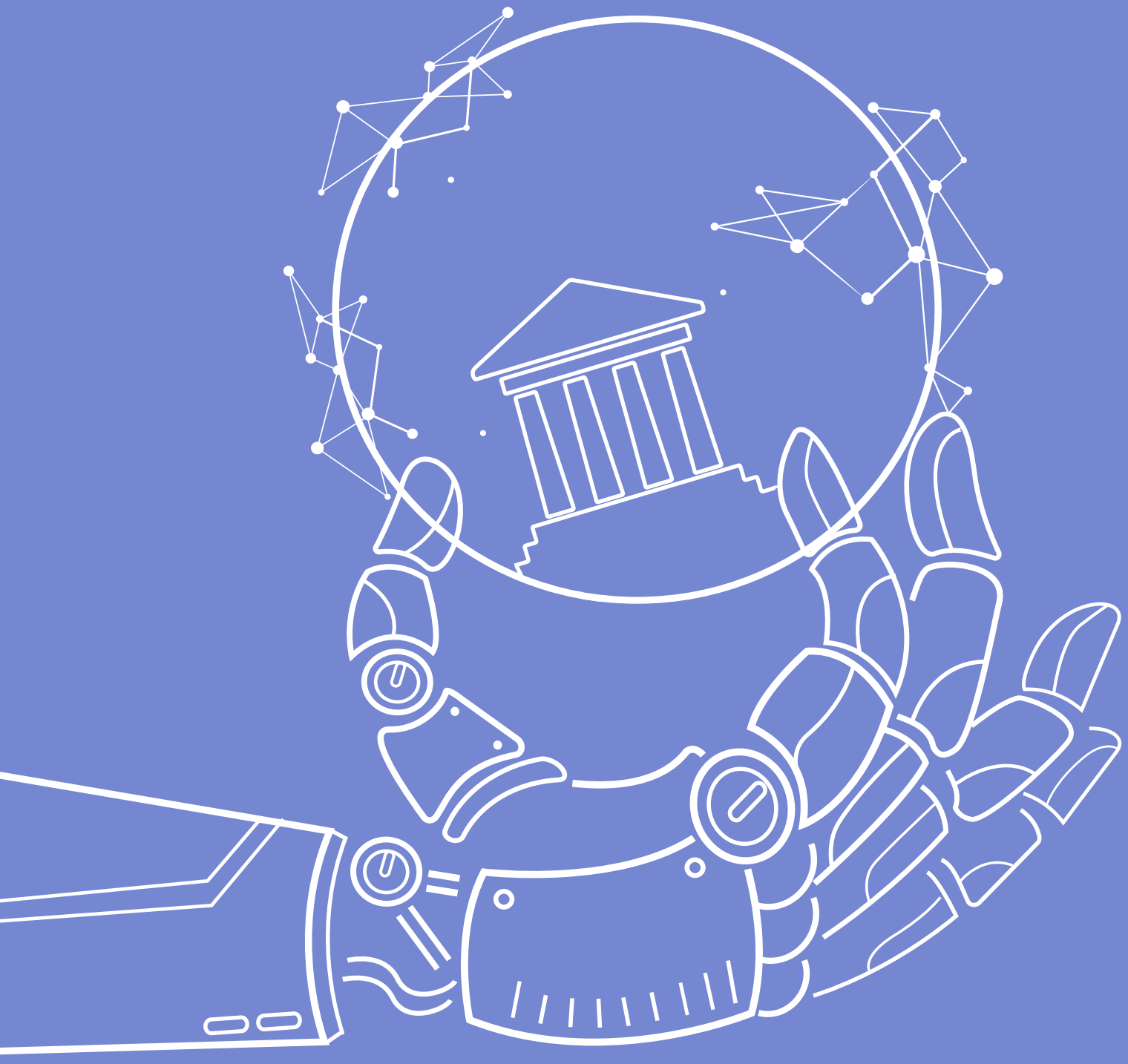
Artificial Intelligence in India - Vol. 2



The Wicked Problem of AI Governance

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FRIEDRICH EBERT STIFTUNG

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IT for Change

Preface

"After all, we make ourselves according to the ideas we have of our possibilities."
V.S. Naipaul

There is no doubt that the technological advancement has become the game changer of our times. From the Industry 4.0 discourse launched in Germany in 2011 to the scientific advisory report presented to the former US president Barrack Obama on big data and privacy concerns in 2014, to India's NITI Aayog Artificial Intelligence for All strategy of 2018. A lot of debates have culminated in the questions about the Future of Work in the context of the International Labour Organisation's Centenary in 2019. Triggered by the disruptive forces of technology based start-ups and new business models, a new race for innovations and war for talents has arisen and with it, a new form of global and fierce competition.

Technology has become the holy grail of progress though it did not take long to realise that there is a social dimension attached to it. The platform economy has had severe effects on the bargaining power of suppliers and workers. Data analytics opened a whole array of ethical questions regarding personal tracking and privacy. Further, technological upgrades create productivity gains by efficiency which in turn requires reduced human labour. This poses a particular threat to emerging economies, like India, which need to create new jobs on massive scale for its young and growing population.

The utopia around Artificial Intelligence in the times of jobless growth presents a whole new set of challenges. Is the Indian economy ready to ride the AI wave? Who will benefit from AI: investors, big tech, users, or society as a whole? What is and can be India's role in this global race for innovation? Is tech gender neutral? What about privacy and user protection? How to ensure decent work and social protection in this new age tech revolution? But mostly, how can we turn AI FOR ALL into a reality?

To foster this debate, the FES India Office has teamed up with several experts and organisations across the country to explore ground realities with the objective to understand how technology is already unfolding in selected sectors, draft scenarios of what might happen and to ensure proper safeguards are put in place at the right time.

Artificial Intelligence like any other technology is neither good nor bad. It is what we make out of it - the rules and regulations – which define the outcome of the game. Just like other countries, in India too, a mass scale application of AI is far from being established. It is still in a nascent phase and can be moulded into a success story. A success story in India AND Indian success story for all.

Patrick Ruether and Mandvi Kulshreshtha
October 2019
Friedrich-Ebert-Stiftung, New Delhi

Note of thanks

Friedrich-Ebert-Stiftung (FES) India office is thankful to its partner IT for Change (ITfC) for preparing this research paper. IT for Change aims for a society in which digital technologies contribute to human rights, social justice and equity. ITfC is preparing a series of research papers for FES tracing AI's enigma in sectors such as agriculture, ports, education and fintech.

We are grateful to our colleagues at ITfC for preparing the research, drafting this paper and refining the manuscript to reflect our joint vision. We have to express our appreciation to the Editorial team at ITfC, for their constructive contribution and valuable time during the course of this research.

Contents

List of abbreviations

AI	Artificial Intelligence
BRI	Belt and Road Initiative
CIA	Central Intelligence Agency
EU	European Union
FDI	Foreign Direct Investment
FRAND	Fair, Reasonable and Non-Discriminatory Access
IP	Intellectual Property
ITU	International Telecommunication Union
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
IEEE	Institute of Electrical and Electronics Engineers
ILO	International Labour Organisation
IoT	Internet of things
OECD	Organisation for Economic Co-operation and Development
SDGs	Sustainable Development Goals
TRIMs	Agreement on Trade Related nvestment Measures
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States (of America)

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1. Introduction

Heralded as the harbinger of transformative change, Artificial Intelligence (AI) is at the epicentre of contemporary development discussions. By 2030, AI is expected to contribute an additional 13–15 trillion US dollars to global economic activity, making it as game changing as the steam engine in the 19th century.[1] The promise that AI holds for enhancing agricultural productivity, efficiency in welfare delivery, cost-effectiveness in public health and sustainable urbanisation has also been noted.[2] A sense of immediacy about seizing the AI opportunity has percolated to governments and multilateral institutions. In a brief period of two years, between 2016 and 2018, over 20 countries established committees/task forces for creating national roadmaps to reap the economic and social dividends of AI.[3] During the 2018 'AI for Global Good' Summit, the International Telecommunication Union (ITU) and 32 other UN agencies solidified their partnership for scaling up innovative AI-enabled solutions to advance the Sustainable Development Goals (SDGs).[4]

At the same time, there is increasing recognition that these socially beneficial outcomes of the AI revolution can be harnessed only if backed by an appropriate governance framework.[5] Advances in AI present human civilisation with challenges that are unprecedented. As a class of technologies[6] that simulate human intelligence processes for learning, reasoning and self-correction, AI disrupts the way societies define, organise and use knowledge. Recent strides in artificial neural networks—computing systems inspired by and modelled on biological neural networks—redefine the field of machine learning. They bring the capability to both model and process non-linear relationships between inputs and outputs in parallel and become the de facto brain power providing direction when put into social and economic activities.

The widespread use of AI as a solution to economic and social problems is therefore as terrifying as it is exciting. The search is on for the right combination of legal-regulatory, ethical and technological approaches that constitute effective AI governance.

Understanding and deconstructing AI systems that are self-learning and self-correcting is not easy. In fact, experts in the field have even stated that it is impossible. The widespread use of AI as a solution to economic and social problems is therefore as terrifying as it is exciting—something that Bill Gates has compared to the complexity of nuclear technology. Quite naturally, a vibrant debate on the governance of AI has been gathering momentum, involving governments, multilateral institutions, technology companies, the technical community and global civil society. The search is on for the right combination of legal-regulatory, ethical and technological approaches that constitute effective AI governance.

What this paper argues is that in the neoliberal economic paradigm, AI technologies reinforce and are constituted by an economic logic based on profit maximisation. That is, AI as an essential ingredient of global economic power is co-opted into the exploitative structures of neoliberal capitalism. It is a key driver of the emerging platform-based economic order that intensifies an already unequal and unfair international development context. Surprisingly though, this facet of AI is hardly alluded to in the debates on AI governance, which, while taking note of rights-based violations—discrimination and inequality in particular—and uncertain futures of work, propose liberalist, structural interventions (focusing on correcting misrecognition but not maldistribution) at best and neoliberal, individualistic fixes (that transfer burdens of navigating the digital economy on individuals) at worst. The political economic dimensions of the AI paradigm and implications of AI for the structures of choice, or in Senian terms, "equality of autonomy",[7] is left untouched in such framings. Current analysis therefore misses the point about how relations of power at various levels are being recast in the AI-based global economy.

In the neoliberal economic paradigm, AI as an essential ingredient of global economic power is co-opted into the exploitative structures of neoliberal capitalism. It is a key driver of the emerging platform-based economic order that intensifies an already unequal and unfair international development context.

2. The mainstream debates on AI governance

This section traces the core debates on AI governance in four key domains: human rights, the future of work, democracy and international peace and security. It points to the highlights as well as omissions and contradictions underlining the skewed and partial articulations of AI governance in mainstream policy thinking.

2.1 AI and human rights

There is a growing acknowledgement of how AI systems could undermine human rights. A systematic mapping of the over 32 sets of influential AI principles/guidelines in existence today by the Cyber Harvard project reveals that informational privacy, equality, fairness and freedom from discrimination are critical concerns shared by all stakeholders involved in the development and deployment of AI technologies: governments, multilateral organisations, advocacy groups and technology companies.[8] The inscrutability of AI means that the subjectivity of their creators can reinforce the very biases that create an unequal society, leading to a due process failure. Inherent biases in input/training data sets as well as in definitions of output parameters produce unfair outcomes.

Studies (mainly from the global North) reveal how algorithmic bias[9] in recidivism scoring and facial recognition systems used by law enforcement authorities disproportionately penalise racial minorities and immigrant communities.[10] Automated decision-making to determine welfare eligibility has been found to be fashioning a new-age digital poorhouse, through the use of non-transparent, disproportionately intrusive, predictive analytics models for a new performative politics of poverty management that undermines the citizen rights of impoverished groups.[11] There is also mounting proof of AI systems leading to unfair discrimination in the workplace and in the market. The use of AI systems in hiring, promotion and productivity monitoring has been observed to normalise and reinforce the gender and racial prejudices that colour processes of human resource management rather than overcoming them, also facilitating disproportionate and unaccountable dataveillance by employers.[12] In markets for housing, insurance and credit services, many cases have been recorded of algorithmic profiling leading to unfair exclusion of individuals and groups from these services on the basis of identity markers, including characteristics protected by anti-discrimination laws.[13]

In the global South, where AI adoption is at a nascent stage, public debate around AI is still under-developed. Only 40 percent of countries in Asia and Africa have put in place privacy and data protection laws[14] that become the essential starting point for efforts to address discriminatory algorithmic profiling.

A fledgling debate is also taking shape about the risks posed by the use of AI systems in humanitarian and international development. The spotlight has been on institutional safeguards in these projects—many of which are structured as public private partnerships—for preventing function creep and discriminatory profiling that violates individual and group rights.[15] For instance, data rights activists have protested the lack of transparency in the proposed collaboration between the UN World Food Programme and Palantir, a Central Intelligence Agency (CIA)-linked tech firm, for building an AI analytics system to enhance efficiencies in the management of the agency's food aid logistics chains. Activists have demanded transparency in the data sharing agreement and mechanisms for public scrutiny and audit.[16]

Against this backdrop, multilateral and plurilateral bodies are exploring, with a sense of evident urgency, how AI development, deployment and use can be situated in relation to human rights and international cooperation. The report of the UN Special Rapporteur on the right to freedom of opinion and expression[17] underscores the necessity of a new global legal framework clarifying the specific obligations of states and responsibilities of companies with respect to ensuring reinforcement of, and respect for, human rights as the "power, reach and scope of AI technology grows". The recommendation on AI issued by the Organisation for Economic Co-operation and Development (OECD) Council in May 2019 highlights the need for national policy frameworks and international cooperation to further "inclusive growth,

sustainable development and well-being" in the AI-led transformation of economy and society.[18]

As far as governmental responses are concerned, the European Union (EU) has publicly declared its aspiration to provide global leadership to a new human rights-centred approach to AI. The provisions of the EU General Data Protection Regulation (GDPR) account for discriminatory profiling by providing citizens redress for unfair consequences of AI-driven decision-making.[19] The 'Ethics Guidelines for Trustworthy Artificial Intelligence', recently issued by the European Commission's Independent High Level Expert Group on AI, underscore the importance of human oversight and accountability mechanisms in guaranteeing the principles of non-discrimination and fairness in AI systems.[20]

Industry-led self-regulation (through the establishment of ethics boards, adoption of AI ethics charters and support for research in algorithmic fairness) has not yielded dividends in protecting, promoting and respecting human rights in AI systems. The rhetoric of 'ethical AI', it has been pointed out, often ends up as a publicity stunt rather than as a meaningful intervention for accountability in AI systems.[21] For instance, after the Project Maven controversy,[22] Google adopted a charter of AI principles, stating its commitment to refrain from building technologies whose purpose contravenes human rights. But despite this, Google went on to initiate Project Dragonfly, a web search app for the Chinese market that complies with government rules for extensive web filtering and blacklisting of certain user queries.[23]

The 'Ethics Guidelines for Trustworthy Artificial Intelligence', recently issued by the European Commission's Independent High-Level Expert Group on AI, underscore the importance of human oversight and accountability mechanisms in guaranteeing the principles of non-discrimination and fairness in AI systems.

Similarly, Microsoft has made public declarations about how it has abstained from pursuing certain revenue streams because of advisories from its ethics oversight board. But these claims remain unverifiable, as no details have ever been made public about the areas of AI deployment that received a veto.[24]

Even in the United States, where the public discourse on technology policy has been dominated by technolibertarianism, there are calls increasingly for legal oversight of AI to fix the deficits in industry-led, self-regulation. In fact, in December 2018, the AI Now Institute, an interdisciplinary research organisation founded by two technology researchers from Google and Microsoft, called for the introduction of sector-specific state regulation to oversee, audit and monitor AI technologies by domain.[25] How far the tide has turned on this issue can be assessed from a single development: the introduction in April 2019 of a bill on algorithmic accountability in the US senate that seeks to allow the Federal Trade Commission to inspect whether corporations are using algorithms that are biased, discriminatory and insecure.[26]

There is also an emerging consensus around the pivotal role of technical standards-setting efforts in enforcing a human rights-centric governance framework for AI systems. Standards are needed to eliminate inaccuracy, incompleteness and non-representativity of data-sets deployed in machine learning algorithms and intended/unintended bias in the definition of output parameters that are responsible for unfair and discriminatory decision outcomes.[27] In fact, the Institute of Electrical and Electronics Engineers (IEEE) is currently working on the development of a certified technical standard to eliminate such algorithmic bias.[28]

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Silences on collective autonomy and choice

In the criticisms about ethics-washing of AI related bias and discrimination, several proposals for greater transparency about, and righting representational wrongs in, data and AI have been put forth. However, these calls for 'accountable AI' fail to account for how

AI-led economic transformation foundationally alters the opportunity structure for, and thus the social choices available to, certain groups and communities.

In the AI-led economy, algorithmic intelligence extracted from data resources is the 'secret sauce'[29] that enables the disruption of the economic status quo and the attainment of new levels of efficiency. Currently, such 'intelligence capital' is concentrated in the hands of a few transnational corporations. These behemoths have enclosed valuable data resources in order to cement their market dominance by foreclosing the possibility of competing AI innovations emerging in the future. This includes new-age platform companies whose business model is predicated on the deployment of data and digital intelligence to orchestrate economic and social interactions in the networked ecosystems they control (for example, Amazon, Alibaba and Uber) as well as traditionally dominant corporations that are attempting to upgrade their business strategies for the data economy (such as the agro-giants Bayer and ChemChina entering the 'big data in agriculture' sector).

Existing data protection frameworks deal with this issue in a narrow band way through privacy and consent safeguards to delimit personal data mining. They completely sidestep the fact that intelligence generated from non-personal data not always traceable to a specific individual [Internet of Things (IoT) based data sets on climate and soil, for example], can also lead to economic exploitation, undercutting the strategic life choices of individuals and communities. Access to soil, agro-climatic and agro-input data through sensors, drones or cameras allows big agricultural corporations to game agro-input markets in ways that erode the livelihood autonomy of small farmers. [30] Similarly, in a smart city initiative being developed through private partnerships involving big tech, complex AI systems based on mining of data on energy consumption, water use and transport as well as micro-surveillance through home based IoT devices can easily encroach upon the functions of local government and upstage the collective right of the people in the city to participation and self-determination.

Institutional mechanisms to address bias in AI are indeed necessary to tackle inequality and discrimination. However, they misframe human rights violations through AI, reducing them solely to issues of representation and recognition. While institutional remedies to misrecognition are key, they may not provide redress to individuals and communities caught in relationships of exploitation that are based on uneven and unfair distribution of intelligence capital. Such an approach is structural-liberalist;[31] that is, it is an institutional intervention that addresses the reality of social discrimination. However, it disregards the ever-present inequality in opportunity structures. Framings about equality and non-discrimination in relation to AI therefore need to be attentive to "equality of autonomy"[32], that is, an across-society spread of the ability and means of people to choose their life course. A holistic response to inequality from AI would therefore need safeguards against AI-based economic exploitation through new conceptions about AI governance that expand individual and collective choices.

Intelligence generated from non-personal data not always traceable to a specific individual can also lead to economic exploitation, undercutting the strategic life choices of individuals and communities. Access to soil, agro-climatic and agro-input data through sensors, drones or cameras allows big agricultural corporations to game agro-input markets in ways that erode the livelihood autonomy of small farmers.

2.2 AI and the future of work

The policy spotlight has also turned to the impacts of the AI paradigm on jobs and labour futures. Evidence suggests that just like in preceding waves of technological innovation, the adoption of AI systems will lead to en masse labour substitution, resulting in the redistribution of productivity gains from labour to capital.[33] It is estimated that over 40 per cent of the global workforce will lose their jobs to AI-led economic disruption in the next 15–25 years.[34] A limited number of new high-paying jobs will open up in this new economy for individuals with advanced skills. But the economic fate of the majority will be low-paid, personalised service work with depressed wages.[35] This challenge will be especially acute in the global South. As the comparative advantage of labour is eroded in developing countries due to rising wages, AI diffusion is expected to trigger a re-shoring trend in certain sectors, where factories are relocated to first

world locations that offer more infrastructural support for deployment of AI systems.[36] Consequently, over two-thirds of the workforce in these contexts is likely to lose jobs.[37]

Reclaiming gainful employment for everyone seems to be an increasingly unattainable strategy in this scenario, even with investment in system-wide reskillment programmes for displaced workers. Understandably, this realisation has led to a rebooted attention to social protection.[38] Many proposals have been put forward, including state subsidisation of socially beneficial activities, in order to create meaningful work in the overall context of dwindling jobs, universal basic income, etc.[39] There are concerns about how re-distributive strategies may not be easy to come by for all countries. National strategies for redistribution of the productivity gains from AI to the masses of displaced workers may work in advanced economies which have sufficient AI businesses that can be taxed to support social protection schemes.[40] But countries of the global South face a double whammy. On the one hand, they lack the infrastructure, skilled workforce and institutional support mechanisms to effectively seize the AI opportunity for economic growth. Of the over 15 trillion US dollars that is expected to be added to the global economy by 2030 due to the AI revolution, their share is projected to be a lowly 11 per cent.[41] On the other hand, the low-skilled job opportunities that are currently available to their populations will shrink as AI restructures the terms of their integration in global production networks.

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The missing debate on economic self-determination

In the race towards the fourth industrial revolution, an ideology of AI-frontierism is widely evidenced in policy circles. Not wanting to be left behind, developing country governments are caught up in the language of 'innovation' and 'entrepreneurship', authoring national plans and road maps for their digital start-up ecosystem and upskilling of workers. These efforts view AI-led development as a simplistic aggregate of individual efficiencies that will somehow magically add up to national productivity gains. They completely ignore the fact that development is a "competitive and global undertaking", characterised by a sustained and continuing effort to capture opportunities for higher value knowledge and technological capabilities.[42] In the current context, strides in development are possible only for countries that can harness AI at a socio-structural level for higher growth and redistributive gains.

Not wanting to be left behind, developing country governments are caught up in the language of 'innovation' and 'entrepreneurship', authoring national plans and road maps for their digital start-up ecosystem and upskilling of workers. These efforts view AI-led development as a simplistic aggregate of individual efficiencies that will somehow magically add up to national productivity gains.

Developing countries urgently need to use AI to create and/or deepen national capacity for moving out of low value locations in the global value chain. However, the debate so far[43] seems to flatten the global political economy of development with broad brush stroke, and even glib, prescriptions exhorting countries of the South to build their domestic AI capabilities and upskill their populations. How can this prescription be met if access to and ownership of data and digital intelligence is denied?

The AI-led global order is entrenched firmly in what activists and scholars have argued is a form of neocolonisation.[44] Today, economic power is a function of how AI technologies are employed in networked systems organised around incessant data processing. As data started flowing on a planetary scale with the advent of the internet, creating and multiplying social and economic connections, predatory capitalism found a new lease of life. The value of the global network of connections has since grown exponentially with the emergence of the platform model, the network-data infrastructures that mediate and organise production and exchange on a global scale. In the emerging global AI economy, competitive advantage is determined by the ability to reach higher levels of efficiency through what was explained earlier as the intelligence capital generated

by processing data.

Moving to the higher value segments of the global economy is, however, inordinately difficult in the current global economic order where corporations and countries who have enjoyed a first mover advantage in harvesting data for digital intelligence systematically reinforce their position of dominance. As the United Nations Conference on Trade and Development (UNCTAD) Trade and Development Report[45] cautions, the restructuring of global value chains by the platform business model has coincided with the appearance in global economic statistics of a "widening gap between a small number of big winners in global value chains and a large collection of participants, both smaller companies and workers, who are being squeezed".[46]

The US and its allies have also sought to use trade negotiations to assert their advantage and maintain the status quo on unrestricted cross-border data flows to protect US platform monopolies. Similarly, they have been stalling demands of developing countries for disclosure of source code/algorithms by transnational digital corporations, even though such technology transfer conditionalities for market access are currently permissible under the Agreement on Trade Related Investment Measures (TRIMs). Without the sovereign right to control the terms on which the data of their citizens/data generated in their territories flows across jurisdictions and/or build the digital intelligence capabilities to boost their economies, countries in the developing world cannot create the endogenous conditions for their citizens to reap the AI advantage. They will never be able to create the intelligence capital for reaching higher value knowledge capabilities. On the contrary, their vulnerabilities could potentially be accentuated, as the systematic flight of data from their territories for exogenous AI infrastructure models creates economic and political dependencies.

The terms of the debate hence need to shift away from individualist solutions to secure the future of the economy towards governance frameworks that invoke the economic right of nation states and communities to have sovereignty over data – which may be seen as "a new form of wealth"[47] – to self-determine their development pathways.

2.3 AI and the public sphere

In the media context, algorithms used for targeting and personalisation of content make it near-impossible to distinguish between fact, opinion, legitimate political advertising and fake news. New advancements in AI, such as social bots and human image synthesis techniques that support the creation of 'deep fakes', have exacerbated this threat.

Governments around the world have tried to tackle the fall-outs of algorithmic gaming on the health of the democratic public sphere. Even the United States, traditionally a proponent of light touch regulation in the online communication sphere, changed tack after the Cambridge Analytica scandal. In the wake of mounting concern about Russia's alleged social media meddling to influence the course of the 2016 Presidential Elections, a bipartisan bill was introduced in the US Senate to regulate online political advertising. This proposed piece of legislation, 'the Honest Ads Act', aims at forcing platform companies to maintain a scrutinisable record of their targeting strategies for online political advertising, including a description of the targeted audience, the number of views generated, the details of the sponsor and the rate paid. The bill intends to make public the modus operandi of algorithmic hyper-targeting. Further, the state of California in the US has enacted a law that attempts to provide a workable balance between the right of political campaigners to nudge voters through bots and the right of voters to transparency about information sources. The law requires bots to identify as such in their interaction with individual users.[48]

The European Commission has experimented with a self-regulatory approach, working with social media companies and online advertisers to adopt a 'Code of Practice on Online Disinformation', urging signatories to take a more active role in curbing fake news and malicious propaganda, use technological means to prioritise relevant and authentic information in automated dissemination and disclose general information about algorithms used.[49] The initiative seems to have met a roadblock with no measurable outcomes.[50] Though an effective pan-European response is missing, EU member states are at various stages to bring in national laws to address this issue.

The realpolitik behind algorithmic scrutiny

The early consensus on internet exceptionalism linked to free speech seems to be giving way to a realisation that a hyper-extractive algorithmic regime needs new norms that can hold platform intermediaries accountable. There is thus an increasing acknowledgement about the need for public scrutiny of the algorithmic tools used by platforms for content curation, user profiling and targeting.[51]

In the past one year, the European Union has been at the helm of this debate, with Members of the European Parliament calling for algorithmic audit of the profiling practices of Facebook in October 2018 and the establishment of an EU Committee of Ministers to deliberate on safeguards against algorithmic manipulation by platforms, including digital communication services.[52] While the EU—as a politically powerful and economically relevant bloc—may well be able to create the regulatory structures and enforce accountability mechanisms vis-a-vis transnational platform companies within its territory, most countries in the global South lack such clout and the institutional wherewithal for regulatory oversight. The US and its allies have also sought to protect the Intellectual Property (IP) interests of their digital corporations in trade related negotiations, insisting that no country can make market access contingent on source code/algorithmic disclosure.[53] Most developing countries hence face a Hobson's choice—they must give in to opaque and unilateral AI-enabled content governance policies and practices of transnational platform companies in order to have access to the essential communications infrastructure that they depend on the latter to provision.

These geo-economic and geo-political dynamics as well as the absence of a binding international framework on the obligations of transnational corporations renders the plausibility of effective regulatory intervention by developing countries moot. Ideas of self-regulation tend to gain currency, furthering a user-centred approach that depoliticises the problem, replacing democratic oversight with corporate largesse. Trade forums are also not the venue to make rules about data and algorithms.

A two-pronged response is necessary to prevent the degeneration of the digitally-mediated public sphere.

Firstly, the deleterious consequences of AI-gone-wrong for democracy cannot be tackled without a right for all countries to scrutinise the algorithmic apparatus shaping social interactions in their territory. The binding international treaty on business and human rights is a highly pertinent instrument through which corporate violations that undercut democracy and human rights can be addressed by governments.

Additionally, the health of public spheres in digital times hinges on a global agreement, a binding normative framework on data and AI that prescribes duties of states vis-a-vis national and global democracy. A reinterpretation of human rights obligations of state and non-state actors in the age of AI, therefore, is not optional; it is an urgent need. A global normative framework for data and AI must also address the issue of data extractivism, setting limits on individual profiling in the online communications sphere. A vibrant and pluralistic global democracy is predicated on how the internet can be reclaimed as a global communications commons, so that personal identity and social interactions are not commodified, marketised and manipulated within corporate data enclosures.

2.4 The Weaponisation of AI technologies

World over, the potential use of AI technologies in military systems and their destabilising impacts on international peace and security are being seen as worrying.[54] In early 2018, over 160 AI-related companies and organisations from 36 countries signed a pledge to "neither participate in nor support the development, manufacture, trade, or use of lethal autonomous weapons".[55] A year later, in March 2019, the UN Secretary General urged the Group of Governmental Experts examining issues related to the application of lethal autonomous weapon systems to issue a complete prohibition on these "politically unacceptable" and "morally repugnant" technologies.[56]

Another source of anxiety is the risk of seemingly innocuous AI tools developed for civil uses being co-opted for militaristic purposes by authoritarian regimes. For example, facial recognition and lip-reading technologies may also be used for clandestine surveillance, while algorithmic video creation tools for entertainment could be leveraged for information warfare.[57] The technical community has been vigilantly exerting pressure on Silicon

Valley companies to prevent them from using dual use AI applications to enter the business of war, the most well-known instance being the success of Google employees in halting Project Maven. On similar lines, AI academics and researchers issued an open letter to Amazon asking the company to desist from pursuing facial recognition tech projects for law enforcement authorities, in the absence of a comprehensive legislative framework to prevent misuse.[58]

Economic surveillance as a peace and security threat

In the AI-mediated world, it would be important go beyond the geo-political aspects of plausible AI-warfare, into the geo-economic realities that generate data colonies for neo-imperialist AI masters to exploit and control both economically and politically.

AI projects of the US and China in many countries of the developing world are dual use solutions—AI applications that have the potential for both civilian and militaristic use. In-Q-Tel, the CIA's venture capital fund for tech investments, has now extended its operations to the AI domain.[59] Its current portfolio focuses on start-ups working on image recognition, natural language processing and predictive analytics, widely noted in the literature as central to clandestine surveillance.

A new threat on the horizon has emerged in the form of China's flagship Belt and Road Initiative (BRI). In 54 countries that are home to 60 per cent of the world's population and contribute over 40 per cent of global Gross Domestic Product (GDP), this initiative is funding an extensive network of roads, railways, energy pipelines and telecommunications. AI surveillance technology from Chinese companies is also being packaged as part of this collaboration. For example, Huawei and ZTE are taking up smart city projects with built-in surveillance technology; Hikvision, Yitu and Sensetime are exporting facial recognition tech. With control over the vast data infrastructure erected through such projects, the Chinese state holds considerable sway over its BRI partners. As governments become increasingly dependent on Chinese technologies, they are likely to be compelled in the long term to align with China's agenda or risk political destabilisation.[60]

The debate on the AI arms race and lethal autonomous weapons cannot afford to ignore the risk of clandestine surveillance through AI tools and its extremely damaging consequences for global democracy and the political stability of economically weaker countries. Liberal frameworks in international relations presume that institutional rules for lethal AI weapons are the route to global peace. Even if bad AI is banned, unless the multilateral system aligns trade and investment rules with human rights standards for AI in development cooperation, geo-economic power that shapes geo-political hegemony cannot be tackled. The control that all countries must have over their critical AI infrastructure is of paramount consideration for enduring national sovereignty, security and progress.

Unless the multilateral system aligns trade and investment rules with human rights standards for AI in development cooperation, geo-economic power that shapes geo-political hegemony cannot be tackled. The control that all countries must have over their critical AI infrastructure is of paramount consideration for enduring national sovereignty, security and progress.

Table 1. Core debates on AI governance

Dimension of AI governance	Main strands	Silences
Human rights	Representational bias in data and algorithms Privacy and personal data protection Binding global legal framework to guarantee equality and non-discrimination in AI systems	Enclosure of data resources and intelligence capital by powerful companies that leads to erosion of autonomy of individuals and communities
Future of work	New social protection measures to cope with en masse labour substitution by intelligent automation Education and enskillment strategies to prepare the workforce for the restructured labour market	Right of communities and countries to the intelligence advantage that is essential for economic self-determination in the AI paradigm
Public sphere	Rejection of internet exceptionalism and adoption of new norms for algorithmic accountability	The need for a new international binding framework on data and AI that defines the duties of state and non-state actors to protect and promote pluralistic democracy in the automated public sphere No-go areas in personal data mining and individual profiling that undermine the global communications commons
Weaponisation of AI technologies	Prohibition of lethal autonomous weapons Lack of norms around the deployment of facial recognition tech	Clandestine economic surveillance through neo-imperialist control of critical AI infrastructure

3. Rethinking AI from a development standpoint

As AI becomes intrinsic to digitally networked society and economy, AI governance has logically expanded in its scope, straddling diverse concerns from human rights to future of work, democracy and international peace and security. This, as discussed so far, has seen paradigm shifts in the discourse and practice of law, ethics and techno-design, coalescing into pivotal national and global legal and policy debates. However, by conceiving of rights in relation to AI within a purely liberal framework, the debate on AI governance circumvents the question of how economic power is reconstituted in an AI-led economy.

The AI governance question can be effectively addressed only when the role of AI as the tour de force of structural transformation is understood and acknowledged. In the new AI economy, China and the United States are poised to emerge as "active global leaders" and reap maximum gains.[61] Major European countries have stepped up their policy efforts for data infrastructure and AI innovation. However, the majority of developing countries seem to be in dire straits. While it is true that their "AI development and policy capacities and resources are comparatively thin",[62] the primary deterrent for developing countries on their path to structural transformation, through AI, is the governance deficit in global rules on cross-border flows of data. The laissez faire regime of data extractivism has allowed transnational platform companies a free rein to enclose the data collected from developing countries and entrench themselves as the harbingers of digital innovation and development in the global South.

The digital intelligence route to capital accumulation puts richer countries with technological prowess on a better footing. In the new value ecosystems wrought by AI, these countries are well positioned to grow their relative advantage in the international development arena. On the contrary, the terms of inclusion for developing countries (with the exception of China) and less powerful actors in the global South—small farmers, indigenous populations, local traders—into the AI-led economy reflect an undermining, and even erosion, of decisional autonomy. Inequality in the current order arises, or is perpetuated, as a result of data imperialism—the control that algorithmic circuits of digital intelligence confer on the already powerful who own the data. The political economy of data ownership and control thus emerges as a decisive factor in deepening global development fault lines. When viewed from this standpoint, the contours of the AI debate shift significantly, surfacing the contestations about the structural re-organisation of society through digital intelligence, on which the governance spotlight must be cast.

AI governance approaches must therefore take into account the following considerations:

a. Data sovereignty for economic self-determination
Nation states have the "right and duty" enshrined in the UN Declaration on the Right to Development "to formulate appropriate national development policies". In a globalising world, this implies not only "efforts to promote and protect human rights", but also to "establish a new international economic order". The "national and international conditions favourable to the realisation of the right to development" as well as the "conditions favourable to the development of peoples and individuals" are but two sides of the development coin.[63]

In an AI-led global economic paradigm, conditions for the development of individuals and communities hinge on the sovereign right of nation states to the data collected from their citizens and within their national territories. Without this right, states cannot produce the national governance frameworks to catalyse digital intelligence solutions that advance the civil-political and economic-social rights of their citizens. However, as advanced AI nations push for an unrestricted data flows regime through trade negotiations, developing countries are hugely constrained. They are unable to adopt suitable policies for a sectorally differentiated data liberalisation approach that enables them to build their own intelligence advantage in the emerging digital economy.

b. A global human rights framework on data and AI
The current global order built on data and AI is not only exploitative, but also potentially harmful to the long

term interests of developing countries. Without access to the data to build their intelligence infrastructure, most countries will be perpetually locked into economic models that they have no autonomy over. The sovereign rights of nation states to the data about their citizens/collected within their territories hence needs to be articulated through a binding global normative framework on data and AI.

The starting point of a new international consensus in the form of a binding global normative framework on data needs to be a 'rule of origin framework' that recognises national sovereignty rights in data gathered within a country's jurisdiction (including about citizens). Norms about putting AI to the service of human rights and development justice must embrace the cutting edge wisdom about the inalienability, indivisibility and interdependence of human rights, with a futuristic outlook for the twenty-first century.

To fulfil their human rights obligations in the AI paradigm, states need to implement various measures, balancing multiple interests and priorities in the national context. A sophisticated governance framework for access, use and control of data is needed that effectively balances the rights of data principals with the rights of those investing in the resources that enable digital intelligence creation, the rights of affected individuals/communities and the broader public interest.[64]

c. Building national AI capacities and institutional frameworks

Many developing countries do not have strong statistical systems. In building national capacities for AI, governments need to build the public data pool, creating annotated and machine-readable data sets in a wide range of sectors. The rules for the aggregation and use of personally identifiable data about citizens, held by state agencies, have to be different from data about natural resources (for example, mineral wealth, forests) or artifacts (for example, electrical grids, national highways) to ensure that privacy is not undermined.[65] 'Digital passports' that enable citizens to dynamically control the extent to which their data is being shared can promote higher standards of privacy along with institutional oversight mechanisms such as preemptive and ongoing audits by the data protection authority.

Models to encourage private entities to build AI through monetisation of access to such data pools could open up the risk that smaller players may not be able to outbid transnational corporations. Such models may also end up marketising the data that is valuable to build a new class of AI as a public good. Rules must therefore ensure that public interest is not compromised when the private sector is given access to such data pools for development of AI innovations.

The creation of such data pools and AI tools for development solutions in the local context is not possible without compulsory data sharing by private companies that have amassed data in key sectors such as transportation, health and public planning. Companies whose market share reaches a defined level may be mandated to open up access to their data resources to competitors in the same market, particularly start-ups.[66] Data pools that scaffold the data and AI infrastructure for public good will therefore need to come from both state and private data contributions and be managed through both data trusts and data marketplaces. In addition to data pools, other essential digital infrastructure—identity authentication protocols, public payment systems, etc.—will be necessary to catalyse AI innovation for local value creation.

In core development sectors, including health and education, governments need to establish public AI infrastructure through appropriate principles of subsidiarity and the separation of powers. This means that control over digital intelligence systems cannot be exclusively vested with the executive wing of the national government. Local governments such as municipal bodies and sectoral agencies such as women's development agencies should have the space to construct and run their own initiatives. Innovative partnership arrangements between local governments and community-based organisations should also be explored. Where private parties are brought on board as technical experts to assist in the development of such initiatives, contracts must secure public ownership of the concerned datasets and intelligence solutions.

d. Checking the power of transnational digital corporations

Given that the bulk of AI innovation is currently being spearheaded by transnational corporations, norms and rules at the national level are necessary to protect the

interests of domestic businesses and enterprises (across a wide spectrum that includes not-for-profits and cooperatives). Policy measures will need to straddle: Fair, Reasonable and Non-Discriminatory Access (FRAND) provisions in technology patenting to prevent digital corporations from locking in essential building blocks of algorithmic innovation;[67] Foreign Direct Investment (FDI) controls in the digital start-up sector to prevent extractivist investments that cannibalise domestic enterprises;[68] and regulation for algorithmic audit and scrutiny to protect the rights to privacy, equality and non-discrimination; and limits on the use of personally identifiable data for hyper-profiling.

The rapacious greed of digital transnational corporations for data, their opacity about algorithms and brazen non-compliance with domestic regulation are issues that require an international mechanism to enforce corporate accountability. Although some progress has been made in deliberating a legally binding instrument on transnational corporations and business enterprises with respect to human rights, this process has not gathered momentum owing to the clout that transnational corporations enjoy. The need for progress on this front cannot be over emphasised.

4. New directions for AI governance

Development is a product of contested power relations that in the hyper-globalised world has become more complicated with the rise of data-based intelligence as a key determinant of economic power. What this essay argues is that if AI is to be harnessed for development, its governance imaginaries cannot be confined to the characteristic liberalism and individualism that currently dominate the debate. Liberal ideas about AI governance ignore the particular paths of dependency that hegemonic intelligence capital foists on individuals and collectives through shrinking structures of choice in a wider neoliberal global order.

The erosion of rights for individuals and communities in the dominant AI-led paradigm requires that the norms, institutions and practices leading to rights and justice be revisited and recalibrated. Moving towards this means redrawing the boundaries of the AI governance debate, accounting for the implications and consequences of AI through the lens of social power. UN Special Rapporteurs on the rights to privacy, freedom of expression and freedom of assembly and association have all independently called attention to the new enforcement challenges for global human rights frameworks in the AI paradigm.[69] Multistakeholder initiatives such as the Global Commission on the Stability of Cyberspace are pushing for a new global framework on peace and security in the context of the weaponisation of AI, building on policy proposals such as Microsoft's call for a Digital Geneva Convention. The International Labour Organisation's (ILO) Global Commission on the Future of Work has pointed to the need for a human-centred understanding of labour futures where measures of AI productivity are in sync with lived economic experience.

These splintered narratives need to be woven together into a cohesive vision; one that acknowledges the claims of maldistribution, for a new global data and AI constitutionalism that enables nation states, communities and individuals to pursue their pathways to development. Without a new AI compact, the wicked problem of development is only going to be more wicked.

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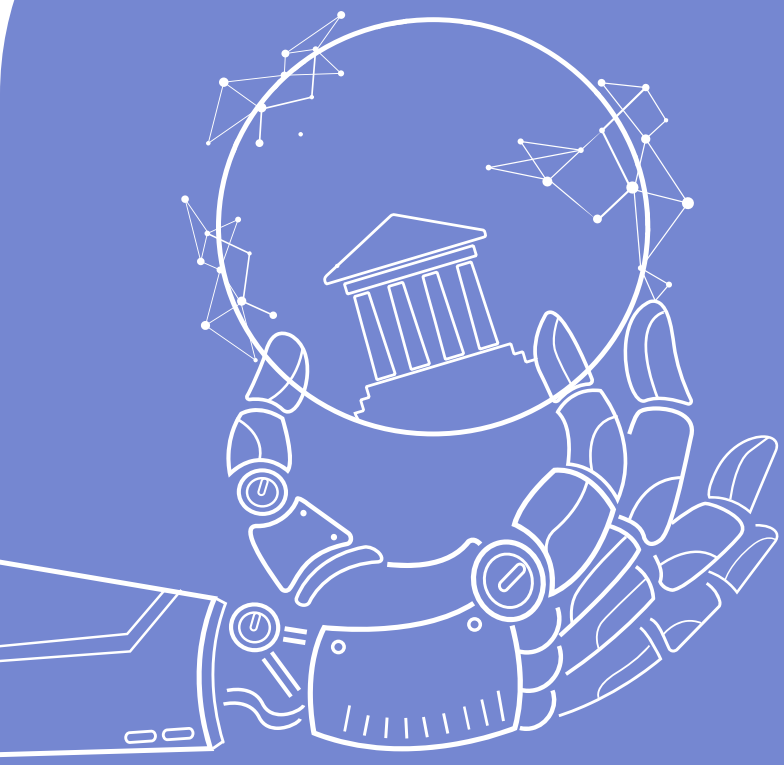

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