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EDUCATION 4.0

ENHANCING INDIA'S WORKFORCE FOR THE AI-POWERED FUTURE

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A STUDY ON SKILLING FOR VIKSIT BHARAT 2047: BUILDING AN AI-READY WORKFORCE

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Abstract

Artificial intelligence (AI) can greatly advance the Indian government's goal of turning the country into a developed economy by 2047, as outlined in the Viksit Bharat 2047 Plan. This essay examines how AI is revolutionizing several important fields, such as digital governance, education, public welfare and agriculture. Prominent apps like Digiyatra simplify aviation procedures, and AI powered platforms improve educational inclusivity and offer real-time translation, reducing linguistic and geographic barriers. Agriculture is supported by sector-specific tools like Kissan GPT, which provide farmers with vital information, and PolicyGPT, which makes complicated health insurance plans easier for customers to understand.

Government programs like the "One Nation One Ration Card" program and the Pradhan Mantri Garib Kalyan Anna Yojana show how AI can be used to improve service delivery and manage resources effectively. The report also discusses the significance of closing the skills gap in order to equip the workforce for a job market driven byAI, noting estimates of a 40% rise in AI and machine learning positions by The World Economic Forum, 2027. According to Prime Minister Narendra Modi, AI is positioned as a critical component in achieving the Viksit Bharat vision by 2047 by coordinating technological advancements with national development goals.

Keywords: *AI Integration, Innovation Ecosystem, AI Ethics, Digital Economy, Smart Cities.*

Introduction

The Indian government's Viksit Bharat 2047 Plan seeks to establish India as a developed country by the country's 100th anniversary of independence. With artificial intelligence (AI) emerging as a key force, this ambitious vision is set against a backdrop of rapid technological advancement and economic growth. in quickening this change. With its many uses, artificial intelligence (AI) has the potential to solve a number of national issues and advance a number of fields, such as public welfare, education, digital governance, and agriculture.

The Revolutionary Potential of AI:

The potential of artificial intelligence to transform industries by improving productivity, efficiency, and decision-making is becoming more widely acknowledged. A recent study by McKinsey & Company (2024) suggests that artificial intelligence (AI) could boost India's GDP by up to $500 billion by 2025, highlighting the technology's vital role in economic growth. The application of AI in industries like agriculture, education, and aviation is encouraging inclusivity and creativity in addition to increasing operational efficiency.

Digital Governance with AI:

The Digiyatra initiative is a noteworthy example, which uses AI to expedite airport passenger processing, cutting down on paperwork and saving time (Nasscom, 2023). This use case illustrates how AI can improve digital governance by increasing the effectiveness and accessibility of public services. AI in the Classroom: Learning environments are being revolutionized by AI-powered educational platforms that offer personalized content and real-time translation. According to a recent World Economic Forum report from 2024, AI-powered Language and location barriers can be overcome by educational tools, promoting inclusive education and lowering urban migration (World Economic Forum, 2024).

AI in Public Welfareand Agriculture:

In order to improve agricultural productivity and address information asymmetry, farmers are benefiting from tools like KissanGPT, which provide vital information (Agriculture Today, 2024). AI's role in public welfare is further demonstrated by programs like the Pradhan Mantri Garib Kalyan Anna Yojana and the "One Nation One Ration Card" scheme, which use AI to optimize resource allocation and service delivery (Government of India, 2024).

Crossing the Skill Divide:

Closing the skill gap is crucial to maximizing AI's potential. By 2027, the World Economic Forum projects a 40% rise in AI and machine learning jobs, highlighting the necessity of workforce upskilling. to adjust to the demands of modern technology (World Economic Forum, 2024). To sum up, artificial intelligence (AI) is a game-changing instrument that could hasten India's achievement of its development objectives for 2047. India can successfully move closer to its goal of becoming a developed country by addressing workforce readiness and incorporating AI into important sectors. AI has the ability to upskill workers, closing the existing skill gap and getting them ready for demands in the future. The need for reskilling programs and educational reforms is highlighted by the World Economic Forum's prediction of a sharp increase in AI and machine learning jobs.

Review of Literature:

- This literature review synthesizes recent research on Artificial Intelligence (AI) and its role in advancing India's development goals, with a focus on studies published from 2023 onwards. The selected papers provide insights into AI's applications across various sectors, including digital governance, education, agriculture, and public welfare, and discuss its implications for economic growth and workforce readiness.
- s.Kumar (2023) explores the transformative impact of AI on government services globally, with a specific focus on digital governance initiatives in emerging economies. The paper highlights case studies from various countries, including India, showcasing how AI technologies like automated document processing and predictive analytics are streamlining public services and improving efficiency. The study provides a framework for evaluating the effectiveness of AI in digital governance, emphasizing the importance of data security and citizen trust.
- Patel (2023) investigates the application of AI in education, focusing on how intelligent systems are personalizing learning experiences. The paper discusses AI-powered platforms that provide adaptive learning, real-time feedback, and language translation. Patel argues that these technologies can bridge educational gaps by catering to diverse learning needs and promoting inclusivity, especially in multilingual and remote settings. The study also highlights the challenges of implementing AI in education, such as data privacy and the digital divide.
- Sharma (2023) examines how AI can address educational disparities in developing countries, with a particular emphasis on India. The paper presents evidence from AI-driven educational interventions that have improved access to quality education for marginalized communities. Sharma discusses the potential of AI to facilitate remote learning and provide personalized educational resources, thus supporting the development of human capital and reducing inequalities.
- s. Gupta (2023) reviews recent advancements in AI technologies applied to agriculture. The paper highlights various AI tools, including predictive analytics for crop management, automated farming equipment, and AI-driven advisory services for farmers. Gupta emphasizes the role of these technologies in enhancing agricultural productivity, optimizing resource use, and supporting sustainable farming practices. The study also addresses the challenges faced by farmers in adopting AI solutions, such as cost and technical expertise.

Objectives:

- To Analyze the Current Ai Applications In Key Sectors
- To Explain AI-Based Government Initiatives
- To Analyze Future of AI IN VIKSIT BHARAT

Current AI Applications in Key Sectors

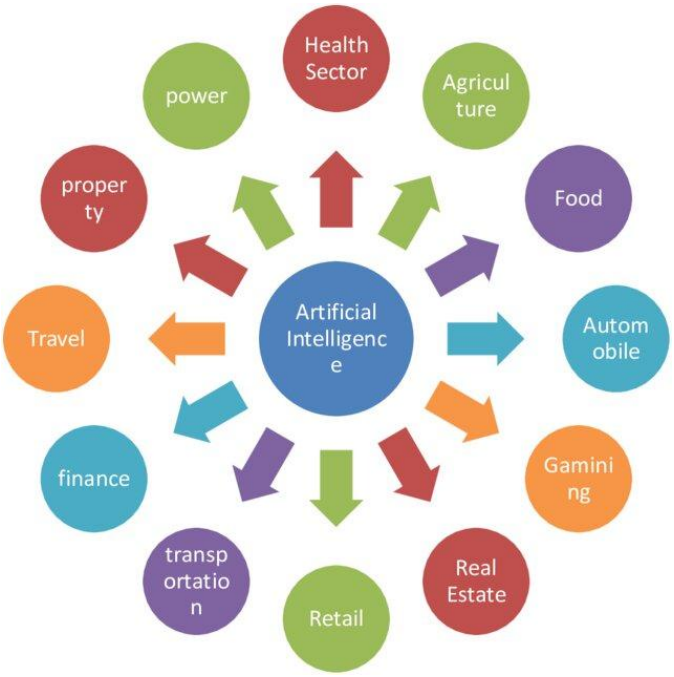
Digital Management

The Digiyatra project is a prime example of how AI is helping to modernize the aviation industry by facilitating paperless and effective passenger processing, which saves money and cuts down on delays.

Learning

By removing linguistic and geographic barriers, AI improves educational accessibility through platforms that provide personalized learning and real-time translation. This helps students save money and manage urban resources. According to Hamilton, I., & Swanston, B. (2023), artificial intelligence (AI) has many educational advantages and is revolutionizing the educational process for students, teachers, and institutions. Here are a few of the main benefits:

- Adaptive Learning: AI-based platforms can assess a student's strengths and weaknesses in real time, adjusting the content or providing additional resources to enhance understanding.
- Automated Grading and Administrative Tasks:: AI can automatically grade multiple-choice tests, essays, and assignments, freeing up time for teachers to focus on more creative or interpersonal aspects of teaching. AI helps with managing student data, attendance tracking, and scheduling, reducing the administrative workload for educators and institutions.
- Enhanced Tutoring and Support: Virtual AI tutors can offer assistance to students outside of classroom hours, providing explanations, answering questions, and guiding learning, especially in areas where a student might struggle.
- Improved Accessibility: AI tools can provide solutions for students with special needs, offering text-tospeech, speech-to-text, and other assistive technologies.AI can translate educational content into multiple languages, helping non-native speakers access quality education.
- Interactive education games: AI can power interactive simulations and games, making learning more engaging and fun. AI integrates with VR and AR to provide immersive educational experiences, such a s virtual lab experiments or historical tours.
- Massive Open Online Courses (MOOCs): AI can scale personalized learning across large student populations, making education more accessible globally.
- Reducing Human: AI systems can provide unbiased grading and feedback, reducing potential bias from human educators. AI can curate content from a variety of perspectives and sources, promoting a more holistic understanding of subjects.



Farming:

KissanGPT is a prime example of how artificial intelligence (AI) can revolutionize agriculture by providing farmers with crucial information, increasing productivity, and closing information gaps in rural areas. A month after its debut, Desai showed that Kissan GPT had answered more than 30,000 voice-based questions about agriculture, generating interest from over seven prospective customers who wanted to incorporate its API into their systems. He also asked professors at agricultural universities for their opinions, and they were impressed with the outcomes. In one case, they concentrated on a particular type of mango from Rajasthan and were pleased with how precisely the AI recognized it and gave reliable data. As Desai pointed out, this fruitful experience inspired them to include AI in their studies for a more comprehensive agricultural perspective.

Public Welfare:

AI applications for public welfare, such as PolicyGPT and BharatGPT, increase information and service accessibility, enabling the general public to better comprehend and act upon complex policies and a variety of data.The India's first indigenous Chat GPT has been launched by the BharatGPT group, a significant consortium led by the Indian Institute of Technology (IIT) Bombay and seven other IITs and backed by Reliance Industries Limited (RIL). By March 2024, this AI chatbot with generative AI capabilities should be available [19] EquityPandit (2023).

AI-Based Government Initiatives

To make India a developed nation, the Indian government has taken numerous steps to apply and use AI.The following are a few of the initiatives:

Pradhan Mantri Garib Kalyan Anna Yojana

This scheme utilized AI to optimize resource allocation and beneficiary needs assessment during the COVID-19 pandemic, demonstrating AI's capacity to enhance public welfare systems

One Nation One Ration Card

Under this program, AI's analysis of mobility patterns made sure migrant workers had access to food.

National Artificial Intelligence Portal (INDIAai)

INDIAai serves as a central hub for AI-related information, promoting research, development, and collaboration across sectors. It provides resources, updates on projects, and insights into AI policies.

AI Research and Development:

The government supports AI research through institutions like the National Institute of Electronics and Information Technology (NIELIT) and the Indian Institutes of Technology (IITs), encouraging advancements and applications in various fields.

AI for All Initiatives:

These initiatives include efforts to integrate AI into public services and welfare schemes, enhancing efficiency in areas like resource distribution, fraud detection, and policy-making.

Future of AI in Viksit Bharat

As India aims to become a developed nation by 2047, Artificial Intelligence (AI) is poised to play a pivotal role in accelerating this transformation. AI's integration into various sectors, including governance, education, agriculture, and public welfare, offers significant opportunities for economic growth and enhanced public services. Prime Minister Narendra Modi has highlighted AI's potential to significantly contribute to India's economic development, and current applications such as Digiyatra and KissanGPT illustrate AI's benefits in streamlining processes and improving services.Despite its potential, AI also presents challenges that need addressing. Key among these is bridging the skill gap in the workforce to ensure that individuals are equipped for the AI-driven job market. Effective education and training programs will be crucial in preparing a workforce capable of leveraging AI technologies.Looking ahead, several areas will shape AI's future role in India:

Economic Growth: By boosting productivity and encouraging innovation, AI has the potential to significantly boost the economy. Its incorporation into different industries is probably going to result in the creation of new jobs and business opportunities, which will help India's economy grow. Education and Skill Development: It is crucial to close the skill gap by providing focused instruction and training. The benefits of AI will be fully realized and people will be able to adjust to the demands of new technology if a skilled workforce is developed. Inclusive Development: AI can help close gaps in public services and education, especially for marginalized communities. For equitable development, putting AI solutions that support inclusivity into practice will be essential. Ethical and Regulatory Frameworks: To address concerns like algorithmic bias and data privacy and ensure responsible AI use, it will be critical to establish ethical guidelines and regulatory frameworks.

Conclusion

In conclusion, India can successfully move closer to its 2047 vision and promote inclusive and sustainable growth by strategically utilizing AI and coordinating its applications with national development goals. AI has enormous potential to improve India's social progress, healthcare, and educational systems. AI has the potential to enhance diagnosis, forecast disease trends, and customize care in the medical field. It aids in fraud detection, resource allocation optimization, and policy decision-making for social development. AI in education facilitates individualized learning, helps students with tutoring, and expedites administrative duties. With programs like the Digital India Program and a National AI Strategy, the Indian government is promoting AI with the goal of integrating it into a variety of services and promoting progress. India can make great strides in these important areas by utilizing AI's potential.

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