

Chapter 11

The Future of Finance: Revolutionizing the Industry With Artificial Intelligence

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ABSTRACT

This book chapter explores the applications and implications of artificial intelligence (AI) in the finance industry. The chapter examines significant areas where AI is utilized in finance, including trading, fraud detection, customer service, portfolio optimization, and risk management. Furthermore, the chapter explores AI's implications and future trends in finance. This would offer a comprehensive understanding of the applications and implications of artificial intelligence and its importance in financial aspects, including models and techniques awareness. Design/methodology/approach: AI use in finance will be comprehensively examined by a review of literature, industry reports, and case studies. The advantages of using AI in finance will be highlighted, for instance, cost reduction, improved efficiency, and decision-making. Existing literature on using AI in finance will be examined through future trends and AI adoption.

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1. INTRODUCTION

In the domain of Finance, the influence of artificial intelligence (AI) has exceeded mere novelty (Just & Hulter, 2023; Doweling & Lucey, 2023). It has emerged as an indispensable impetus that continually advances, managing an extensive array of prospects that were once restricted to the boundaries of creativity. AI and Finance is a continuously growing field transforming fiscal affairs' dynamics and engagement rules. This cutting-edge fusion of technology and Finance is not a mere trend but a monumental shift that requires thoroughly exploring its multifaceted tapestry. Ranjan & Gupta (2020) In the era of technological transformation, it is imperative to go on broad to investigate AI's applications, navigate the upcoming challenges and bask in the radiant promise of the benefits it bestows upon the financial landscape. Covid-19 and Disruptive technologies are responsible for a drastic change in every industry (Sharma et al, 2022; Bhardwaj, 2017; Das & Ali, 2020; Bhardwaj et al, 2023).

AI has developed the field of finance since the 1950s (Haenlein & Kaplan 2019), with its prominence growing in the 1980s. Initially, AI was primarily used for fraud detection, but its applications in finance evolved. By 2019, there was a surge in research in this field. The financial crisis of 2007-2008 prompted the banking industry to adopt data-driven technologies, leading to significant structural changes. The first study on credit risk assessment and AI dates back to 1968 (Altman, 1968). Initially, these studies relied on univariate models, but over time, multivariate models gained prominence due to their reliability (Keasey & Watson, 1991). Customer service is a crucial aspect of a company's long-term competitiveness. Chatbots, designed to mimic human communication, have been instrumental in automating user interactions. One of the earliest chatbots, Eliza, was created by the Artificial Intelligence Laboratory at MIT in 1964. However, using chatbots in the financial sector began with Sony Bank's integration of AI technologies into their business operations (Okuda & Shoda, 2018). The use of AI in portfolio optimization gained significant attention by integrating natural language processing methods for automatic text feature extraction (Fung et al., 2002). The implementation of news data analysis further revolutionized this field, Twitter data analysis, and its extensive use in the stock market. The close association between technology and Finance has resulted in the revolution of financial aspects with the help of the implementation of artificial intelligence (AI) (Giudici, 2018). There are three main components of associating AI and Finance with its application: the problems it engenders and the benefits associated. Exploring these components is akin to opening a portal to a world where AI facilitates the comprehension of intricate financial patterns, where challenges are transformed into opportunities for learning, and where favourable outcomes reshape our perceptions of money (Ozili, 2021). This expedition is not merely a quest for information. Even the UN sustainable development goals benefited from AI technologies (Truby, 2020). Still, it is a quest to unravel a mystery demonstrating how intelligent technology and financial intelligence can work in tandem. It is like discovering a concealed treasure that illuminates the path to a future where astute computers and financial sagacity collaborate.

Jadav et al. (2022) found that the amalgamation of artificial intelligence has created a dynamic tapestry that has touched every facet of the financial landscape. AI plays a transformative role in revolutionising portfolio management strategies; risk management with unprecedented accuracy uncovered elusive patterns in fraud detection and even enhanced the fabric of customer service interactions (Chisti & Puschmann, 2018). As we delve into this domain, fuelled by a profound need to explore AI's applications, comprehend its challenges, and embrace its benefits, we are poised to unearth a trove of insights that not only shape the way we handle finances but also illuminate a path to a future where technology and fiscal wisdom harmoniously converge.

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