Artificial Intelligence in Action: Innovative Applications and Research Directions

Shadi Saleh

Call for submission. This editorial introduces the first issue of 2026 for *Embedded Selforganising Systems (ESS)* journal. The focus of this issue is AI-driven Solutions for Sustainable Environment Monitoring (Robotics and Embedded Systems).

Our journal uses electronic publication, which provides a flexible way to submit and review contributions of authors from all countries. The advantages of such an e-journal are multifarious. In comparison to traditional paper journals, we replace the classic review and creation process with a new sliding issue model. Each issue starts with an initial editorial and an official call for papers. The submitted articles will be reviewed and, if accepted, published as soon as the final version is received by the committee. Based on this process, each sliding issue can be filled successively until the maximum number of articles is reached. During this period, all accepted papers can, already be read by other researchers while other papers are still in the reviewing process. Accordingly, the time to publish shrinks to a minimum. In addition, multiple issues with different focus can co-exist at the same time, which provides completely new possibilities to react on latest research topics. The journal also allows the integration of discussions and other reactions on published articles in the same journal issue.

We are welcoming fresh ideas, on-going research technical reports and novel scientific works. We also intend to create a promising platform for creative and constructive discussions.

Artificial Intelligence in Action: Innovative Applications and Research Directions

We welcome original contributions, including fresh ideas, ongoing research, technical reports, and novel scientific studies. This special issue aims to provide a vibrant platform for creative, critical, and constructive discussions on the evolving role of Artificial Intelligence (AI) in advancing research, industry, and society.

Achieving sustainable and transformative progress across diverse domains increasingly relies on the effective integration of advanced AI technologies. AI-driven methods enable significant advances in data analysis, pattern recognition, and decision-making through real-time processing, predictive modeling, and adaptive learning. These capabilities support organizations and researchers in identifying emerging trends, optimizing complex processes, and responding proactively to dynamic and uncertain environments.

AI has already demonstrated a profound impact across sectors such as healthcare, finance, manufacturing, education, transportation, and environmental systems. In particular, AI offers promising avenues for sustainable and advanced environmental solutions, including climate modeling, resource optimization, ecosystem monitoring, and energy-efficient systems. By integrating AI with enabling technologies such as Big Data analytics, robotics, and the Internet of Things (IoT), researchers and practitioners can address complex challenges while promoting environmental sustainability and resilience.

Despite its transformative potential, deploying AI across diverse domains presents significant challenges, including data quality and bias, model robustness, explainability, ethical considerations, scalability, and regulatory compliance. Overcoming these challenges requires interdisciplinary collaboration and a deep understanding of both AI methodologies and domain-specific constraints.

This special issue seeks to highlight state-of-the-art research and practical developments in AI applications, with a particular emphasis on real-world challenges, innovative methodologies, and sustainable solutions. By bringing together insights from academia and industry, we aim to advance a comprehensive understanding of AI’s transformative potential and its role in building a resilient, efficient, and environmentally sustainable future..

The Embedded Self-organizing Systems (ESS) journal features a curated set of research tracks addressing the challenges and opportunities associated

with AI-driven solutions across multiple fields. Topics within this issue include, but are not limited to:

- Advanced data analysis and machine learning techniques
- Predictive modeling and decision support across industries
- Integration of AI and IoT for real-time monitoring and control
- Disaster prediction, environmental monitoring, and remote sensing applications
- Smart agriculture, precision farming, and sustainable water resource management
- AI-driven robotics, drones, and autonomous systems
- Computer vision, deep learning, and explainable AI (XAI) development
- Eco-friendly industrial processes, energy efficiency, and waste optimization
- Sustainable and green AI solutions for environmental and societal impact
- Intelligent automotive and mobility software systems
- Robotics applications in manufacturing, healthcare, and service sectors

This collection of research seeks to advance the scientific dialogue on the role of AI in shaping the future, providing a platform for innovative approaches that contribute to a technologically advanced and sustainable society.

SUBMISSION INSTRUCTIONS

Submissions for the journal must be made as complete papers (there is no abstract submission stage) submitted as PDF documents. Authors are requested to submit papers reporting original research results and experience. The page limit for regular papers is 4 to 6 pages and short papers are from 2 to 4 pages. Papers should be prepared using the IEEE two-column template. An MS Word template or ESS online journal is available here https://www.bibliothek.tu-chemnitz.de/ojs/index.php/cs/information/authors

Papers should submit following link of journal:

https://www.bibliothek.tu-chemnitz.de/ojs/index.php/cs/about/submissions

Submission Deadline: 30.05.2026

The conference fee will be free.

Review in 2 weeks after submission.

Camera ready paper for publication should be submit in 2 weeks after review notes.

Thanks in advance for Your Contribution!