

PREFACE TO THE EDITION

It is with great pleasure that we present the latest issue of the International Journal of Information Technology Research Studies (IJITRS). This issue brings together an outstanding collection of scholarly contributions that reflect the dynamic evolution of information technology and its growing influence across diverse sectors of society. The articles featured in this volume demonstrate how emerging computational paradigms are transforming software engineering, healthcare, urban development, cybersecurity, digital governance, education, and traditional knowledge systems through intelligent, secure, and sustainable technological solutions.

Artificial Intelligence continues to redefine the landscape of modern computing, and several contributions in this issue showcase its transformative potential. The development of Large Language Model-driven automated software testing illustrates how generative AI can significantly enhance software quality, readability, and testing efficiency. Likewise, the integration of machine learning with Geographic Information Systems offers powerful decision-support mechanisms for sustainable urban planning, enabling more accurate land-use prediction and environmentally responsible development strategies.

The growing importance of data privacy and secure collaborative intelligence is reflected in the research on federated learning for healthcare analytics. By enabling distributed model training while preserving patient confidentiality, the proposed framework demonstrates how privacy-preserving artificial intelligence can facilitate meaningful medical innovation without compromising sensitive data. Complementing this direction, the issue also presents advanced edge computing approaches for securing smart city infrastructures, highlighting lightweight, real-time cybersecurity solutions capable of addressing the complex challenges posed by large-scale Internet of Things ecosystems.

Digital trust and governance remain central themes in the contemporary digital era. The blockchain-based digital identity management framework presented in this issue offers an innovative pathway toward secure, citizen-centric e-governance through decentralized identity architectures, privacy-preserving authentication, and transparent credential management. Such contributions underline the critical role of emerging technologies in building trustworthy and resilient public digital infrastructures.

One of the distinguishing strengths of this issue is its recognition that technological innovation must remain grounded in human expertise and societal contexts. The proposed decision-support framework for Kerala's traditional lift-net fisheries successfully combines machine learning with Traditional Ecological Knowledge, demonstrating how intelligent systems can augment rather than replace human decision-making. This interdisciplinary perspective represents an important direction for future technological research, where indigenous knowledge and advanced analytics work together to promote sustainable livelihoods.

The issue further extends the boundaries of educational technology by introducing a conceptual framework for multimodal emotion-aware adaptive learning. By integrating affect recognition, pedagogical intelligence, and responsible governance, the proposed architecture envisions future online learning environments that are not only technologically sophisticated but also emotionally responsive, ethical, and learner-centered.

Collectively, the contributions published in this issue underscore several defining trends in contemporary information technology research: the integration of artificial intelligence into complex decision-making processes, the growing emphasis on privacy, transparency, and security, the convergence of data-driven intelligence with domain expertise, and the increasing importance of responsible innovation. The research presented herein demonstrates that technological advancement achieves its greatest impact when it is designed to address real-world challenges while maintaining ethical responsibility, inclusivity, and sustainability.

The Editorial Board extends its sincere appreciation to all authors for their valuable scholarly contributions, the reviewers for their rigorous evaluations and constructive feedback, and the editorial team for their unwavering commitment to maintaining the quality and integrity of the journal. Their collective efforts continue to strengthen the International Journal of Information Technology Research Studies as a vibrant platform for disseminating innovative, interdisciplinary, and impactful research.

We trust that the articles in this issue will provide meaningful insights, stimulate further academic inquiry, and inspire future innovations that contribute to the advancement of information technology for the benefit of researchers, practitioners, policymakers, and society at large.

Dr. R. Pugazhenth
Chief editor

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