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APPLICATIONS, CHALLENGES AND FUTURE OF ARTIFICIAL INTELLIGENCE IN FINTECH COMPANIES

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ABSTRACT
AI in Fintech companies is reshaping customer service, streamlining payment processes, and enhancing the efficiency and growth of financial services. This research paper studied applications and benefits of AI in Fintech. It also studied AI risks and challenges in Fintech. Researcher further studied the future of AI in in the Fintech industry.

KEYWORDS: *Artificial Intelligence, Fintech, Machine Learning, UPI etc.*

INTRODUCTION

According to Globe News Wire, artificial intelligence is projected to reach a monumental valuation of 49 billion by 2028. AI in Fintech stands on the brink of an unprecedented technological evolution. AI in Fintech companies is reshaping customer service, streamlining payment processes, and enhancing the efficiency and growth of financial services. By leveraging AI-powered systems, Fintech companies are reshaping customer expectations and ushering in a new era of personalized, accessible, and efficient financial operations. AI in Fintech is characterized by the implementation of machine learning, natural language processing, predictive analytics and cognitive computing to empower financial institutions. Artificial intelligence is rapidly becoming the backbone of next-generation fintech companies. The global market for AI in fintech is projected to reach $61.3 billion by 2031.[1]

OBJECTIVES OF THE STUDY

1) To understand the genesis of Fintech in India and market size of AI in Fintech.
2) To study applications and benefits of AI in Fintech.
3) To study AI risks and challenges in Fintech.
4) To study the future of AI in in the Fintech industry.

RESEARCH METHODOLOGY

This study is based on secondary data which is collected from various reports, journals and websites. This study tried to study the role of AI in Fintech industry.

The Genesis of Fintech in India

Revolution of Fintech in India marked in the year 2015. In India modern banking originated in the late 18th century, but Fintech and start-ups emerged in the 21st century. The Fintech has played an important role in improving the access to banking for everyone in recent years. Fintech and start-ups have transformed payments, wealth management and insurance. Fintech and start-ups playing significant role in financial inclusion. During Covid 19 pandemic, the growth of Fintech accelerated. Fintech companies like Paytm, Google Pay, Phone Pe, Amazon Pay, Slice etc. have grown tremendously during Covid 19 pandemic. India is among the fastest-growing Fintech industry market in the world and there are 6,636 Fintech and start-ups in India. The introduction of UPI played an inevitable role in the Fintech penetration and financial inclusion in the country. The user can access their bank account via an app on their smart phone or any other smart device through UPI. From 2015, the Indian Fintech adoption has risen rapidly, which is 87 % highest in the world. In Asia, India has become the market leader for Fintech by beating close competitor China.[2]

Market Size of Artificial Intelligence in Fintech

The market size of artificial intelligence in fintech was estimated at 42.83 billion U.S. dollars in 2023, which grew to 44.08 billion U.S. dollars in 2024. With a compound annual growth rate (CAGR) of 2.91%, the market size is forecasted to exceed 50 billion U.S. dollars in 2029.[3]

Fintech Applications

Fintech has applications in many areas of finance, which are as follows:[4]

1) **Robo-advisors** are apps or online platforms that optimally invest money automatically, often for little cost and are accessible to ordinary individuals.

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2) **Investment apps** like Robinhood make it easy to buy and sell stocks, exchange-traded funds and cryptocurrency from mobile device, often with little or no commission.
3) **Payment apps** like PayPal, Venmo, Block (Square), Zelle, and Cash App make it easy to pay individuals or businesses online and in an instant.
4) **Personal finance apps** such as Mint, YNAB, and Quicken Simplifi let users to see all of their finances in one place, set budgets, pay bills and so on.
5) **Peer-to-peer (P2P) lending** platforms like Prosper Marketplace, LendingClub and Upstart allow individuals and small business owners to receive loans from an array of individuals who contribute microloans directly to them.
6) **Crypto apps**, including wallets, exchanges and payment applications, allow users to hold and transact in cryptocurrencies and digital tokens like Bitcoin and non-fungible tokens.
7) **Insurtech** is the application of technology specifically to the insurance space.

Benefits of Using AI Applications in Fintech Companies

AI Application	Benefits in Fintech
Payment Processing Automation	Reduces errors, speeds up transactions, and lowers operational costs.
Credit Scoring Algorithms	Provides more accurate risk assessments and offers greater financial inclusion.
Fraud Detection Systems	Leverages pattern recognition to identify and prevent fraudulent activities.
Customer Service Bots	Delivers 24/7 customer service and support, enhancing client satisfaction.
Data Analysis and Forecasting	Detailed insights leading to strategic business growth and profit maximization

Use Cases for AI in Fintech

There are a few different ways that AI systems might be integrated with fintech software. Here are some examples of use cases for AI in fintech:[5]

1) **Credit Risk Assessment and Management:** Banking can come with certain risks. Credit risk is one of them. Risk management is one area where AI can make a substantial contribution. By analyzing vast amounts of data, AI algorithms can identify patterns and trends that might indicate potential risks. For instance, AI can help identify customers who are more likely to default on loans, which can enable financial institutions to make more informed decisions and mitigate risks more effectively.
2) **Fraud Detection:** Another risk banks often face is fraud. AI models and deep learning are great tools for identifying patterns and finding anomalies. They can be trained to spot fraudulent activities by analyzing transactions in near real-time and monitoring behavior patterns and spending habits from users.
3) **Virtual Assistants:** AI-powered assistants can use natural language processing and natural language understanding to interact with customers through a chatbot interface. AI-driven interactions require less human intervention compared to conventional chatbots. These AI applications can lead to more customer satisfaction, and in turn, increased earnings for companies.
4) **AI-based Personal Finance Tools and Services:** For consumers, AI-powered personal financial tools and services have the potential to further enhance customer experience. By using AI to analyze spending habits, investment preferences and interaction patterns, financial institutions can tailor their offerings to meet individual needs.
5) **Algorithmic Trading and Portfolio Management:** AI can provide valuable insights and forecast changes in market trends, exchange rates or investments. AI applications use data analytics that account for news, the current state of financial markets, sentiments across social media, economic indicators and historic financial data. They can assist in automated trading and portfolio management by offering risk-versus-return calculations and financial advice.

AI Risks and Challenges in Fintech

AI poses some risks and challenges to Fintech, which are as follows:[6]

1) **Machine Learning Biases Undermining Financial Inclusion:** Machine learning biases pose a significant risk to Fintech companies' commitment to financial inclusion. To address this, Fintech firms must embrace ethical AI practices. Prioritize ethical considerations in AI development, emphasizing fairness and inclusivity.
2) **Lack of Transparency in Credit Scoring:** The lack of transparency in AI-powered credit scoring systems can lead to customer mistrust and regulatory challenges. Fintech companies can strategically address this risk by incorporating user-centric explainability features.
3) **Regulatory Ambiguities in AI Utilization:** The absence of clear regulations in AI utilization within the financial sector poses a considerable risk to Fintech companies.

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4) **Data Breaches and Confidentiality Concerns:** AI-driven Fintech solutions often involve sharing sensitive data, elevating the risk of data breaches. Fintech companies must proactively implement robust data security protocols to safeguard against such risks.
5) **Consumer Mistrust in AI-Driven Financial Advice:** Consumer mistrust in AI-driven financial advice can undermine the value proposition of Fintech companies. To mitigate this risk, Fintech firms should focus on personalizing explainability and recommendations.
6) **Lack of Ethical AI Governance in Robo-Advisory Services:** Robo-advisory services powered by AI can face ethical challenges if not governed by clear guidelines. Fintech companies must establish ethical AI governance frameworks that guide the development and deployment of robo-advisors.
7) **Overreliance on Historical Data in Investment Strategies:** An overreliance on historical data in AI-driven investment strategies can lead to suboptimal performance, especially in rapidly changing markets.
8) **Inconsistent User Experience in AI-Powered Chatbots:** AI-powered chatbots may deliver inconsistent user experiences, impacting customer satisfaction. Fintech companies should adopt a human-centric design approach guided by strategic principles.
9) **Unintended Bias in Algorithmic Trading:** Algorithmic trading powered by AI can unintentionally perpetuate biases, leading to unfair market practices. Fintech companies must incorporate bias detection mechanisms into their AI algorithms.

Future of AI in the Fintech Industry

The future of AI in fintech is set to reshape the financial landscape, offering immense potential through automation and task efficiency. As digital transformation progresses, AI technologies like machine learning and natural language processing will power more personalized, data-driven decision-making, making services accessible and enhancing financial inclusion. Blockchain integration will add layers of security and transparency, especially for fraud detection, while predictive analytics and robo-advisors provide users with insightful financial forecasts and investment guidance. AI's scalability allows it to meet the growing demands of the fintech sector, driving forward innovations in task automation and supporting smoother operations across a range of functions. All these factors point out that it is crucial for businesses in the fintech market to integrate the best artificial intelligence practices for task automation, fraud detection, data-driven decision-making, and predictive analytics.

CONCLUSIONS

The evolution of Fintech products in India showcases a remarkable journey of innovation, from digital payments to comprehensive financial services. The sector has not only made financial services more accessible but has also positioned India as a global FinTech hub. AI has many applications and benefits in fintech companies, but at the same time challenges and risks

REFERENCES

1. *Charlotte Hu and Amanda Downie. AI in FinTech. https://www.ibm.com/think/topics/ai-in-fintech*
2. *Sinha Minati (2022). A Study on Evolution of FinTech Companies in India. Conference Paper.*
3. *https://www.statista.com/statistics/1446269/ai-in-fintech-market-size-forecast/*
4. *https://www.investopedia.com/terms/f/fintech.asp*
5. *Charlotte Hu and Amanda Downie. AI in FinTech. https://www.ibm.com/think/topics/ai-in-fintech*
6. *https://www.financemagnates.com/fintech/ai-risks-in-fintech-10-ai-challenges-fintechs-still-struggle-with/*
7. *Harjyot Kaur. AI in Fintech: Use Cases, Benefits, Challenges, and Future Trends. https://www.signitysolutions.com/blog/ai-in-fintech*
8. *Bholane Kishor Prakash (2024). Artificial Intelligence and Optimization of P2P Lending Platforms. Fintech Innovations for Financial Inclusion, pp. 16-20. Retrieved from*
9. *https://www.researchgate.net/publication/378069188_Artificial_Intelligence_and_Optimization_of_P2P_Lending_Platforms*
10. *Bholane Kishor Prakash (2023). Adoption, Applications and Challenges of Artificial Intelligence in Indian Banking Sector. Journal of Management and Entrepreneurship, Vol. 17 2(IV), pp. 146-151. Retrieved from*
11. *https://www.researchgate.net/publication/373756455_Adoption_Applications_and_Challenges_of_Artificial_Intelligence_in_Indian_Banking_Sector*
12. *Bholane Kishor Prakash (2023). Recent Trends in Recruitment and Selection (With Special Reference to Artificial Intelligence). Organizational Management (Edited Book), pp.78-93. Retrieved from*
13. *https://www.researchgate.net/publication/374847589_Recent_Trends_in_Recruitment_and_Selection_With_Special_Reference_to_Artificial_Intelligence*
14. *Bholane Kishor Prakash (2023). Artificial Intelligence Revolutionizing Higher Education: Through the Viewpoints of Faculties, Students and Parents. Paper Presented at International Conference on AI in Education: Navigating Challenges and Embracing Opportunities on 19 January 2025 organized by Mahatma Phule College, Kingaon. Retrieved from*
15. *https://www.researchgate.net/publication/388173582_Artificial_Intelligence_Revolutionizing_Higher_Education_Through_the_Viewpoints_of_Faculties_Students_and_Parents*
16. *Bholane Kishor Prakash (2024). AI Startups: Status, Investment and It's Future in India. Recent Contemporary Issues in Commerce and Management (Edited Book) pp. 176-181. Retrieved from*
17. *https://www.researchgate.net/publication/381612940_AI_Startups_Status_Investment_and_It's_Future_in_India*

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18. *Bholane Kishor Prakash (2023). AI Powered CRM: Its Implications, Pros, Cons and Future. Proceedings of International Conference on Artificial Intelligence & Digital Transformation: Strategies for Growth & Sustainability, pp. 39-44. Retrieved from https://www.researchgate.net/publication/384332894_AI_Powered_CRM_Its_Implications_Pros_Cons_and_Future*
19. *Bholane Kishor Prakash (2024). Artificial Intelligence for Predicting Consumer Behaviour. Proceedings of International e-Conference "Creativity, Innovation & Advances in Research World: Pathways for a Better Tomorrow" (ISBN – 978-81-979567-4-4). Retrieved from*
20. *https://www.researchgate.net/publication/388174280_Artificial_Intelligence_for_Predicting_Consumer_Behaviour*
21. *Bholane Kishor Prakash (2024). Artificial Intelligence Driven Personalization and Its Adoption in E-Commerce. Proceedings of One-Day International Conference on Exploring AI in Interdisciplinary Innovations and Contemporary Landscape, A. M. Jain College, Meenambakkam, pp.04 -10. Retrieved from*
22. *https://www.researchgate.net/publication/388989134_Artificial_Intelligence_Driven_Personalization_and_Its_Adoption_in_E-Commerce*