„DIMITRIE CANTEMIR" UNIVERSITY
FROM TÂRGU MUREȘ

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INTERNATIONAL CONFERENCE

THE IMPACT OF DIGITALIZATION AND ARTIFICIAL INTELLIGENCE ON THE DEVELOPMENT OF POST-MODERN SOCIETY. CHALLENGES AND OPPORTUNITIES

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Argument

In an era where technology is redefining all aspects of human existence, the conference titled *The Impact of Digitalization and Artificial Intelligence on the Development of Postmodern Society: Challenges and Opportunities*, organized in November 2024 by "Dimitrie Cantemir" University in Târgu Mureș, aims to explore the depths of this transformation and provide a platform for reflection and debate on the multiple implications of digitalization and artificial intelligence (AI) in contemporary society. Digitalization and AI are no longer mere auxiliary tools of human progress; they have become true driving forces of change, reshaping the economy, education, healthcare, justice, and our very conception of social life. In this context, the opportunities are considerable, but the ethical, social, and economic challenges are just as significant. On the one hand, automation and intelligent algorithms can enhance efficiency and accessibility in services, yet on the other, they raise fundamental questions about the role of humans in the society of the future, the fairness of access to technology, and the risks associated with surveillance, informational manipulation, and data security.

This volume brings together the papers presented at the conference, highlighting the contributions of researchers, practitioners, and specialists from various fields, including social sciences and humanities, psychology, dental medicine, geography, economics, and law. This interdisciplinary diversity reflects the complexity of the impact of digitalization and AI, emphasizing the need for an integrated approach in analyzing and managing technological changes.

The conference provided an academic framework for examining the impact of artificial intelligence (AI) and digitalization on research in social sciences and humanities, psychology, dental medicine, geography, economics, and law. The evolution of digital technologies is generating fundamental transformations in research methodologies, data collection and analysis processes, and the interpretation of scientific results within the fields covered by the studies in this volume. It proposes a comprehensive approach from the following perspectives:

*Artificial Intelligence and Digitalization in Social Sciences and Humanities***.** In social sciences and humanities, AI facilitates big data analysis to identify behavioral patterns and socio-cultural trends. Traditional research methods, such as interviews and surveys, are complemented by digital tools that allow the processing of vast amounts of data.

*Psychology and Neurosciences: Advanced Technologies in the Study of Human Behavior***.**

Artificial intelligence significantly contributes to research in psychology, enabling the analysis of human behavior through predictive models and artificial neural networks. Advanced software can detect subtle patterns in emotions and reactions, facilitating more precise diagnoses in mental health. Moreover, virtual and augmented reality technologies are used for cognitive therapies and experimental simulations, offering new ways to treat psychological disorders.

*Dental Medicine: Digitalized Diagnosis and Treatment***.** In dental medicine, digitalization and AI enhance the accuracy of diagnoses and the efficiency of treatments. 3D scanning and image recognition algorithms enable the early detection of dental conditions,

thus reducing the risks associated with late treatments. Additionally, AI-based systems assist in personalizing treatment plans, ensuring care tailored to each patient's needs.

Geography and Digital Cartography. In geography, AI and digital mapping technologies enable detailed analysis of environmental changes and urban dynamics. Data collected via satellites and drones are automatically processed to monitor transformations in climate and land use. These technologies also support the development of smart cities by optimizing infrastructure and resources based on community needs.

Economy and Finance: Algorithms and Market Forecasting. In economics, predictive models based on artificial intelligence enable the analysis of financial markets and the optimization of investment strategies. Machine learning algorithms are used to detect patterns in consumer behavior and anticipate economic trends. The digitization of financial processes reduces operational costs and enhances transaction security.

Law and Digital Justice. In the legal field, AI is revolutionizing the analysis of legislative documents and case law, facilitating access to information and reducing the time needed for data processing. Legal robots and virtual assistants support lawyers in drafting contracts and interpreting legislation. Moreover, blockchain technologies provide secure solutions for managing evidence and legal documents, reducing the risk of fraud.

The conference organized at "Dimitrie Cantemir" University in Târgu Mureș highlighted the significant impact of artificial intelligence and digitization on research across various fields. Technological evolution not only optimizes traditional research methods but also redefines the very nature of scientific knowledge. By integrating new technologies, researchers can generate more precise results and respond more efficiently to current societal challenges. This digital transformation is not only an opportunity but also a necessity for scientific progress in the 21st century.

In a society characterized by unprecedented interconnectivity, the conference and this volume aim to contribute to a better understanding of current transformations and stimulate constructive dialogue in the knowledge process. Only through a balanced approach based on critical reflection and collaboration can we turn the challenges of digitization and artificial intelligence into sustainable opportunities for the development of postmodern society.

We thank all participants and authors who contributed to this scientific endeavor, and we hope that this volume provides valuable perspectives on a topic of major importance for our future in the vast process of scientific knowledge.

Digitization and artificial intelligence (AI) have become the driving forces behind the transformation of postmodern society, redefining economic, social, cultural, and educational paradigms. In an era of hyperconnectivity, these technologies offer unprecedented opportunities for human progress but pose significant challenges requiring a responsible and balanced approach.

On the one hand, digitization and AI facilitate access to information, optimize economic processes, support innovation, and improve quality of life. At the same time, AI opens new horizons for scientific development, creativity, and global collaboration.

To fully harness the potential of digitization and artificial intelligence, a strategy is essential one that promotes innovation while also protecting the fundamental values of humanity. Education plays a key role in preparing young people for the new challenges of the digital age, and collaboration between governments, businesses, and civil society is crucial to ensuring a fair and sustainable transition to the future.

In conclusion, the impact of digitization and artificial intelligence on postmodern society depends on how they are integrated into economic and social structures. The future belongs to those who manage to combine technological progress with ethical and human principles. As Albert Einstein once said: *"**Technology is a useful servant but a dangerous master."*** Thus, the key to success in this new era is technological development and our ability to guide it in a direction that serves the common good.

Scientific Vice-Rector,
Assoc.Prof.Ph.D. Doina DAVID

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