



An Analysis of AI Tools Adoption In Finance Industry

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ABSTRACT

AI is a significant technological advancement that incorporates machine learning (ML) and algorithmic language. It is widely used in a variety of fields, including automotive, healthcare, gaming, robotics, finance, surveillance, entertainment, space exploration, agriculture, e-commerce, and social media. The goal is to create an intelligent and autonomous system. Our article examines the use of artificial intelligence in finance (banking, investing, and insurance) and provides a quick introduction. The paper explores problems and their influence on financial sectors, including positives and downsides. The report offers few ideas for how artificial intelligence might impact financial businesses in the future.

It is difficult to dispute that artificial intelligence and robotization have been the focus of study for the past many decades. Furthermore, in recent years, it has grown significantly and is now extensively used in a variety of industries. Artificial intelligence has always been associated with automating procedures in the industrial sector. However, it is now being used to improve financial services as well. For a variety of reasons, the financial industry has been sluggish to adopt and embrace artificial intelligence. Previously, the sector faced concerns about uncertainties, legislation, cyber security, technology gaps, and disruption of lucrative practices. Financial services firms are increasingly recognizing the benefits of artificial intelligence, which has received significant attention. This might explain why the fourth industrial revolution is referred to as such. It is extremely disruptive, in both positive and bad ways. The solutions become more efficient, accurate, and cost-effective. However, enormous power with great responsibility. As the financial industry rapidly evolves, organizations must prioritize security measures. Humans have yet to fully understand the advantages and disadvantages of technology. While artificial intelligence was first established in the 1950s, it has recently gained popularity due to increased processing power and availability to massive data sets.

Keywords: Artificial Intelligence, BFSI, Fintech, Machine learning.

INTRODUCTION

In the present market, artificial intelligence is becoming popular in a variety of fields. AI is a significant advancement in technology, encompassing machine learning (ML) and algorithmic language. AI refers to machines' ability to make intelligent decisions, similar to humans, to complete certain tasks.

Definition: John McCarthy (1955) described artificial intelligence as "making a machine behave in ways that would be considered intelligent if done by a human." ML is a subset of AI that creates statistical models to provide analytical findings.

AI plays a crucial role in projecting future trends in finance, such as stock market investing. Investors use numerous methods of research and data mining to optimize profits. Machine learning plays a crucial role in

An Analysis of AI Tools Adoption In Finance Industry

predicting the stock market, which is influenced by both market and non-market elements. This "black box" approach improves market forecast accuracy. Machine learning techniques, such as regression and time series models, can enhance prediction accuracy and financial data analysis.

SCOPE

The research focuses on AI in many financial areas, including banking, finance, insurance, and real estate.

OBJECTIVES OF THE STUDY

This research will provide a quick introduction to the use of artificial intelligence in finance.

To investigate the problems and consequences of AI in the financial sector, including positives and downsides.

To examine the future prospects of AI in India and provide recommendations.

RESEARCH METHODOLOGY

The study relies on secondary data and is descriptive in nature. Data gathered from many publications, papers, and articles.

APPLICATION OF ARTIFICIAL INTELLIGENCE IN FINANCE

Regulatory compliance - detecting and preventing fraud: As ecommerce or online transactions become more popular, the possibility of fraud grows tremendously. AI relies on anti-fraud systems to detect, report, and stop fraudulent transactions. Banking and finance organizations use Fraud Detection Software, which uses predictive analytics and machine learning algorithms to identify fraudulent transactions and reduce bogus declines.

Predicting the stock market and trading system - can be challenging due to several factors. AI systems analyze data quicker, identifying the reason of failure and providing solutions. A computer system has been taught to predict when to trade shares to maximize profits and minimize losses amid uncertainty, assisting investors, institutions, and enterprises in making timely choices.

Improved security: AI machine learning algorithms detect fraudulent transactions in real-time, rather than after the crime has occurred. Many organizations are implementing AI to improve security for online transactions and services.

Risk Management: Inadequate risk management contributed to the subprime mortgage crisis. Traditional software programs focused solely on loan applications and financial reports. New machine learning technology focuses on analyzing market trends to avoid financial crime and detect financial crises through credit-scoring in real-world scenarios. It also helps to reduce underwriting risks. It can effectively manage risks in loan, health, mortgage, and life insurance. It seamlessly integrates with standard underwriting processes in finance and insurance.

Credit Card and Loan choices: AI automates credit card and loan choices, reducing costs and increasing transparency.

Protect Client's Spending Pattern Prediction: Currently, the entire country relies on internet commerce. AI can identify stolen cards or compromised accounts, preventing fraud and theft. It identifies the user and permits the transaction to occur.

Personalized Banking: AI facilitates online transactions such as payments and deposits, eliminating the need for clients to rush to banks. Manage most consumer complaints and offer self-help options. AI-powered virtual assistants, such as Alexa, Google Assistant, and Echo, are becoming increasingly popular among consumers. It provides clients with accurate information and quick answers to their difficulties.

Security concerns for global financial data - include cyberattacks, virus-like worms, and Trojans. Machine learning security solutions can secure financial data by leveraging intelligent pattern analysis and big data capabilities, giving them an advantage over traditional techniques.

Marketing AI - AI plays a significant role in finance by providing predictive marketing analytics based on historical behavior. Analyzing client expectations helps anticipate sales more accurately. Supervising web activity and analyzing mobile app usage might reveal trends and patterns.

WHY IS THE DEPLOYMENT OF AI IN FINANCE RELEVANT TO POLICY MAKERS

AI applications in finance can increase financial and non-financial risks, raising concerns for consumer and investor safety. AI can increase risks for financial institutions due to its lack of explainability and interpretability, potentially leading to pro-cyclicality and systemic risk in markets. Understanding the model's conclusions may cause mismatches with current financial supervision and governance frameworks, thereby challenging the technology-neutral approach to regulation. AI may provide consumer protection problems, including prejudice, unfairness, and discrimination, as well as worries about data management and utilization. . The use of AI in finance may exacerbate existing risks due to its complexity, dynamic adaptability, and autonomy in advanced applications.

HOW AI AFFECTS THE ASPECTS OF FINANCIAL MARKETS

AI is used in asset management and buy-side trading to identify signals and relationships in big data, optimize operational workflows, and manage risks. AI approaches may only be used by major asset managers or institutional investors with the necessary resources. AI in trading adds complexity to traditional algorithmic trading by allowing computers to learn from data and execute trades autonomously. AI algorithms can improve liquidity management and execution in digitized markets like stocks and FX. They optimize order size, duration, and size dynamically based on market conditions. Traders may use AI to control risk and order flow, leading to improved execution and efficiency. AI algo trading can boost liquidity in normal times, but can also cause illiquidity amid stress and flash collapses. Large simultaneous sales or acquisitions might lead to increased market volatility and new risks. Convergence of trading methods increases the potential of self-reinforcing feedback loops, leading to severe price movements. Such convergence also raises the risk of cyber-attacks, since hackers may easily persuade agents functioning in the same way.

While hazards exist in all types of algorithmic trading, the inclusion of AI increases these risks due to its capacity to learn and adapt to changing situations autonomously. AI models can detect and adapt to herding behavior, allowing them to run ahead based on early indications. Mitigating hazards associated with AI algorithms and models is tricky due to their complexity and difficulty in describing decision-making mechanisms. AI can aggravate unlawful trading behaviors and make it tougher for supervisors to detect cooperation among robots. Self-learning and deep learning AI models can recognize interdependencies and adapt to other market participants' behavior, potentially leading to collusive outcomes without human intervention or user awareness.

FUTURE OF AI IN FINANCE WITH SOME RECOMMENDATION

Today, the world is moving toward artificial intelligence technologies. Several digital giants, like Google, Amazon, and Flipkart, are employing AI to forecast customer behavior. Many universities offer AI-related courses. Bitcoin's appeal stems from its application of artificial intelligence in banking, namely through robotic advice services. Insurance businesses use AI for large data to deliver tailored recommendations, replacing personal financial advice. Companies and investors invest heavily in AI data to save money and prevent human errors. The banking, financial services, and insurance industries are rapidly adopting AI-based fintech solutions. The rapid use of artificial intelligence (AI) in the banking business suggests that it

An Analysis of AI Tools Adoption In Finance Industry

will soon replace human resources and offer effective solutions to users, making it the future of the industry. By 2035, the Indian economy might see a major expansion in the usage of AI. While the US and China have been in the forefront of adopting AI technology, India is taking a more progressive approach. This has the potential to create around 2 lakh employment in areas such as education, healthcare, retail, and more. Acquiring the necessary skills is essential for successful technology adoption. In 2018, the start-up initiative resulted in significant development in the banking industry. Recently, more than 400 startups have emerged in the AI and machine learning fields. Start-up hubs in India, including Bangalore, Hyderabad, Mumbai, and New Delhi, are leveraging AI to improve customer service.

A million of the funds are spent by private industry participants in AI. In June 2018, the NITI Aayog released a strategy for developing artificial intelligence in India. Artificial intelligence is seen to have the potential to aid the nation's economic and social development. AI applications include traffic management, road health monitoring, tracking of banned individuals, and biometrics. On May 17, 2021, LG announced an investment of over \$100 million over three years to build a high-performance computer infrastructure for AI development. LG built a top-tier computer infrastructure capable of doing 95.7 quadrillion computations per second.

RECOMMENDATIONS

- AI's widespread use and potential to diminish human job possibilities necessitate deep learning capabilities. If the machine and human personnel collaborate, the business will thrive.
- AI must be implemented in accordance with the demands of the industries for which competent managers are required.
- AI requires particular skills; thus, students should receive extensive instruction in machine learning and algorithm development. Universities and institutions should promote courses like this.
- Government support for AI to stay competitive with other countries in technology.

ANALYSIS & CONCLUSION

Experts think that artificial intelligence will soon become an integral component of human existence. This transforms our perspective on the world. It answers a large number of issues in minutes. AI may lessen human demands, thus it's important to maintain a balance and adapt to developments. Remember that humanity created the machines, not the other way around. We profit from appropriate use. AI in the financial services business is still in its early stages. Only a small portion of futuristic technology has been found, and only our imagination can restrict its potential. AI can enhance communication with workers and consumers, analyze complicated data, and identify patterns that humans cannot. Furthermore, it improves investment decisions and reduces fraud and credit risk. All of these applications represent a minor portion of AI. Moving forward, technology will become increasingly prevalent in finance, posing a number of issues such as legal, ethical, economic, and societal restrictions. However, to attain broad acceptance, people must develop as well.

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