


Chapter 13

Navigating the Ethical Frontier–Human Oversight in AI–Driven Decision–Making System

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ABSTRACT

This chapter investigates the complicated harmony between utilising man-made reasoning (artificial intelligence) in an upgraded direction and the basis of maintaining human oversight to maintain moral principles. The potential for both significant benefits and ethical dilemmas grows as AI systems increasingly penetrate critical sectors, such as healthcare, law enforcement, and transportation. This chapter discusses the difficulties in encoding ethical standards in machine-readable formats and the necessity of incorporating human values into AI systems. It examines instances of both successful and flawed AI implementation through in-depth case studies, highlighting the significance of human intervention at crucial junctures for risk prevention and mitigation. In addition, the chapter discusses the significance of creating solid legal, ethical, and practical frameworks to direct the ethical use of AI technologies.

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INTRODUCTION

Artificial intelligence (AI) has been a powerful theoretical concept for a long time; however, it is becoming one of the leading technologies which changes numerous spheres, including healthcare, finance, education, and many others, and urban planning. AI-driven decision-making systems have become common, particularly with improved machine learning, data analysis, and improved algorithms. Owing to the applicability of AI and its capacity to analyse large quantities of information and produce results that cannot be achieved using only human intelligence, AI will become an indispensable instrument in decision-making operations. For instance, the use of AI in decision intelligence is revolutionising organizational strategies by utilising data to enhance results and innovativeness (Heilig and Scheer, 2023). The integration of AI into decision-making processes occurs in many industries. In the healthcare field, AI is used to aid in the diagnosis of diseases, development of individual patient profiles, and prognosis of patient outcomes which enhances the manipulation of clinical decisions (Williamson & Prybutok, 2024). Financial institutions apply machine learning for fraudulent transaction detection, credit profiling, and algorithmic trading decisions, leading to a higher quality of decision-making (Khan, 2023). However, AI is increasingly becoming involved in urban planning as AI models assist in the creation of smart cities, traffic patterns, and efficient resource consumption (Sanchez, Brenman, & Ye, 2024).

AI is also becoming a revolution in the education sector. AI relies on applications in designing learning models, administrative work, and feedback to learners in real time, as noted by Slimi and Carballido (2023). Concerning ethical standards, AI is applied in education and is used in a manner that seeks to ensure that assessment and evaluation algorithms as well as consequence determinations are fair and transparent, as pointed out by Cheong in 2024. Moreover, research on the feasibility of AI in increasing collaborative decision-making is also experimental, concerning quasi-experimental research focusing on human interaction with generative AI systems (Hao, Demir, & Eyers, 2024). Despite its advantages and potential for enhancing decision-making, the incorporation of AI poses threats and ethical problems. Another advantage of applying AI decision-making is the improved efficiency and narrowing of errors. AIs can handle big data much faster than humans because they can select features that may not be easily discernible. This capability is especially useful in industries such as finance and healthcare, where decision making must occur on time while observing the required accuracy. For instance, AI in the methodological processing of financial data can be used to sustain and develop financial stability at local and international levels (Li, 2024; Tariq, 2024). AI also utilises decision making in terms of accessibility and inclusion. Diversification of needs and the consequent individualisation of experiences can be another strength of AI, as those applying

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