

Editorial

The Special Issue on Innovation in Computing, Engineering Science & Technology (2022) in the *Advances in Science, Technology and Engineering Systems Journal (ASTES Journal)* reflects the accelerating pace of technological convergence and the growing importance of integrative innovation across computational and engineering domains. In an era defined by rapid digital transformation and increasing system complexity, this issue presents a curated collection of research that highlights how novel computational techniques and engineering advancements are jointly shaping the future of science and technology.

A central theme of this issue is the expanding role of intelligent and data-centric methodologies in engineering applications. Several contributions explore the deployment of artificial intelligence, machine learning, and advanced data analytics to enhance system performance, enable predictive capabilities, and support real-time decision-making. These studies demonstrate how computing innovations are being seamlessly embedded into engineering processes, from smart manufacturing and automation to communication systems and intelligent control frameworks, thereby redefining traditional operational paradigms.

The issue also emphasizes innovation in core engineering sciences, particularly in the development of sustainable technologies, advanced materials, and high-efficiency systems. Authors investigate energy-aware designs, environmentally responsible engineering practices, and resilient infrastructures that address contemporary global challenges. The integration of computing tools with engineering innovation is especially evident in emerging areas such as the Internet of Things (IoT), cyber-physical systems, and next-generation network architectures, where interdisciplinary collaboration is essential for achieving scalable and adaptive solutions.

Methodological diversity is another strength of this special issue. The included papers employ a range of approaches, including theoretical modeling, computational simulations, experimental validation, and applied case studies. This blend of rigor and practicality ensures that the research contributes not only to academic advancement but also to industrial and societal applications. Many studies focus on scalability, robustness, and efficiency, offering solutions that are adaptable to a variety of technological environments and operational conditions.

Set against the backdrop of ongoing global transformation in 2022, the research presented in this issue reflects a heightened emphasis on digital resilience, system intelligence, and sustainable growth. The continued evolution of computing technologies, alongside advancements in engineering science, has reinforced the need for integrated approaches that can respond effectively to emerging challenges and opportunities.

The editorial team extends its sincere appreciation to the authors for their valuable contributions and to the reviewers for their diligent and constructive feedback. Their collective efforts have ensured the quality, relevance, and impact of this special issue.

This special issue provides a comprehensive overview of the innovations driving progress in computing and engineering science. By bringing together diverse perspectives and forward-looking research, it serves as a platform for advancing interdisciplinary knowledge and fostering continued innovation in technology and engineering systems.

Guest Editor

Prof. Wang Xiu Ying