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Artificial Intelligence in India: A Systematic review on its Potential and Challenges in India

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A B S T R A C T

In India, the adoption of Artificial Intelligence(AI) has been growing rapidly. According to a December 2021 report by Mckinsey Analytics found that India is one of the leading adopter countries in the world. The Technologies based on Artificial Intelligence (AI) reduce human labor and make the working process much more efficient and effective with zero or less prone to error. AI system analyzes and understands the information collected using inference engines and Natural Language Processing systems. These technologies act with a higher level of intelligence and emulate the human capability of senses, ability to comprehend, and act. AI has the potential to give an effective push or an incremental value to different sectors like Healthcare, Agriculture, Smart Cities, Manufacturing, Energy, Smart Mobility, Retail, Education, and Skill. In India, different research centers have been opened to give better knowledge about Artificial Intelligence and for its better implementation in India. It is observed that if Artificial Intelligence is implemented in a better way in India then it has the potential to add an incremental value to the Indian economy. This paper will cover an overview of the potential of Artificial Intelligence in different sectors and its challenges in India.

Keywords:Artificial Intelligence;Technologies; Efficiency;Machine Learning, AI.

1.Introduction

Artificial Intelligence is the capability of a robot or a Computer-controlled by a computer that is controlled by human beings to do tasks that are usually done by humans. It makes machines perform tasks like human beings. This technology has not only increased the working speed but also reduced the human burden of workload. Now the work can be done in a single click.AI has greater potential in different sectors like Healthcare, Agriculture, Smart Cities, Manufacturing, Energy, Smart Mobility, Retail, and Education.

SIMBA software for identifying Gir / Asiatic lions by Hyderabad start-up company. It is an artificial intelligence (AI) based photo-identification software, specifically designed to distinguish among Asiatic lions- by giving them individual identities. So, when Forest-CCTV/Drone takes photos of lions, it prevents duplication of counting during the survey/census of lions.

SUPREME COURT Justice DY Chandrachud has proposed the use of Artificial Intelligence (AI) algorithms for better prediction of the outcomes of various types of cases like motor accident claims and land acquisition-related cases. It can also be used in advanced cases line online dispute resolution, detection of divergent or incompatible contractual clauses, and assistance in typing/drafting needs. AI technology has been adopted in the virtual courts by 12 states for traffic challans. The challenge with this is that AI-generated outcomes can possibly become biased if a large amount of set favors a particular outcome. So, for the efficient and effective results of the technology, a healthy balance between the use of technology and human intervention should be maintained.
Chatbots for informing the litigants or for supporting them in their legal proceedings.
Gujarat high court has launched " justice Clock " which is a digital dashboard to track case tendencies.

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In the South Korean election, the Deepfake technique is employed within the election campaign. Deepfakes square measure artificial media/ video/audio / holographic pictures during which an individual in associate degree existing video or image is replaced with somebody else's likeness. It is way additional realistic and advanced than previous strategies of morphing and Photoshopping. Deepfakes provide powerful strategies or techniques from machine learning and AI to get audio and visual content with a high level of realism in it. South Korea's situation candidate Yoon Suk-year's campaign team has deployed AI Yoon, a digital character that appears like Yoon. human Yoon recorded his voice and provided pictures for the creation of the digital avatar and its responses square measure provided by campaign employees. AI-version is younger, has an additional cool dressing, and talks abrasively like Donald Trump thus, the AI Yoon avatar is reportedly massively fashionable for young South Koreans. within the South Korean election campaign- "deepfakes" like AI Yoon square measure allowed as long as they're disclosed as being digital creations, don't incite violence, and don't lie or unfold "fake news". The Challenges with this are:

1)politicians World Health Organization doesn't have enough cash for access to technology to make smart-dashing-cool versions of AI might not be ready to win the election if the larger chunk of voters is children with digital property. thus considering these challenges is it shouldn't be allowed in India however.

2) AI-versions act on knowledge aggregation of social media/likes. thus if the AI version 'learns' that children wish to mention PUBG and Arijit Singh, he might begin talking concerning it, rather than impoverishment state, and equality → , and also the younger generation (who has not gone to high school for 2 years, and living as Digital device Zombies) might choose favor. it'll undermine the democratic discourse of election.

3) AI may gift the information in a colored manner to incite emotion between immigrants and domiciles. Politicians may continually Escape by blaming it on the programmer.

Countries around the world are increasingly becoming aware of the social and economic benefits of AI.

India is creating National methods for the simplest utilization of the advantages of AI that is ready by NITI Aayog to harness its power.

The four-tier framework has been instructed by IM-ICPS (knowledge domain Cyber-Physical Systems) for the promotion of AI analysis in India:-

(1) ICON ((International Centres of New Knowledge)

(2) CROSS ((Centre for Research On Sub-Systems):

(3) CASTLE ((Center for Advanced Studies, Translational research and Leadership): specializing in the event and preparation of application-based analysis

(4) CETIT (Center of Excellence in Technology Innovation and Transfers)

For boosting each cores and applied analysis in AI, a two-tier integrated approach has been proposed:-

(1)International Centre for Transformational Artificial Intelligence (ICTAI): It can provide the scheme for the application-based technology development and preparation, and withstand the mantle for executing the responsibilities of each CETIT and CASTLE in line with the IM-ICPS framework.

(2) Centres of Research Excellence in Artificial Intelligence (COREs) : It'll concentrate on the core analysis of AI, and withstand the mantle of corporal punishment the responsibilities of each CROSS and ICON in line with the IM-ICPS framework.

2.Literature Review

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NITI Ayog has joined hands with google in 2018 to push the expansion of computing and a machine learning scheme in Asian nation|Bharat|Asian country|Asian nation}|Bharat|Asian country|Asian nation} google has been tasked with coaching and incubating indian computing startups however what's computing it has been a desirable conception of science for many years however solely currently have scientists been able to develop laptop systems can|that may} perform human-like tasks these tasks vary from speech recognition translation into totally different languages perception and even creating|deciding|higher cognitive process} in today's edition of in-depth let's understand however computing works what's its relevancy and edges in our lives and the way will it impact our lives within the future therefore as we tend to India has joined hands with school large google to stay pace with different countries that area unit moving towards adopting computing NITI ayog has partnered with google to figure on a spread of initiatives to create computing scheme across India the target is to enhance capability in health care improve education and additionally build overall economic productivity of the country from the first days of human civilization efforts are created to exchange human hands with machines human civilization ne'er looked back since the day it started moving towards making life easier and easier by incorporating a lot of machines into our daily lives individuals started trying to find one thing over simply machines one thing that may simply browse the human mind and do the specified work similar to a gin WHO fulfills needs and with time individuals began to suppose that they'll fulfill all their concepts through science humans have worked indefatigably within the field of science and technology to create a machine or automaton that will the work typically done by humans and may additionally suppose like one this is often computing.

Intelligence is our ability to require variables from our senses whether or not it's bit whether or not it's smell sight hearing or alternative|the other} sense and that we use that in our brain to method bound selections computer science is is {analogous|is comparable} to however a machine would do that thus usually a synthetic intelligence system can have receptors or devices through that {it can|it'll} choose knowledge from its atmosphere uh {it can|it'll} have a memory of what to try and do looking on what signal it gets and so {it can|it'll} take a choice which canble to} communicate completely different} device supported the memory it had and also the sensor input that it got many countries have developed their own computer science and currently Asian nation|Bharat|Asian country|Asian nation} and google have signed a press release of intent to figure on a variety of initiatives to assist build the AI scheme across the country the Bharatn government has entrusted its company NITI ayog to line up a national program to conduct analysis and development in

leading technologies like AI and machine learning India will use ai technologies to make higher health care improve education outcomes develop innovative governance systems and improve overall economic productivity NITI ayog that is a premier designing institute for the indian government has done a partnership with world leader in technology that is google to market the difficulty of computer science currently heaps of factors will emanate out of this partnership one is in terms of promoting phds doctorals add computer science particularly in our premier establishments like IIT and other establishments of importance the opposite thing that is even a lot of vital is that this agreement and this partnership will foster an atmosphere wherever entrepreneurs particularly our startups that area unit allied to the arena of computer science are promoted google will bring its on-line coaching courses like google's machine learning trash course to students graduates and engineers to different cities across india within the type of study teams and developer run courses.There is associate incubation program whereby startups operating with Machine Learning area are mentored by google to raised leverage AI in their various business models.NITI Ayog associated google can organize an aiml hackathon that may concentrate on resolution key challenges in agriculture, education, healthcare, money inclusion and transportation and quality.The IT ministry has fashioned four AI committees citizen-centric services knowledge platforms skilling re-skilling and legal regulative and cyber security in step with data and technology. Minister Ravishankar Prasad these committees would be headed by IT administrators and business consultants from organizations like nasscom. it absolutely was in 2018 year's budget that union minister of finance Arun Jaitley same niti ayog can started a national program to conduct analysis and development in frontier technologies like AI bureau.

Artificial intelligence describes the action of machines accomplishing tasks that have traditionally needed human intelligence. The origin of the idea will be copied back to classical mythology though it's throughout trendy history once keep program electronic computers were developed during this report let's analyze what AI systems square measure and the way do they work.Facebook encompasses a list of advised friends for its users however does one apprehend United Nations agency makes these suggestions whereas browsing on the net a page pops au courant your screen telling you regarding AN forthcoming sale on your favorite complete of shoes and garments ever thought who's keeping track of your favorite brands all this is often the work of computer science.These days mobile phones like apple have virtual assistants like siri that support a good vary of user commands. legion algorithms and codes exist all around you understanding your commands and playacting human-like tasks this is often the globe of computer science .The ability of a machine or a computer virus to suppose and learn the idea of computer science is predicated on the concept of building machines capable of thinking acting and learning like humans.

From apple's siri to self-driving cars computer science is progressing chop-chop. fantasy typically portrays robots with human-like characteristics.

A laptop will beat the globe chess champion and perceive voice commands on your smartphone however that is not real computer science. computer science will be gift in something from google search algorithms to ibm's watson to autonomous weapons.It is completely different from hardware driven robotic automation.

Instead of automating manual tasks computer science performs frequent high volume computerised tasks dependably and while not fatigue.However for this kind of automation human inquiry continues to be essential to line up the system and raise the correct queries. computer science is usually misunderstood for machine learning.Artificial intelligence could be a broader idea with a bunch of technologies that embody machine learning and alternativetechnologies like linguistic communication process abstract thought algorithms neutral networks etc.

Healthcare like eye care internal organ surgeries have gone up many fold due to computer science.

Now computer science is incredibly advanced .Earlier we have a tendency to were making an attempt to induce computers to play Chess, that was terribly tough to try and do in those days. currently in fact, laptop will beat anybody in Chess. Future world are going to be completely different from the current one,it will be far more advanced and technology dependent. Most of the roles nowadays, most of the industries wherever folks square measure operating nowadays didn't exist fifty years past.At that point there was no huge marketplace for IT, IT Technology, Internet…Telecommunication terribly tiny , industry terribly tiny time at that point.So, most of the fields during which folks have jobs nowadays didn't exist fifty years past. So, rate of modification is increasing quick. What happened in last fifty years can happen within the next twenty years,which means that if you are twenty or twenty-five, by the time you are forty-five,most jobs that exist nowadays won't exist. this is often terribly stunning.You have to find out to re-invent yourself each twenty years as a result of in twenty years, most of the careers won't exist. In fact, I will tell you, computer science specialists, by and huge, agree that at intervals twenty years to 25 years,ninety per cent of today's work are going to be done by computers. this is often terribly surprising, terribly beautiful. you recognize things happening terribly fast: from driverless cars to drones,they are reaching to do all these items for you. So, if overwhelming majority of jobs that folks have which you think that you'd prefer to have, won't exist. So,due to the expansion of the machine-driven systems ,there is the possibilities of individuals falling into the idle section if they are doing not update themselves with the time.

3.Conclusion:

India could seem to be comparatively well positioned to require advantage of the AI disruption by virtue of its advanced IT sector and enormous youth demographic potential to ascertain itself because of the future hub for AI-connected activities. However, given the poor availability of qualified schools and researchers, this advantage may quickly remodel into a liability while not imperative government interventions towards promoting access to such skills. this is often a vital component of AI development and maybe a national priority. Now in India bright and promising future for AI can be seen. Artificial Intelligence based technology not only makes the work easy but also increases its speed of working. Artificial Intelligence-based technology allows human beings to use their energy to work in the direction of improving capital efficiency, AI releases them from labor work.

4.Future Work

By 2035 it is expected that AI has the possibility to add $957 billion or 15 percent of present Gross value to the Indian Economy. If with proper planning and strategy Artificial Intelligence based technology is used in India then it will have an incremental effect on the growth of India . High value and low accessibility of computing infrastructure needed for development, coaching, and deployment of AI-based mostly services. Cloud infrastructure, although growing apace, has restricted capability. Lack of infrastructure has light-emitting diode to several Indian AI startups to include their business outside the country, which makes AI outside the reach of Indian researchers in government labs and lots of industries. Initiatives like GI Cloud (MeghRaj), square measure in the right direction.

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