

Emerging Issues and Challenges in Indian Banking Sector: With Special Reference to Artificial Intelligence

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ABSTRACT

Man-made consciousness (AI) is quick creating innovation for over the world. The financial segment is getting one of the primary adopters of Artificial Intelligence. Artificial Intelligence aka machine language learns about human and human interactions through various means and interaction points. Real time analysis can be done with help of Artificial Intelligence. Banks are investigating and executing innovation in many new different manners. Computerized reasoning is improving and more brilliant step by step every day. Right now, we will talk about how Artificial Intelligence is utilized in the Indian financial area, what are the advantages and what are the Challenges confronting India's Artificial Intelligence. Advancement that Artificial Intelligence offers to FinTech and the various manners by which it can improve the activities of an Indian financial area. Fake Super Intelligence alludes to insight route more intelligent than people. Further this paper is descriptive in nature and based on secondary data.

Keywords: Artificial intelligence; Banking area; Finance area.

1.0 Introduction

Man-made reasoning (AI) is quick developing as the go-to innovation for organizations over the world to customize understanding for people. The innovation itself is improving and more intelligent step by step, permitting more and more up to date businesses to embrace the AI for different applications. Banking area is getting one of the principal adopters of AI. Furthermore, much the same as different fragments, banks are investigating and executing the innovation in different manners.

The simple applications AI incorporate bring more astute talk bots for client support, customizing administrations for people, and in any event, putting an AI robot for self-administration at banks. Past these fundamental applications, banks can actualize the innovation for acquiring more productivity to their back-office and even diminish misrepresentation and security dangers.

Obviously, look into firms are bullish on the capability of AI in banking. As indicated by Fintech India report by PwC in 2017, the worldwide spending in AI applications contacted \$5.1 billion, up from \$4 billion of every 2015. There is an unmistakable fascination for the Indian financial segment as well.¹

2.0 Objectives

- To study the Various areas where the artificial intelligence is being used by the banks.
- To study the issues and challenges faced by Indian banking sector for the application of Artificial intelligence.

Scope: The Study covers the mechanical advancements in Indian financial area as it were.

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3.0 Methodology

The study is descriptive in nature and is based on secondary data. The data are collected from various reports, journals, news articles, various bank portals, RBI portal and internet sources.

The Study is Conceptual in nature and depends on secondary data. The information are gathered from different reports, diaries, news stories, different bank entries, RBI gateway and web sources.

3.1 What is artificial intelligence?

As per the dad of Artificial Intelligence, John McCarthy, it is —The science and designing of making smart machines, particularly canny PC programs.

Computerized reasoning is a method for making a PC, a PC controlled robot, or a product think keenly, in the comparative way the shrewd people think.

Computer based intelligence is cultivated by considering how human mind thinks and how people learn, choose, and work while attempting to tackle an issue, and afterward utilizing the results of this investigation as a premise of creating insightful programming and frameworks.

3.2 Artificial intelligence overview

Artificial intelligence alludes to _Artificial Intelligence_ which implies making machines equipped for performing clever assignments like individuals. Artificial intelligence performs computerized assignments utilizing knowledge. The term Artificial Intelligence has two key segments:

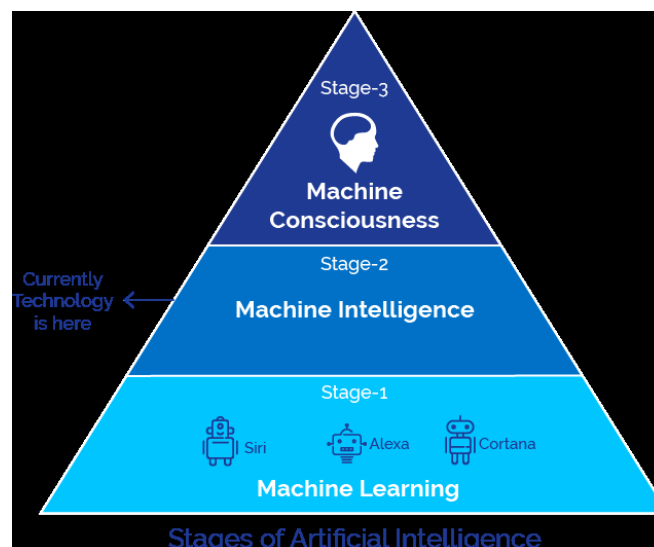
1. Automation
2. Intelligence

3.3 Stages of artificial intelligence

Stage 1: Machine Learning: It is a set of algorithms used by intelligent systems to learn from experience.

Stage 2: Machine Intelligence: These are the advanced set of algorithms used by machines to learn from experience. E.g. Deep Neural Networks. Artificial Intelligence technology is currently at this stage

Stage 3: Machine Consciousness: It is self-learning from experience without the need of external data.



Sources : <https://www.upwork.com>

3.4 Difference between Nlp, AI, ML, DL & Nn

Simulated intelligence or Artificial Intelligence

Building frameworks that can do canny things.

NLP or Natural Language Processing

Building frameworks that can get language. It is a subset of Artificial Intelligence.

ML or Machine Learning

Building frameworks that can gain as a matter of fact. It is likewise a subset of Artificial Intelligence.

NN or Neural Network

Naturally enlivened system of Artificial Neurons.

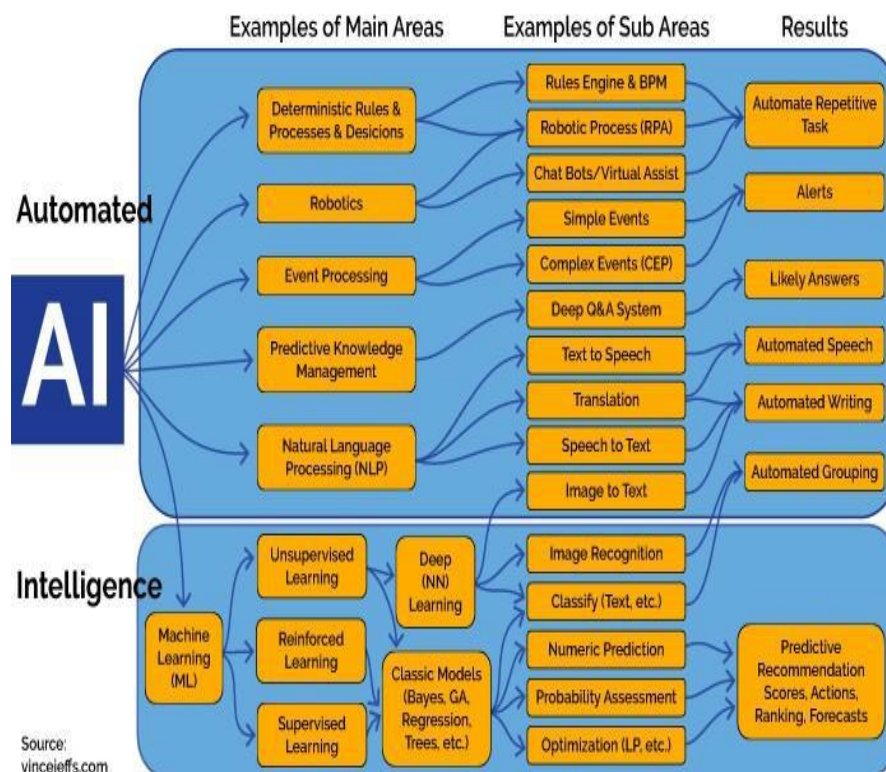
DL or Deep Learning: Building frameworks that utilization Deep Neural Network on an enormous arrangement of information. It is a subset of Machine Learning

3.5 Types of artificial intelligence

ANI – Artificial narrow intelligence: It includes fundamental/job errands, for example, those performed by chatbots, individual colleagues like SIRI by Apple and Alexa by Amazon.

AGI – Artificial general intelligence: Fake General Intelligence contains human-level errands, for example, performed independent from anyone else driving autos by Uber, Autopilot by Tesla. It includes ceaseless learning by the machines.

ASI – Artificial super intelligence: Fake Super Intelligence alludes to insight route more intelligent than people.



Sources: "Artificial Intelligence – https://www.sas.com/en_us/insights/analytics/what-is-artificial-intelligence.html. Accessed 19 Dec. 2018.

4.0 Background of Artificial Intelligence

The term artificial intelligence was coined in 1956, but AI has become more popular today thanks to increased data volumes, advanced algorithms, and improvements in computing power and storage.

Early AI research in the 1950s explored topics like problem solving and symbolic methods. In the 1960s, the US Department of Defense took interest in this type of work and began training computers to mimic basic human reasoning. For example, the Defense Advanced Research Projects Agency (DARPA) completed street mapping projects in the 1970s. And DARPA produced intelligent personal assistants in 2003, long before Siri, Alexa or Cortana were household names.

This early work paved the way for the automation and formal reasoning that we see in computers today, including decision support systems and smart search systems that can be designed to complement and augment human abilities.

While Hollywood movies and science fiction novels depict AI as human-like robots that take over the world, the current evolution of AI technologies isn't that scary – or quite that smart. Instead, AI has evolved to provide many specific benefits in every industry. Keep reading for modern examples of artificial intelligence in healthcare, retail and more.

5.0 Artificial Intelligence Industry in India – Present Scenario

A news report distributed in October in The Economic Times stated, —Start-ups observer 108% development in financing in India in 2018. The news report additionally referenced that Artificial Intelligence was among those areas which saw quickest appropriation among industry segments. Right now there are around 400 new companies taking a shot at AI and AI spaces. About \$150 million dollars is put resources into India's AI division by private players alone and the number has been developing since 2016. Despite the fact that there has been development, India lingers a long ways behind nations like US and China as far as speculation. With an extensive pool of STEM ability and with developing populace of adolescents, India will count on AI for its financial development and improvement in personal satisfaction of its residents.

There are a few new businesses that are situated in urban communities, for example, Bengaluru, New Delhi, Mumbai and Hyderabad which take a shot at man-made brainpower standards to serve shoppers better. Their item extend fluctuate from multi-lingual talk bots to internet shopping help and robotized buyer information examination. The organizations have been working in regions, for example, web based business, social insurance, edtech, fintech and so forth. In spite of the fact that in their early stage, the exhibition of these organizations have been promising.

6.0 Indian Banks and the Technology

The balanced approach followed by Indian central bank, Reserve Bank of India, is another major factor in any new technology adoption in Indian banking sector. In the last few years—especially during the governorship of Raghuram Rajan and his successor Urjit Patel—RBI has taken a cautious but pragmatic view of embracing new technologies, often forcing technology adoption on banks through regulation, wherever it has seen scope to enhance customer experience and efficiency using a particular technology. RBI's proactive push of new technology adoption has not just been restricted to creating policy frameworks. It has used a mix of regulation, evangelism and even worked with the industry to make things easier and effective.

The creation of National Payment Corporation of India (NPCI) which has significantly brought down the cost of electronic transactions is a case in point. The regulator also has an

academic/research unit, Institute of Development and Research in Banking Technology (IDRBT) which keeps studying the opportunities and challenges in new technology areas. It is not a coincidence that both these units have been actively involved in testing out blockchain as a proof of concept.

India's position is quite unique here. It is a fact that India is a tech-hub. Apart from being a large technology outsourcing destination, India is also the home to vendors with a large core banking market share globally. Two of the top three core banking solution vendors—Infosys and TCS—are headquartered in India. Of late, India has also seen a lot of activity in the fintech arena. The country has become one of the global fintech hubs. While in many developed markets, fintechs and banks have enjoyed an uneasy relationship, in India, most progressive banks like ICICI Bank, Axis Bank and HDFC Bank have proactively gone to fintechs, creating contests and hackathons to get the best of innovations, sometimes even sharing their APIs with these fintechs.

Bank Chain was announced on 8 February 2017 by SBI, India's largest bank. It's a 30+ member consortium led by SBI, the country's largest lender, and includes banks, NBFCs and the National Payments Corporation of India (NPCI), an organization set up by Indian banks to support retail payments. Simply put, Bank Chain is a community of banks for exploring, building and implementing blockchain solutions. Bank Chain is supported by Pune-based startup Primechain Technologies to create these solutions. Currently, it has 37 members and 8 live projects.

7.0 Artificial Intelligence Technology in Banking And Finance

Personalized Financial Services: Personalized connect will reach new heights as automated financial advisors and planners provide expertise in making financial decisions. They analyse market temperament against the user's financial goals and personal portfolio, and offer recommendation regarding stocks and bonds.

Smart Wallets: Advanced wallets are touted as the eventual fate of true installment innovations, with significant players like Google, Apple, Paypal and others, getting on board with the temporary fad and building up their own installment passages. This declines the reliance on physical money, in this manner growing the compass of cash to more prominent levels.

Underwriting: The insurance sector is also coming up with a storm as they are moving towards congruent automation. By utilizing AI systems that automate the underwriting process, the organizations come armed with more granular information to empower their decisions.

Voice Assisted Banking: Physical presence is slowly fading away as technology empowers customers to use banking services with voice commands and touch screens. The natural language technology can process queries to answer questions, find information, and connect users with various banking services. This reduces human error, systemizing the efficiency.

Physical nearness is gradually blurring endlessly as innovation enables clients to utilize banking administrations with voice directions and contact screens. The normal language innovation can process inquiries to address questions, discover data, and interface clients with different financial administrations. This decreases human blunder, systemizing the proficiency.

8.0 Data-driven AI applications for lending decisions

Applications installed in end-client gadgets, individual robots, and money related establishment servers are fit for examining a colossal volume of information, giving altered monetary counsel, figuring and estimates. These applications can likewise create budgetary plans and techniques through research, with respect to different modified speculation openings, advances, rates, expenses, and so on and track the advancement.

Customer support: As discourse preparing and characteristic language preparing innovations develop, we are moving nearer to the day, when PCs could deal with most client care questions. This would check a conclusion to holding up in line and subsequently bring about more joyful clients.

Digitalization instead of branch lines: Banking is an extensive procedure, with past records of long lines and drowsy reaction damaging the efficiency. In any event, opening a financial balance was seen in negative terms as harried customers would run column to post, while getting the fundamental documentation complete. Digitization of documentation facilitates that agony and makes an exhaustive stage, where the shoppers and suppliers associate.

Blockchain hastening payments: The client base that banks serve is experiencing a significant move as far as purchasing practices and inclinations, driven by the computerized upheaval, especially web based life and versatile. An expanded interest for increasingly decision and control by the way they associate with a bank is on an ascent. Slow installment procedures will be a relic of days gone by as Blockchain is set to install the upside of constant installment process, rushing up the system of installment, in this manner expanding backing and fulfillment.

Artificial Intelligence Banking In India: As indicated by PwC FinTech Trends Report (India) 2017, worldwide interest in AI applications contacted USD 5.1 billion (Euro 4.3 billion) in 2016. PNB as well as banks prefer SBI, HDFC, ICICI, HSBC and Axis banks in India have turned towards AI.

State Bank of India (SBI): SBI propelled a national hackathon called ‘Code For Bank’ for engineers, new businesses and understudies to concoct inventive thoughts and answers for banking part that spotlights on advances, for example, prescient investigation, fintech/blockchain, computerized installments, IoT, AI, AI, BOTS and mechanical procedure computerization. The bank is as of now utilizing an AI-based arrangement created by Chapdex (the triumphant group from its first hackathon), that catches the outward appearances of the clients and encourages them in understanding the conduct of its clients.

HDFC Bank: HDFC bank has built up an AI-based chatbot called ‘Eva’ (Electronic Virtual Assistance), worked by Bengaluru-based Senseforth that has tended to over 2.7 million client inquiries, associated with more than 530,000 exceptional clients, and held 1.2 million discussions. The gadget can give answers in under 0.4 seconds and has in the initial hardly any days of its dispatch addressed in excess of 100,000 questions from a large number of clients from 17 nations. The bank is likewise trying different things with in-store automated applications called IRA (Intelligent Robotic Assistant).

ICICI Bank: ICICI bank has conveyed programming mechanical technology in more than 200 business forms across different elements of the organization. Considering it the mechanical programming the bank claims it to be the first in the nation and among not many on the planet to send this innovation, that copies human activities to mechanize and perform tedious, high volume and tedious business assignments.

Axis Bank: Axis Bank as of late propelled an AI and NLP (Natural Language Processing) empowered application for conversational banking, to assist purchasers with monetary and non-money related exchanges, answer FAQs and connect with the bank for advances.

9.0 The Challenges Facing India’s Ai Development

- Computer based intelligence based applications to date have been driven generally by the private part and have been centered basically in shopper products. The rising scale and ramifications of the innovation make it basic for policymakers in government to pay heed.

- Early exercises of AI accomplishment in the United States, China, South Korea, and somewhere else offer open and private subsidizing models for AI investigate that India ought to consider.
- The consecutive arrangement of training and work is obsolete in the present financial condition as the idea of occupations moves quickly and abilities become important and outdated in merely years.

10.0 Benefits of AI for banking sector fraud detection: Advantages

Anomaly detection can be used to increase the accuracy of credit card fraud detection and anti-money laundering.

Customer Support and Helpdesk: Humanoid Chatbot interfaces can be used to increase efficiency and reduce cost for customer interactions.

Risk Management: Custom-made items can be offered to customers by taking a gander at recorded information, doing hazard examination, and disposing of human blunders from hand-created models.

Security: Suspicious conduct, logs investigation, and misleading messages can be found to forestall and conceivably foresee security ruptures.

Digitization and automation in back-office processing: Capturing documents data using OCR and then using machine learning/AI to generate insights from the text data can greatly cut down back-office processing times.

Wealth management for masses: Personalized portfolios can be managed by Bot Advisors for clients by taking into account lifestyle, appetite for risk, expected returns on investment, etc.

ATMs: Image/face recognition using real-time camera images and advanced AI techniques such as deep learning can be used at ATMs to detect and prevent frauds/crimes.

11.0 Conclusion

Artificial intelligence has many benefits to offer for the banking sector. Artificial intelligence is changing business processes and customer-facing services in the banking sector in India. It is also being used to meet regulatory compliance, detect fraud, and assess individual creditworthiness. The application of AI has the potential to create more efficient business processes, offer personalized services, and assist in larger goals such as financial inclusion. There is no doubt that the recent push towards digitalization is rapidly influencing the traditional banking models. However, it has also exposed the institutions to increasing cyber security threats and vulnerabilities. The banks are increasingly looking at emerging technologies such as block chain and analytics in creating an active defense mechanism against cybercrimes.

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