GLOBAL AI COMPETITION: STRATEGIC DEVELOPMENTS AND INDIA'S ROLE

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ABSTRACT

The rapid evolution of artificial intelligence (AI) has heralded a new era of global competition, transforming technological landscapes and redefining strategic priorities. Recent developments, such as China's DeepSeek-R1 and the AI Action Summit in Paris, have underscored shifting power dynamics in AI innovation and governance. While Western nations have historically dominated AI advancements, emerging players, including China and India, are asserting their presence through open-source models, regulatory adaptations, and strategic investments.

DeepSeek-R1, an advanced AI model developed in China, challenges the dominance of Western AI corporations by offering an open-source alternative, thereby signalling a broader transition towards decentralised AI innovation. Simultaneously, at the AI Action Summit, global leaders emphasised the necessity of balancing regulatory oversight with innovation to ensure that AI remains an asset rather than a liability. Recognising the transformative potential of AI, India has initiated strategic investments, infrastructure development, and policy adaptations to establish itself as a formidable AI contender.

This paper explores key geopolitical developments in AI, the competitive stance of major economies, and the implications of AI governance frameworks. It particularly examines India's evolving AI strategy, emphasising the necessity of ethical AI development, robust infrastructure, and a balanced regulatory approach. As nations compete for leadership in AI, those who successfully integrate innovation with strategic policymaking will dictate the future trajectory of global technological supremacy.

I.　Introduction

Artificial intelligence is at the vanguard of technological disruption, reshaping economies, national security frameworks, and global influence. The AI race has intensified, with nations investing heavily in research, infrastructure, and regulatory mechanisms to maintain or attain dominance. Historically, Western technological giants spearheaded AI breakthroughs, but recent developments have begun to challenge this hegemony. China's DeepSeek-R1 exemplifies the potential of open-source AI to rival proprietary models, heralding a shift in AI leadership. Concurrently, the AI Action Summit in Paris underscored the global commitment to fostering innovation whilst advocating for flexible regulatory policies. India, recognising AI's profound implications, is undertaking strategic initiatives to position itself as a leader in the field. This paper examines these developments, analysing their impact on global AI competition and India's evolving role within this landscape.

II.　A New Era of Global Competition

In recent weeks, the landscape of artificial intelligence (AI) has undergone a profound transformation, challenging previously held assumptions regarding the dominance of a select few entities. A new phase of accelerated advancements, strategic manoeuvres, and geopolitical competition has emerged. Those who fail to adapt to this evolving paradigm risk obsolescence in an increasingly AI-driven world.

A.　China's DeepSeek-R1: A Paradigm Shift in AI Development

A significant turning point occurred in January with the unveiling of DeepSeek-R1, an advanced AI model developed by the Chinese start-up DeepSeek. This model is noteworthy not only for its ability to rival leading AI systems such as OpenAI's GPT-4 but also for being open-source and freely accessible. This development constitutes more than a mere technological milestone—it serves as a definitive signal that AI supremacy is no longer confined to Western corporations.

DeepSeek-R1 exemplifies the fact that success in AI is predicated not solely on financial investment but also on efficiency, rapid innovation, and strategic foresight. This shift in AI leadership necessitates a recalibration of global strategies to maintain competitiveness in this

evolving arena.[1]

B. AI Action Summit in Paris: Prioritising Innovation Over Regulation

Concurrently, the AI Action Summit, convening representatives from nearly 100 nations, sought to delineate the trajectory of AI governance and development. The prevailing consensus was unequivocal: fostering AI innovation must take precedence over excessively stringent regulatory constraints.

A pivotal moment of the summit was France's declaration of a €109 billion investment in AI, reinforcing the urgency of substantial financial commitments to ensure sustained global competitiveness. Moreover, a strategic policy shift was observed as President Emmanuel Macron and Finnish Minister Timo Harakka advocated for the relaxation of AI regulations across Europe. This initiative seeks to ensure that European nations remain at the forefront of AI innovation, mitigating the risk of falling behind their global counterparts, particularly in China and the United States.[2]

C. India's Advocacy for Ethical and Inclusive AI

A salient outcome of the summit was India's emphasis on a human-centric AI framework. Prime Minister Narendra Modi articulated a compelling vision advocating for AI development that not only stimulates economic growth but also prioritises social well-being, labour market expansion, and environmental sustainability.

The summit culminated in a collective commitment to inclusive and sustainable AI, reinforcing the imperative that AI should be harnessed to benefit humanity at large. As AI continues to serve as a pivotal driver of economic and technological transformation, the ability to exert control over AI supply chains is set to confer a decisive strategic advantage.[3]

D. China's Strategic Pivot Towards AI Self-Sufficiency

DeepSeek's success underscores China's growing prominence in AI development. Kai-Fu Lee, former President of Google China, succinctly characterised the global AI dynamic: while the

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[1] B. V. R. Subrahmanyam & Debjani Ghosh, Needed: The Big Leap, THE INDIAN EXPRESS, Mar. 1, 2025, at 11.
[2] Id.
[3] Id.

United States excels in pioneering research and breakthroughs, China demonstrates exceptional proficiency in engineering and large-scale implementation. Efficiency and optimisation, particularly in the face of constrained resources, have become defining attributes of China's AI strategy.

In response to heightened export restrictions, Chinese AI firms have prioritised enhancing model architectures, leading to notable breakthroughs in:

- Reinforcement Learning: AI systems progressively refine their capabilities through iterative self-improvement and real-world feedback.

- Mixture-of-Experts (MoE) Model: A sophisticated mechanism that selectively activates specific neural network components, optimising computational efficiency and reducing resource expenditure.

- Multi-Head Latent Attention: An advanced technique that enhances AI's capacity to process complex data by identifying intricate relationships within datasets.

- Knowledge Distillation: A method that facilitates the transfer of knowledge from expansive AI models to smaller, more efficient systems, thereby enhancing scalability.

Furthermore, China's transition from NVIDIA's CUDA platform to PTX is emblematic of its broader strategic shift towards technological self-reliance. This transition transcends mere operational considerations; it constitutes a fundamental redefinition of AI sovereignty, ensuring resilience against external dependencies.

These advancements underscore the axiom that necessity catalyses innovation. The emerging leaders of AI will be distinguished not only by their research capabilities but also by their capacity for scalable and cost-effective technological deployment.[4]

E. The United States' Response: Reinforcing AI Leadership

In recognition of the intensifying AI race, former US President Joe Biden enacted two critical directives in the final days of his administration:

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[4] Id.

- Regulation of AI-Specific Semiconductor Exports: On 13 January, the United States introduced stringent controls on the export of AI-relevant hardware, thereby limiting access to advanced semiconductor technologies for geopolitical adversaries while facilitating trade with allied nations.

- Sustainable Energy Initiatives for AI Infrastructure: On 14 January, an executive order was issued mandating the prioritisation of low- or zero-carbon energy sources for AI data centres. Federal agencies were instructed to allocate land for AI-related infrastructure development to ensure sustainable growth in the sector.

Despite President Donald Trump's subsequent revocation of several Biden-era policies, these two AI-related measures have thus far remained intact. Vice President Vance has reaffirmed the United States' strategic commitment to AI dominance, particularly in the realms of semiconductor production, software development, and regulatory influence.[5]

F. The AI Arms Race: Controlling the Future of Innovation

The global AI landscape has reached an inflection point. The contest is no longer limited to technological breakthroughs but extends to the broader strategic control of AI development. Those who spearhead AI advancements will define the technological and economic order of the future, while those who lag behind risk becoming dependent and strategically vulnerable.

As AI development continues to accelerate, the forthcoming years will witness an escalation in competition. The debate is no longer centred on progress alone—it is now about who will dictate the future of AI and who will be relegated to a subordinate position.[6]

G. India's AI Trajectory: A Leadership Imperative

India finds itself at a pivotal moment in its quest to attain the status of a developed nation by 2047 (Viksit Bharat). Realising this vision necessitates a profound transformation in technological capabilities, economic structures, and societal frameworks. To this end, India must transcend the role of a mere AI adopter and establish itself as a global AI innovator.

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[5] Id.
[6] Id.

To cement its leadership position, India must prioritise three fundamental imperatives:

- Cultivation of a world-class AI talent pool to bolster national and global competitiveness.

- Substantial investment in pioneering AI research and development to ensure that India emerges as a creator of transformative AI technologies rather than a passive consumer.

- An unwavering commitment to human-centric AI that aligns technological advancements with ethical principles and societal progress.

India's AI strategy must be ambitious, visionary, and uncompromising. As Prime Minister Modi aptly asserted at the AI Action Summit, while AI may script the future, it is imperative that humanity retains the authority to shape and direct its course responsibly.

The AI revolution is inexorably advancing. The fundamental question is no longer whether nations will embrace AI but whether they will lead it—or be left behind.[7]

III. The Evolution of Artificial Intelligence (AI) and India's Role

A. Adapting Policies to Keep Up with AI Advancements

Artificial Intelligence (AI) is transforming the world at an unprecedented pace. During the Global Artificial Intelligence (AI) Action Summit in Paris, Indian Prime Minister Narendra Modi addressed key issues that must be considered as AI continues to evolve. He highlighted some of the biggest concerns, including potential job losses due to automation, risks to cybersecurity, and the growing spread of disinformation and deepfake technology. Given these challenges, he stressed the urgent need for upskilling and reskilling the workforce so that people can remain employable in an AI-driven economy.[8]

B. The Connection Between AI and Clean Energy

One often-overlooked aspect of AI development is its dependence on energy. As AI-powered technologies become more advanced, they will require vast amounts of electricity to operate

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[7] Id.
[8] Development with AI, BUSINESS STANDARD, Feb. 13, 2025, at 11.

efficiently. Mr Modi emphasised the need for India to invest in clean and stable energy sources to meet the rising power demands. Without a sustainable energy strategy, AI's growth could be hindered, making it essential for India to develop green energy solutions alongside its AI advancements.[9]

C. India's Strength in AI Development and Language Diversity

India has several advantages that position it as a key player in AI development. The country boasts one of the largest pools of technically skilled professionals, making it an ideal location for AI research and innovation. Additionally, India's rich linguistic diversity presents a unique opportunity for AI-powered language processing tools. Unlike many other countries that primarily use English or a single dominant language, India has a wide range of regional languages spoken by millions. This diversity creates a valuable environment for developing AI models that can understand and process multiple languages effectively.[10]

Recognising this, the Indian government is actively investing in the creation of large language models. These AI models are expected to be open-source, meaning they will be freely available for public use. Developers will also have access to low-cost tools, allowing them to build applications tailored to India's linguistic landscape. This approach mirrors global projects like DeepSeek, which focus on making AI accessible and adaptable to different languages and cultural contexts.

D. India as a Growing Market for AI Applications

India is rapidly emerging as one of the largest consumers of AI-driven products and services. OpenAI's CEO, Sam Altman, recently stated that India ranks as the second-largest user base for ChatGPT. This is hardly surprising, given India's massive internet user base, thriving startup ecosystem, and digital payment networks that generate vast amounts of data. These factors make India an attractive market for AI-powered innovations.

However, capitalising on this potential requires agility. AI is evolving quickly, with new applications emerging regularly. Initially, many believed that creating powerful AI models required massive financial investments, as seen with ChatGPT, Claude, Gemini, Llama, and

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[9] Id.
[10] Id.

Grok. However, projects like DeepSeek have challenged this notion by proving that AI development can be both efficient and cost-effective. India must adopt a flexible approach to AI development to remain competitive in this dynamic field.[11]

E. Government Initiatives to Boost AI Infrastructure

The Indian government is taking proactive steps to strengthen its AI infrastructure. Investments are being made in expanding data centres and increasing computational power. However, one of the biggest challenges is ensuring that these investments remain relevant in a rapidly evolving technological landscape. If India becomes dependent on outdated hardware or software, it risks falling behind in the global AI race. Therefore, policymakers must remain adaptable and open to change.

F. Tackling AI Bias and Ensuring Fairness

A major concern surrounding AI is the risk of bias. Since AI learns from existing data, it can inadvertently adopt and reinforce societal biases. For instance, facial recognition systems trained primarily on images of white individuals may not work effectively on people of Asian or African descent. Similarly, AI models that are trained using biased datasets may unintentionally discriminate based on gender, race, or caste.

Prime Minister Modi underscored the importance of addressing these biases to ensure that AI serves all communities fairly. In a diverse country like India, where social and economic inequalities exist, ensuring unbiased AI is particularly crucial. Developers and policymakers must actively work to eliminate these biases so that AI can be used ethically and equitably.[12]

G. Updating Legal Frameworks to Keep Up with AI Developments

As AI capabilities expand, existing laws may no longer be sufficient to regulate its use. Policymakers must be prepared to update legal frameworks to address new challenges that arise with AI advancements. One major area of concern is the integration of AI into law enforcement and national security. AI-powered surveillance systems can significantly enhance security efforts, but they also raise ethical concerns about privacy and government overreach.

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[11] Id.

[12] Id.

Similarly, AI is increasingly being used in military applications. While AI-driven defence technologies can provide strategic advantages, they also have the potential to cause large-scale destruction if used irresponsibly. To prevent misuse, strict regulations must be put in place to ensure that AI is deployed in a way that aligns with ethical and humanitarian principles.[13]

H. Striking a Balance Between Innovation and Ethical AI Governance

As AI continues to shape the future, it is crucial to strike a balance between technological progress and ethical responsibility. Good governance requires that AI is used as a tool for positive development rather than oppression. Policymakers at both national and international levels must work together to create an environment where AI enhances productivity, improves public services, and supports economic growth while upholding ethical standards.

By taking a thoughtful and adaptive approach, India can harness the power of AI to drive innovation, create opportunities, and ensure that technological advancements benefit society as a whole.[14]

IV. Artificial Intelligence in India: Prospects and Challenges

Artificial Intelligence (AI) is reshaping industries globally, and India stands at a pivotal juncture in its technological evolution. With its rapidly expanding digital economy and a burgeoning AI sector, the nation has the potential to emerge as a global leader in AI innovation. However, alongside its vast opportunities, AI presents significant challenges, including employment displacement, ethical concerns surrounding algorithmic bias, the proliferation of misinformation, and competitive constraints posed by dominant foreign technology corporations. Striking an equilibrium between AI advancement and regulatory oversight will be essential in ensuring India's sustained economic growth and technological leadership.[15]

A. AI and India's Position in the Global Economy

In the contemporary global economy, nations that successfully integrate AI into their industries gain a pronounced competitive advantage. AI enhances efficiency, reduces operational costs,

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[13] Id.
[14] Id.
[15] Badri Narayanan Gopalakrishnan & Hosuk Lee-Makiyama, The steps that will shape India's AI ambition, THE HINDU, Mar. 1, 2025, at 6.

and optimises services across various sectors, including healthcare, finance, education, and manufacturing. For India, the adoption of AI is imperative to maintaining its competitive edge, particularly within the service and consultancy industries, which form a significant part of the nation's economic framework.

Despite its potential, India encounters several impediments to AI implementation. High investment costs, a shortage of skilled professionals, and infrastructural constraints hinder widespread AI adoption. Moreover, the AI landscape is predominantly shaped by multinational corporations, particularly those based in the United States and China, whose extensive resources and technological supremacy place Indian enterprises at a disadvantage.[16]

B. The Impact of AI on Employment and Economic Stability

A principal concern associated with AI adoption is its impact on employment. AI-driven automation is progressively replacing numerous routine and repetitive tasks, thereby diminishing the demand for human labour in certain industries. This transition poses a significant threat to low-skilled workers, who may encounter considerable difficulty in securing alternative employment opportunities.

Industries such as customer service, manufacturing, and data processing are particularly susceptible to automation. While AI fosters the creation of new employment opportunities in fields such as machine learning, robotics, and data science, these roles necessitate advanced technical expertise that a substantial segment of the workforce currently lacks. Without comprehensive workforce retraining initiatives, AI-induced job displacement may exacerbate socio-economic inequalities.[17]

C. Algorithmic Bias and Ethical Implications

AI systems rely on vast datasets to facilitate decision-making processes. However, if the underlying data is biased or incomplete, AI models may inadvertently perpetuate discrimination and inequity. This issue is especially pertinent in domains such as recruitment, financial services, and law enforcement, where algorithmic bias could yield prejudicial outcomes.

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[16] Id.

[17] Id.

For instance, AI-powered recruitment platforms may exhibit preferential tendencies based on historical hiring patterns, thereby disadvantaging certain demographic groups. Similarly, AI-driven credit assessment models could disproportionately limit access to financial services for underrepresented communities. To mitigate such risks, robust regulatory frameworks and stringent ethical guidelines are imperative to ensure transparency, accountability, and fairness in AI decision-making.[18]

D. The Threat of Misinformation and Deepfake Technology

One of the most alarming consequences of AI is its capacity to generate and disseminate misinformation. Deepfake technology, which employs AI to create hyper-realistic yet entirely fabricated visual and auditory content, poses a severe threat to public trust and democratic integrity.

Deepfake-generated misinformation has the potential to manipulate public discourse, erode confidence in legitimate news sources, and influence electoral outcomes. A fabricated video depicting a political leader making false or inflammatory statements, for instance, could have profound repercussions on public perception and governance. Given the increasing reliance on digital platforms as primary sources of information, the proliferation of AI-generated disinformation necessitates urgent intervention through regulatory measures and technological safeguards.[19]

E. Regulatory Challenges and the Dominance of Foreign Technology Corporations

India's AI industry, despite its rapid expansion, faces significant competitive challenges from multinational technology conglomerates. Many Indian startups and enterprises contend that dominant global corporations, particularly those controlling key digital infrastructure, establish market conditions that favour their own interests, thereby impeding fair competition.

In response to these concerns, Indian technology firms have initiated legal proceedings against Google, alleging anti-competitive practices that hinder market accessibility for local enterprises. While regulatory measures aimed at curbing monopolistic tendencies are warranted, excessive restrictions could inadvertently stifle innovation and impede AI

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[18] Id.
[19] Id.

development within India. A judicious approach to AI governance is required—one that balances the need for regulatory oversight with the imperative to foster technological growth and enterprise competitiveness.[20]

F. India's Strategic Path in AI Development

India has made significant strides in localising various aspects of AI research and development. However, the introduction of additional regulatory burdens may escalate operational costs and create barriers to AI adoption, thereby hampering industrial progress.

By contrast, leading global competitors such as China and the United States have adopted comparatively lenient regulatory frameworks, thereby accelerating their AI advancements. Should India impose excessively stringent controls, it risks ceding its competitive standing in the AI sector to nations that prioritise technological agility over regulatory constraints.

A well-calibrated AI strategy necessitates a dual approach: the establishment of ethical and regulatory safeguards to mitigate risks, coupled with substantial investment in AI education and workforce development. By equipping professionals with the requisite skills to navigate an AI-driven economy, India can facilitate both industrial growth and socio-economic resilience.[21]

G. The Imperative for Balanced AI Governance

AI represents an unparalleled opportunity for India to consolidate its status as a global technological leader. However, this potential is accompanied by complex challenges, including employment displacement, algorithmic bias, misinformation, and monopolistic market dynamics. Addressing these concerns requires a multifaceted policy approach that fosters innovation while safeguarding ethical standards and market fairness.

To achieve sustainable AI growth, India must focus on:

- Investing in AI education and workforce retraining to ensure widespread accessibility to emerging job opportunities.

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[20] Id.
[21] Id.

- Implementing robust regulatory frameworks to mitigate algorithmic bias and enhance AI transparency.

- Strengthening measures against misinformation to preserve public trust and democratic stability.

- Establishing fair competition policies that enable Indian enterprises to thrive in the global AI economy.

Through strategic policymaking and adaptive governance, India can harness the transformative power of AI while safeguarding its economic, technological, and democratic foundations. The future of AI in India will be determined not merely by technological capability but by the nation's ability to navigate its complexities with foresight, prudence, and innovation.[22]

V. India's Strategic Role in the Global AI Revolution

A. The United States' Commitment to AI Advancement

In recent weeks, the United States has taken a decisive step towards reinforcing its leadership in artificial intelligence (AI) and semiconductor technology. Through the Stargate Initiative, the US government has pledged billions of dollars to fortify its semiconductor industry. This substantial investment aims to generate 100,000 employment opportunities and establish the nation as a preeminent force in AI innovation.

Simultaneously, a significant disruption has emerged in the form of DeepSeek, an open-source AI model that has challenged proprietary systems through its exceptional cost-efficiency and performance. Developed in under two years with a workforce of merely 200 individuals and an investment of less than $10 million, DeepSeek's achievements stand in stark contrast to those of OpenAI, which employs 4,500 personnel and has secured $6.6 billion in funding. This development signals a paradigm shift in AI, underscoring the potential of open-source models to drive technological advancement with limited financial resources.[23]

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[22] Id.

[23] Amitabh Kant, AI race: What India should do, THE INDIAN EXPRESS, Feb. 8, 2025, at 13.

B. India's Emergence as a Global AI Contender

India is poised to assume a pivotal role in the global AI landscape, underpinned by its youthful demographic, expanding digital infrastructure, and strong governmental commitment to technological progress. Notably, Sam Altman, Chief Executive Officer of OpenAI, who had previously dismissed India's AI aspirations as "entirely unrealistic", has since reversed his position, now advocating for India's leadership in AI development.

The nation's AI ecosystem is already demonstrating remarkable growth:

- A Highly Skilled Workforce: India boasts over 420,000 AI professionals—more than the entire technology workforce of several nations.

- Unprecedented Adoption: AI integration among Indian enterprises stands at an impressive 92%, the highest rate globally.

- A Rapidly Expanding Market: The Indian AI market, valued at approximately $17 billion, continues to experience robust expansion.

The Indian government has undertaken proactive measures to propel AI innovation through initiatives such as the IndiaAI Mission, an unequivocal commitment to establishing India as a frontrunner in AI research and application.[24]

C. The Rise of AI Start-Ups in India

India has witnessed an unprecedented surge in AI-driven enterprises, with over 240 generative AI start-ups emerging to address industry-specific challenges. Approximately 70% of these enterprises focus on key sectors such as healthcare, financial services, education, and agriculture. Among the most notable start-ups are:

- Sarvam AI, which is developing AI models tailored to Indian languages, enhancing accessibility and linguistic inclusivity.

- Niramai, a health-tech enterprise leveraging AI to facilitate early detection of breast

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[24] Id.

cancer, thereby improving medical outcomes for women.

- BHASHINI, a linguistic AI model designed to bridge communication gaps by supporting over 22 Indian languages, fostering digital inclusivity and accessibility.

These enterprises exemplify India's capacity to develop transformative AI solutions tailored to its diverse socio-economic landscape.[25]

D. India's Digital Transformation: A Model of Global Significance

India's digital evolution stands as one of the most rapid and comprehensive technological transformations in modern history. In a remarkably short period, the nation has redefined its financial and technological infrastructure. Key achievements include:

1. Financial Inclusion on an Unprecedented Scale

- Bank account penetration surged from 30% to over 80% in a mere seven years—a feat that global institutions such as the World Bank and International Monetary Fund (IMF) had estimated would require 47 years.

- The cost of establishing a bank account has been reduced dramatically—from $23 to just 15 cents, rendering financial services more accessible to millions.

2. The Digital Payments Revolution

- India's Unified Payments Interface (UPI) processes transactions amounting to $568 billion per month, representing nearly 49% of all global real-time transactions.

- This advancement has not merely digitised conventional financial transactions but has also facilitated the emergence of novel economic interactions and business models.

3. A Thriving Start-Up Ecosystem

- India has nurtured over 100 unicorn start-ups (companies valued at over $1 billion), catalysed by robust digital public infrastructure (DPI).

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[25] Id.

- These start-ups span multiple sectors, including healthcare, digital lending, and e-commerce, exemplifying the nation's burgeoning entrepreneurial ecosystem.

4. Digital Infrastructure as a Crisis-Response Mechanism

- During the COVID-19 pandemic, India's digital infrastructure facilitated the direct transfer of $4.5 billion in financial aid to 160 million individuals.

- This rapid and transparent disbursement of resources ensured that crucial assistance reached workers, farmers, and vulnerable communities without inefficiencies or leakage.[26]

E. Overcoming the Challenge of AI Hardware Limitations

A fundamental challenge confronting India's AI aspirations is its reliance on external sources for high-performance computing hardware, particularly Graphics Processing Units (GPUs), which constitute the cornerstone of AI computation. The United States has recently enacted the AI Diffusion Rule, imposing stringent restrictions on the export of advanced GPUs. Despite India's strategic partnership within the Quad alliance, it has been designated under Tier II restrictions, thereby limiting its access to critical AI hardware.

To mitigate these constraints, India must prioritise domestic development of AI hardware ecosystems, which will:

- Reduce dependence on external technology suppliers.

- Foster employment opportunities in the semiconductor and AI sectors.

- Attract substantial investment, positioning India as a critical player in the global AI supply chain.

By advancing AI hardware research and development, India can solidify its self-reliance and technological sovereignty.[27]

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[26] Id.

[27] Id.

F. A Strategic Roadmap for India's AI Leadership

To establish itself as a global AI leader, India must adopt a meticulously planned and ambitious approach. The following imperatives are essential:

- Resource-Efficient Innovation – India must emulate the Indian Space Research Organisation (ISRO), achieving technological breakthroughs with cost-effective methodologies.

- Open-Source Advancement – The nation should cultivate an ecosystem that fosters open-source AI development, encouraging collaborative innovation.

- Development of Sovereign AI Models – India must construct indigenous AI models trained on local datasets, ensuring they are free from external biases and tailored to domestic requirements.

- Multilingual and Multimodal AI Systems – Given India's 22 constitutionally recognised languages and numerous regional dialects, AI models must be linguistically diverse and contextually adaptable.

- International Positioning in AI Policy – As a Quad member, India must strive for Tier I recognition in AI governance, securing access to unrestricted AI-related technologies.

- A Sense of Urgency – India must adopt a mission-oriented approach, ensuring that its AI strategy is executed with swiftness and precision.[28]

G. India's AI Future: A Defining Decade

India stands at a defining juncture in its technological evolution. If strategic investments, policy initiatives, and innovation efforts are pursued with due diligence, the nation can transition from an AI service provider to a global AI powerhouse. With its unparalleled talent pool, well-established digital infrastructure, and government-led vision, India is exceptionally positioned to lead the next frontier of AI development.

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[28] Id.

If decisive action is taken today, future generations will look back on this era as the moment when India asserted its position at the vanguard of AI innovation, shaping the technological landscape of the future.[29]

VI.   India's Role in the Global AI Race

A. India's Strategic Position in Artificial Intelligence

India, as a pre-eminent global hub for information technology, is uniquely positioned to capitalise on the burgeoning field of artificial intelligence (AI). Across the world, nations are striving to regulate AI in a manner that safeguards their interests while ensuring technological leadership. As industrialised economies navigate this evolving landscape, distinct regulatory approaches are emerging, shaping the future trajectory of AI.[30]

B. Contrasting Global Approaches to AI Governance

The European Union (EU) has adopted a stringent regulatory framework, aimed at mitigating the risks and societal implications of AI. These legal provisions seek to prevent ethical breaches, protect privacy, and ensure accountability. Conversely, the United States (US) maintains a more laissez-faire approach, prioritising innovation and market-driven progress over stringent legal constraints.

India is at a crossroads, seeking to balance these divergent approaches. If it adheres to rigid or outdated regulatory frameworks that address only a narrow spectrum of hypothetical risks, it risks stagnation in the global AI race. To remain competitive against formidable rivals such as China and the US, India must adopt a pragmatic and forward-looking policy framework that fosters both innovation and responsible AI deployment.[31]

C. The Rationale Behind the EU's Stringent AI Regulations

The EU's decision to enforce binding AI regulations is largely influenced by its structural composition. Unlike India, the EU does not possess a unified constitutional framework that universally safeguards human rights or restricts AI-driven surveillance by its member states.

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[29] Id.
[30] Gopalakrishnan & Lee-Makiyama, *supra* note 15, at 6.
[31] Id.

Consequently, to prevent regulatory fragmentation and ensure coherence across its single market, the EU must enact overarching legal measures that pre-empt national AI policies.[32]

D. Implications for India's IT Export Industry

India's competitive advantage lies in its thriving IT and software services sector, which plays a pivotal role in the global digital economy. However, inadequately designed AI regulations could significantly undermine its export capabilities. Given China's dominance in hardware manufacturing and cloud computing, it is imperative that India sustains its edge in IT services. While India has previously drawn inspiration from EU and US regulatory models, it must now craft a bespoke framework tailored to its services-driven industrial landscape.[33]

E. The Risks of Over-Regulation

Excessive regulatory intervention could precipitate adverse consequences for India's AI sector. Overly restrictive policies may compel businesses to relocate their research, software development, and IT operations to jurisdictions with more favourable regulatory climates. Such a shift could erode India's standing in the global IT market, curtailing economic growth and diminishing its strategic influence in AI development.[34]

F. A Strategic Vision for India's AI Future

Rather than constraining AI advancement through an overly rigid regulatory regime, India should leverage its diplomatic and technological prowess to advocate for open-source AI models. Ensuring that AI technologies remain accessible, adaptable, and commercially viable will serve to fortify India's leadership in the sector. Furthermore, strategic international collaborations should be pursued to secure critical resources, including energy, advanced computing infrastructure, and universally recognised AI standards. By adopting a judicious and strategic approach, India can position itself as a global leader in AI innovation while safeguarding its long-term national interests.[35]

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[32] Id.
[33] Id.
[34] Id.
[35] Id.

VII.   India's Strategic Vision for Open-Source Artificial Intelligence

Artificial Intelligence (AI) is increasingly shaping the trajectory of technological advancement, and India is poised to establish itself as a key player in this transformative domain. Prime Minister Narendra Modi has articulated a strong commitment to open-source AI, advocating it as a means to align India's aspirations with global developments while fostering transparency, accessibility, and equitable participation. Furthermore, he has underscored the imperative of engaging private enterprises in AI development to accelerate innovation and ensure sustainable growth.[36]

A. The AI Action Summit: A Forum for Global Dialogue

At the AI Action Summit in Paris, co-chaired by Prime Minister Modi and French President Emmanuel Macron, discussions revolved around the far-reaching potential of AI in revolutionising critical sectors, including healthcare, education, and agriculture. While acknowledging the immense benefits of AI, Prime Minister Modi also emphasised the need to address inherent risks, particularly the emergence of biases that could result in prejudiced decision-making.

A central theme of his address was the significance of open-source AI systems in cultivating trust and inclusivity. Unlike proprietary models governed by a select few corporate entities, open-source AI fosters broad-based collaboration and adaptation to local requirements. This perspective holds particular pertinence in the contemporary AI landscape, where conventional AI paradigms—characterised by substantial investment and restricted access—are being challenged by China's cost-efficient, open-source model known as DeepSeek.[37]

B. India's Distinctive Approach to AI Development

India's AI strategy is not confined to adoption but extends to actively shaping the future of the field. The country's trajectory diverges from that of dominant American technology firms such as Google and Microsoft, which wield substantial influence over global AI advancements. Prime Minister Modi has unequivocally asserted that India must not remain merely a consumer of AI models developed by international corporations such as OpenAI. Instead, the nation is

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[36] Open and Robust, THE INDIAN EXPRESS, Feb. 13, 2025, at 10.
[37] Id.

committed to establishing its own large language model (LLM), positioning itself as an innovator rather than a marketplace for foreign AI solutions.

The intensifying global competition in AI was palpable at the summit, where two key nations, the United States and the United Kingdom, declined to endorse the final declaration. The United States expressed concerns that stringent regulations could stifle innovation and diminish its dominance, whereas the United Kingdom withheld its support on the grounds that the declaration did not sufficiently address global AI governance. These divisions underscore the challenges of achieving international consensus on AI policy. Moving forward, India aims to play a pivotal role in bridging these divergent perspectives and contributing substantively to global AI regulatory frameworks.[38]

C. Key Priorities for India's AI Advancement

India's offer to host the next AI summit represents a significant opportunity to consolidate its leadership in the field. However, before assuming this responsibility, the country must undertake concerted efforts to enhance its AI capabilities. A fundamental priority is the development of a robust AI ecosystem, including the creation of an indigenous LLM. Additionally, India must invest in procuring and manufacturing high-performance computing chips, specifically Graphics Processing Units (GPUs), which are indispensable for AI research and development. Recognising this imperative, the Union Minister of Electronics and Information Technology, Ashwini Vaishnaw, has advocated for India's pursuit of domestic GPU production to reduce dependence on imports.[39]

D. Government Initiatives and Strategic Investments

To realise its AI ambitions, the Indian government has launched the 'IndiaAI Mission', a flagship initiative with a designated budget of ₹10,370 crore. Within this framework, ₹2,000 crore has already been allocated in the current Union Budget to facilitate AI-driven projects. Nonetheless, governmental initiatives alone will not suffice. The active participation of private enterprises is equally crucial in fostering AI innovation. In leading AI-driven economies such as China, private-sector engagement has been instrumental in accelerating progress. India must,

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[38] Id.
[39] Id.

therefore, cultivate an enabling environment that incentivises corporate investment and fosters a competitive AI ecosystem.[40]

E. Towards an AI-Enabled Future

Prime Minister Modi has reaffirmed that India possesses an extensive talent pool capable of propelling AI innovation. However, translating this potential into tangible progress necessitates decisive action. By prioritising open-source AI, promoting indigenous innovation, investing in cutting-edge technological infrastructure, and fostering collaboration between the public and private sectors, India is well-positioned to emerge as a global leader in artificial intelligence. As the nation charts its course in this rapidly evolving domain, strategic foresight and resolute execution will be instrumental in shaping the future of AI on both a national and international scale.[41]

VIII.   The Necessity of Clear AI Regulations in India

Artificial intelligence (AI) is set to transform industries globally, making a well-defined regulatory framework imperative. In India, policymakers must carefully consider political and public concerns when shaping AI governance. Unlike the European Union, which enforces strict AI regulations before products reach the market, and California, which once pursued a similar approach, India has not adopted an ex-ante regulatory model. Instead, multiple governmental agencies have introduced independent policies, some of which conflict with one another. This fragmented approach has led to regulatory uncertainty, highlighting the need for a more structured and cohesive strategy.[42]

A. Lessons from Global AI Regulation

1. Strengthening Existing Laws Instead of Creating New Ones

Experiences from the European Union (EU) and the United States (US) indicate that refining and reinforcing existing legal frameworks is often more effective than drafting entirely new AI-specific legislation. Creating separate laws for AI risks regulatory overlaps, inconsistencies,

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[40] Id.
[41] Id.
[42] Badri Narayanan Gopalakrishnan & Hosuk Lee-Makiyama, The steps that will shape India's AI ambition, THE HINDU, Mar. 1, 2025, at 6.

and gaps that could leave certain AI-related concerns unaddressed.

2. Flexible Regulatory Approaches

India has already demonstrated a practical regulatory strategy through its transitional guidelines, which provide a structured yet adaptable framework for AI governance. These interim measures suggest that existing laws can be modified to effectively regulate AI without introducing conflicting or redundant legal provisions.[43]

B. India's Legal Framework for AI Regulation

India has a well-established legal system that can effectively address AI-related challenges without the need for a separate AI regulatory regime. Several key areas of Indian law are relevant to AI governance:

1. Competition Law (Antitrust Regulations)

Existing competition laws ensure a fair marketplace and prevent companies from using AI to engage in anti-competitive practices.

2. Corporate Liability Frameworks

Businesses deploying AI-driven solutions must be held accountable for ethical compliance, transparency, and responsibility in AI decision-making.

3. Freedom of Expression and Information Laws

With AI increasingly involved in content creation, existing laws on free speech and information regulation can be leveraged to address issues related to misinformation, censorship, and bias.

4. Public Order and Safety Regulations

AI applications must comply with laws that maintain public order and prevent risks to societal stability, national security, and individual safety.

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[43] Id.

5. The Information Technology (IT) Act

The IT Act already provides a legal foundation for digital governance. With strategic amendments, it can be extended to cover AI-related challenges, reducing the need for entirely new legislative measures.[44]

C. Defining India's AI Regulatory Pathway

India must adopt an AI regulatory approach that aligns with its national interests and technological goals.

1. Encouraging AI Adoption and Innovation

Rather than focusing on whether businesses should rely on domestic or foreign AI technologies, the priority should be to facilitate AI adoption across industries while ensuring access to a diverse range of AI models, including open-source alternatives.

2. Promoting Open-Source and Customisable AI Solutions

By supporting open-source AI models and flexible regulatory frameworks, India's IT sector can refine, customise, and innovate AI solutions tailored to the country's unique needs.

3. Balancing Oversight with Economic Growth

A well-balanced AI regulatory ecosystem will allow India to maintain strict oversight where necessary while fostering innovation and economic competitiveness. With a strategic approach, India can establish itself as a global leader in AI development while ensuring its regulatory framework supports both national and technological sovereignty.[45]

IX. Conclusion

The global AI race is no longer confined to technological advancements alone; it has become a contest of strategic dominance, economic influence, and geopolitical leverage. Nations that lead in AI will shape the future of industries, governance systems, and global trade. China's

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[44] Id.
[45] Id.

rapid advancements in AI, the United States' recalibration of regulatory frameworks, and India's ambitious AI initiatives exemplify the shifting dynamics of AI leadership.

However, leadership in AI requires more than financial investment—it demands judicious resource allocation, robust regulatory frameworks, and strategic international collaborations. India's trajectory in AI development must prioritise innovation while ensuring ethical deployment, regulatory clarity, and long-term sustainability. By fostering a balanced and forward-thinking AI strategy, India can transition from an AI adopter to an AI leader, securing its place at the forefront of global technological progress.

X.   Recommendations

A. Investment in AI Talent and Research – India should establish world-class AI research institutions and facilitate collaboration between academia and industry to cultivate a highly skilled workforce.

B. Infrastructure Development – Strengthening AI infrastructure, including high-performance computing capabilities and sustainable energy solutions, will be critical for long-term scalability and innovation.

C. Ethical AI and Regulatory Frameworks – A well-calibrated regulatory framework must be developed to mitigate risks such as bias, misinformation, and monopolistic control while fostering innovation and public trust.

D. Strategic Global Partnerships – India should engage in collaborative initiatives with leading AI economies to gain access to cutting-edge technologies, research, and expertise while advocating for inclusive AI governance.

E. Promotion of Open-Source AI – Encouraging the development and adoption of open-source AI models will democratise access to AI technology, enabling cost-effective and context-specific solutions tailored to India's diverse socio-economic landscape.

By implementing these strategic imperatives, India can position itself as a global AI powerhouse, ensuring that its technological advancements align with national development goals while contributing to broader global progress.