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XVIII ВСЕУКРАЇНСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ СТУДЕНТІВ, АСПІРАНТІВ ТА ВИКЛАДАЧІВ ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ КАФЕДРИ ІНОЗЕМНИХ МОВ ТА ЛІНГВОДИДАКТИКИ

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"TO MAKE THE WORLD SMARTER AND SAFER"

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To Make the World Smarter and Safer: Матеріали XVIII всеукраїнської науково-практичної конференції студентів, аспірантів та викладачів Лінгвістичного навчально-методичного центру кафедри іноземних мов та лінгводидактики СумДУ (25-26 квітня 2024 р.) / за заг. ред. професора Таценко Н.В. – Суми : СумДУ, 2024. – 168 с.

У матеріалах подані тези XVIII Всеукраїнської науково-практичної конференції студентів, аспірантів та викладачів Лінгвістичного навчально-методичного центру кафедри іноземних мов та лінгводидактики СумДУ. До збірника ввійшли наукові дослідження, присвячені актуальним проблемам сучасних інноваційних технологій та процесів у науці, техніці та різних сферах людської діяльності.

Для молодих науковців, викладачів і студентів усіх факультетів.

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***За зміст статей і правильність цитування
відповідальність несе автор***

ARTIFICIAL INTELLIGENCE IN CRISIS MANAGEMENT: NAVIGATING THE FUTURE

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One of the most important issues in crisis management is the ability to respond effectively to unfavorable factors and ensure sustainable development. As noted by Nunamaker, Weber, and Chen [2], the decision-making part of crisis management is split into two categories: planning for and handling crises when they occur. Crisis management in the classical sense relies on arranging for preparation measures, as well as human judgment to travel through crises. However, in the era of artificial intelligence (AI), there is a paradigm shift at hand that promises increased efficiency, speed, and adaptability in dealing with crises.

According to Starbuck, Greve, and Hedberg [5], crises are events that interrupt normal operations of an organization, a community, or individual growth. They come in two main forms: sudden and preventable. Sudden crises include occurrences like natural disasters, terrorist acts, and accidents. These external crises are unrelated to any particular organization; therefore, anticipation is crucial. Still, due to potential impacts, swift reaction measures and efficient planning may be employed.

Preventable crises develop gradually, and management failures or internal issues are attributable to them. Management failures, which lack visible warning signs, lead to numerous warning signals. Since they start with the accumulation phase, it's possible to prevent or lessen the severity of the aftermath. These crises bring along intense impairment across domains, involving physical, financial, environmental, social, and psychological realms.

Historically, crisis management was focused on reacting to events as they unfolded, with reactivity and recovery being placed over prevention and preparedness [4]. Such traditional systems are the formal, hierarchical structures that spell out an explicit, top-down

approach to emergency steps and procedures. In modern times, reactive, short-term systems, which are a part of conventional processes, work properly when it comes to certain crises.

However, with the increasing complexity and unpredictability of the new challenges, they still fail to meet all needed goals. One of the obvious deficiencies of traditional crisis management is that it remains focused on a reactive, short-term approach. It most often considers immediate actions, leaving the underlying factors almost neglected. With the changing environment of the threats, relying on such an approach is scarcely credible. The development of an AI-based system thus offers a flexible answer to the emerging crises of our times.

AI's capability to rapidly process datasets, predict outcomes, and learn from patterns is just the important element that has an insatiable thirst to foretell and respond to crises. Insofar as historical data are being processed alongside current trends, AI offers predictive insights that make it possible to forecast crises before they happen. The learning and adaptation features of the AI systems turn into more accurate predictive precision and operational efficiency. Thereafter, AI's analysis of intricate datasets accelerates the decision-making process, improving the quality of decisions made. Predictive analytics, fueled by the AI system, enables organizations and governments to run the show in detecting threats well ahead. These AI systems support a dynamic approach to crisis management and reduce the time taken for decision-making.

In general, the crisis management landscape is changing with the advent of AI. AI gives crisis managers the ability to avoid, address, and recover from a crisis using various tools and technologies. Regarding C.-C. Lee et al. [3], the benefits and challenges of using AI in crisis management are numerous. The summary of these is presented in Table 1 below.

As can be seen from the Table, AI-driven analytics and data processing allow crisis managers to have a comprehensive view of what the unfolding crisis entails. For example, geospatial and social media monitoring tools enable the manager to understand the reach of the disaster, the public's sentiment, and the nature of the threats.

By processing data, AI models identify patterns that predict certain crises, eradicate the cause, and prevent various situations, such as natural disasters, devastating epidemics, or social upheaval. Also, AI systems help crisis managers make informed decisions by providing recommendations from the above following the data-driven analysis. Finally, the data-centric AI makes sure that actions taken are based on the most recent and comprehensive information.

Table 1

Advantages and challenges of using AI in crisis management

Advantages of AI in crisis management	Challenges of AI in crisis management
Comprehensive crisis insights: AI-driven analytics and data processing offer a detailed view of crises.	Technical limitations: data quality, availability, model accuracy.
Predictive capabilities: AI identifies patterns to predict and prevent crises.	Ethical and societal concerns: issues around privacy and data protection.
Informed decision-making: AI provides data-driven recommendations.	Mitigation strategies needed: increasing transparency, and involving stakeholders.
Enhanced communication: AI facilitates improved knowledge sharing and communication within the realm of crisis management.	

However, the application of AI in this field encounters numerous problematic issues and challenges, both of technical and ethical character. On a technical level, these embody limitations concerning data quality and availability, model accuracy and reliability, generalization for pathologies that have never occurred before, etc. Ethical and societal issues involve privacy and data protection, fairness and biases in decision-making, as well as citizen states. The best way to overcome these challenges would be to ensure data privacy and security, mitigate biases, grant more transparency and explainability, and involve stakeholders actively.

Organizations need to stick to a complete set of business practices to effectively use AI in crisis management. Protecting the integrity and confidentiality of data is critical if AI is to produce accurate results. According to Cox [1], organizations should set up strict procedures for such things as data collection and processing. Not only do they need to insure the quality and privacy of information but also guarantee that personal information is anonymous and consent has been properly drawn up. Therefore, participation of a wide range of experts in the development and application of AI for managing crises is required: AI specialists, crisis management professionals, ethical advisors, community representatives etc. This multidisciplinary approach ensures a well-rounded strategy.

It is important for organizations to develop AI systems that are understandable, give the public access to data on how decisions are made, and build confidence in AI crisis management. Given that AI models are based on past and present data, keeping AI systems up-to-date is important for their effectiveness. Organizations should make sure their AI solutions conform to long-accepted ethical principles, promote fair dealing with others, and help avoid discrimination. By observing these operating techniques, organizations can take full advantage of what AI can do in the age of modern crisis management.

To sum up, across a range of dimensions from prediction to response and recovery, AI offers great potential for improving crisis management. As we march ahead, thoughtful embedment of AI technologies rooted in ethical principles and best practices will be essential for constructing societies that are more resilient when faced with tomorrow's catastrophes.

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FINANCIAL AND ECONOMIC CHANGES OF TODAY

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In today's dynamic global world, financial and economic systems are undergoing profound changes caused by many factors, including technological advances, geopolitical shifts, demographic changes, and environmental challenges.

The purpose of this paper is to explore and analyze the current financial and economic changes shaping our world, identifying key trends, challenges, and their implications in a broader context. Through a comprehensive literature review, empirical analysis, and case studies, the paper explores the complex interrelationships between the various drivers of change and their impact on financial markets, economic policy, and the dynamics of social development. By examining both macroeconomic indicators and micro-level phenomena, this study aims to provide valuable insights for policymakers, businesses, investors, and individuals navigating today's complex financial and economic landscape.

The 21st century has witnessed unprecedented changes in the global economic system, marked by technological breakthroughs, geopolitical changes, and social transformations. These developments have not only changed financial markets and economic systems, but also created new challenges and opportunities. In this context, it becomes necessary to comprehensively examine the nature and implications of these changes.