

Special Issue

Sustainability in the Digital Age: The Role of Artificial Intelligence in Transforming Value Chains and Life Cycles

Message from the Guest Editor

This Special Issue aims to explore how AI-driven innovations can enhance sustainability across different sectors while critically assessing the challenges of practical implementation and the potential unintended consequences. This Special Issue will examine AI's role in driving sustainability transformations within modern value chains and life cycles, emphasizing its environmental, social, and economic dimensions. Topics of interest include AI applications in sustainable manufacturing, supply chain optimization, waste reduction, carbon footprint minimization, and energy efficiency. We invite researchers from diverse disciplines—including computer science, environmental science, engineering, business, and social sciences—to contribute to this interdisciplinary dialogue. By addressing the interplay between AI, digital transformation, and sustainability, this Special Issue aims to provide a comprehensive and critical perspective on AI's transformative potential in creating sustainable value chains and life cycles.

Guest Editor

Dr. Alessandro Tufano

Department of Industrial Engineering, University of Bologna, Forlì, Italy

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Sustainability
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
sustainability@mdpi.com

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Message from the Editor-in-Chief

I encourage you to contribute a research or comprehensive review article for consideration for publication in *Sustainability*, an international Open Access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. *Sustainability* publishes original research articles, review articles and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

Editor-in-Chief

Prof. Dr. Marc A. Rosen

Faculty of Engineering and Applied Science, University of Ontario
Institute of Technology, Oshawa, ON L1G 0C5, Canada

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