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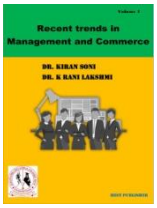

A Study on Artificial Intelligence in Finance sector

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Abstract: A significant technological advancement is artificial intelligence (AI), which also encompasses machine learning (ML) and algorithmic language. It is well-liked in a wide range of industries, including robotics, gaming, healthcare, banking, surveillance, entertainment, space exploration, agriculture, e-commerce, and social media. Its goal is to create an independent, intelligent system. With a brief overview, our study focuses on the applications of artificial intelligence in the finance sectors (banking, insurance businesses, and investment organizations). The report outlines difficulties and their effects on the financial sectors' benefits and drawbacks. The study offers several recommendations and also shows how artificial intelligence will impact the financial industry in the future.

Keywords: Artificial Intelligence, BFSI, Fintech, Machine learning

1. Introduction

Background of artificial intelligence (AI): Artificial intelligence is becoming popular in several fields in the market today. Algorithm language and machine learning are two examples of the major technological innovations that make up artificial intelligence (AI). The ability of machines (computers) to make intelligent decisions, or figure out what to do, in the context of accomplishing a certain goal, is known as artificial intelligence (AI).

Definition: "Artificial intelligence is making a machine behave in ways that would be called intelligent if a human were behaving so," according to John McCarthy's definition from 1955. A subset of AL called machine learning (ML) focuses on creating models, primarily statistical models that produce analytical outputs. AI is crucial to the financial industry for future predicting, as investors use a variety of techniques to make stock market investments. Techniques for data mining and investment analysis in large quantities of stock data in order to forecast market trends and optimize profits. Because both market and non-market factors have a big impact on the stock market, machine learning is important for the "black box" model prediction, which increases the accuracy of market forecast. Regression algorithms and time series models are utilized in machine learning to construct a prediction model in the performance measure problem. This could lead to an increase in prediction accuracy and financial data analysis.

2. Application of Artificial Intelligence in Finance

1. **Regulatory compliance–detection and prevention fraud:** The likelihood of fraud is growing rapidly along with the rise of e-commerce and online transactions. The anti-fraud system, which detects, reports, and blocks fraudulent transactions, is the foundation of artificial intelligence. Financial and banking organizations utilize Fraud Detection Software, which uses machine learning algorithms to minimize phony declines and use predictive analytics to identify patterns without requiring human analysts to know.
2. **Prediction of Stock Market and Trading system:** Obstacles in the trading system might be caused by many problems. Faster data analysis is made possible by AI systems, which not only identify the root cause of a problem but also offer a workaround. A machine has been trained to predict the best times to trade shares in order to increase profits, minimize losses during ambiguity, and facilitate speedy decision-making for businesses, institutions, and investors.

3. **Increasing security:** Artificial intelligence (AI) machine learning algorithms can identify fraudulent transactions in real-time, not after the crime has been done, in just a few seconds. Many organizations are attempting to improve online transaction security and related services by implementing artificial intelligence.

4. **Risk Management:** A lack of risk management by numerous firms contributed to the subprime mortgage crisis. Conventional software programs solely included financial information and the chosen loan application. However, by using its credit-scoring tasks in a real-world setting, new machine learning technology focuses on every detail associated with the current market trend to avoid financial crime and detect financial crises. It also lessens the risk associated with underwriting. It can assist in managing any risk in the areas of loans, health, mortgages, and life insurance. It also meshes flawlessly with the underwriting assignments that are prevalent in both insurance and finance.

5. **Credit Card and Loan Decisions:** AI automatically evaluates the profile during the credit card and loan decision-making process, greatly reducing the associated costs and work while also ensuring a fair and transparent procedure overall.

6. **Protect Client by Spending Pattern Prediction:** The entire nation currently relies on internet commerce. AI can help detect client spending to stop fraud or theft in the event that their card, mobile device, or account is taken. It authenticates the user and permits the transaction to take place.

7. **Personalized Banking:** AI has a significant role in banking, enabling all online transactions such as deposits and payments, eliminating the need for customers to hurry to the bank. even handle the most of a consumer complaint and offer a user-friendly self-help interface to the clients. In the consumer markets, AI-based virtual assistants such as Google Assistant, Alexa, Echo, and others are already becoming more and more common. It offers the potential consumer genuine counsel so they can obtain precise information and quick fixes for their issues.

8. **Process Automation:** Process automation, which completes tasks in a matter of minutes, is essential for increasing productivity and lowering operating expenses. AI minimizes costs and reduces repetitive tasks performed by humans by more than 50%. With its services, such as call center automation, chatbox (a robot that converses and provides instructions), paperwork automation, etc., process automation efficiently analyzed documentation and identified issues that required human attention.

9. **Security to World financial data:** The two biggest threats in the current world are Trojan horses and worms that resemble viruses. By combining big data capabilities with intelligent pattern analysis, machine learning security solutions can secure the world's financial data, giving them an advantage over conventional and non-AI tools.

10. **Marketing:** Those in the banking industry can also see the importance of AI thanks to predictive marketing analytics that readily analyze prior behavior. It analyzes client expectations to help with accurate sales forecasting. Web activity may be appropriately monitored, and usage of mobile apps can be comprehended to identify patterns and trends.

3. Challenges of Artificial Intelligence

Although AI is employed in every industry, there are a few obstacles to overcome:

- **Difficult to understand:** Understanding machine learning terminology can be challenging. It increases the degree of governance while posing a certain amount of danger. To lessen its complexity, banks must fully inform their customers about the models and supporting data so they can avoid making poor business decisions.

- **Based on data availability and quality:** Big data is the foundation of AI technology, as is well known. Only when a substantial amount of high-quality data is uploaded does it offer trustworthy information. Biases in the data can be hidden even in reliable sources. Data referential problems are common in the financial sector, where it can be difficult to reconcile data from the front to the back. Any large-scale artificial intelligence endeavor must start with a data-quality program in place. Users risk serious losses when this isn't done.

- **Responsibility:** One major issue facing AI is determining who would bear accountability and liability in the event of a mishap. A banker's reasoning thinking may find it unsettling when an algorithm answers a query with a positive or negative result without providing an explanation. This partially defeats the purpose of deploying a machine in the first place because it becomes necessary to retain a

human supervisor to confirm the machine's judgments for critical activities like releasing/blocking payments or validating deals.

- **Fast changing technology:** Due to the rapid advancement of technology, financial organizations need to find ways to put theoretical understandings of artificial intelligence into practical applications for everyday operations. With the correct AI technology, labor-intensive manual procedures can be automated, it can provide the performance required to utilize the newest technologies, it can integrate with active systems, and it can be reused for various purposes.

- **Reliability of AI:** For reasons of security AI's data and level of system control determine how reliable the system is. A dependable system that can stand the test of time requires the methodical but gradual approach of Test Driven Development, which centers evaluation and verification around creating the necessary algorithm.

- **Lack of emotional intelligence:** While AI is capable of detecting fraudulent activity and solving a wide range of specific problems, it is emotionally immature. Chatboxes, for example, are intelligent but not compassionate. They carry out the program's instructions.

- **Regulatory barriers:** AI transparency is essential for success in the highly regulated financial services industry. It is necessary to have a domain expert who can clarify the logic and key data context. Machine learning's capacity to explain its reasoning will be crucial to overcoming regulatory obstacles and winning over people.

- **Tracking measure of success:** AI forecasting does not promise that your investment will result in a profit or a loss; instead, it is based on future prospectuses. Measuring success in terms of how machine learning improves human behavior, lowers costs, or increases efficiencies is difficult. The issues facing financial organizations will also change as AI advances.

4. Future of AI in India With Some Recommendation

The world is changing in the direction of artificial intelligence today. AI is being used by digital giants like Google, Amazon, and Flipkart to create predictive models of customer behavior. The majority of universities have provided a variety of AI courses in the subject of education. By offering robotic advising services, Bitcoin uses artificial intelligence (AI) to gain acceptance in the finance industry. Insurance firms are already well-represented in AI thanks to large data, which allows for individualized recommendations in place of one-on-one financial counseling. Businesses, firms, and investors make significant investments based on AI data since it saves them money and prevents human error. Fintech solutions powered by artificial intelligence are becoming widely adopted by the BFSI (banking, financial services, and insurance) sectors. It's possible that AI will be used much more extensively in the Indian economy by 2035. China and the US have recently risen to the top of the list of nations using AI technology. India, on the other hand, is adopting progressive policies that help create jobs for almost 2 lakh AI specialists and others in a variety of industries, including retail, healthcare, and education. Appropriate training is thought to be the most important component in successfully using technology. The start-up initiative began in 2018, and since then, there has been a significant increase in both social and economic growth. In the near future, AI will be used to follow people on blacklists, manage traffic issues, maintain the condition of roads, handle biometry, etc. The LG firms said in a report dated May 17, 2021, that they would be investing over $100 million over the next three years to build a vast high-performance computing infrastructure for the development of artificial intelligence. LG built state-of-the-art computing facilities with a throughput of 95.7 quadrillion calculations per second. They think AI technologies will be helpful for anything from production development to customer counseling.
Additionally, they intend to apply AI to the creation of environmentally friendly plastics and vaccinations for cancer therapy.

The National Business Research Institute and Narrative Science jointly performed research that found that over 32% of financial services providers use AI technologies for speech recognition, government finance, audit, predictive analytics, and other applications. The following are some thoughts about AI from an industrialist expert: The CEO of a payments platform, Rajeev Agarwal, acknowledges that artificial intelligence (AI) is still in its early phases of development and that in order to fully realize the potential of the technology, it would need a robust digital foundation backed by high-quality data and a trained staff.

5. Conclusion

Experts predicted that AI will soon become an essential aspect of human existence. It fundamentally alters our perspective of reality. It takes minutes to solve a lot of issues. It is possible that AI will lessen human wants, thus we must strike a balance by adapting to these developments. It's important to remember that we did not create the machines; we did. When we utilize it properly, we benefit.

References

[1] M,Kunwar(2019).ArtificialIntelligenceinFinanceUnderstanding:HowAutomationandMachine Learning is Transforming the Financial Industry. Centria University of Applied Sciences Business Management.

[2] C,Wallon.(2019).Artificialintelligenceapplicationsincorporatefinance.http://hdl.handle.net/2268.2/7558,

[3] Tom C. W. Lin. 2019. *Artificial Intelligence, Finance, and the Law.* Fordham L. Rev.,88,Pp. 531.https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=5630&context=flr

[4] Patel,K.(2018).Artificial Intelligence in Finance. IJSART,4(4),2787–2788

[5] Xie, M. (2019). Development of Artificial Intelligence and Effects on Financial System. Journal of Physics: Conference Series,1187(3),032084.https://doi.org/10.1088/1742-6596/1187/3/032084

[6] Agarwal, M. (2019, December 16). Will Artificial Intelligence Become The Future Of Fintech InIndia?Inc42Media.https://inc42.com/features/will-artificial-intelligence-become-the-future-of-fintech-in-india/

[7] https://digitalwellbeing.org/artificial-intelligence-defined-useful-list-of-popular-definitions-from-business-and-science/

[8] https://www.aismartz.com/blog/use-cases-of-ai-in-the-finance-sector/

[9] https://data-flair.training/blogs/machine-learning-in-finance/

[10] https://internationalbanker.com/finance/the-impacts-and-challenges-of-artificial-intelligence-in-finance/

