

Special Issue

Deep Learning and Data Management for Monitoring, Automation, and Control of Livestock Environment

Message from the Guest Editor

The rapid advancement of digital technologies has transformed livestock farming and environmental management into highly automated, data-intensive systems. Precision livestock farming now employs deep learning, machine learning, and big data analytics to monitor animal health, behavior, and welfare, while environmental control systems optimize factors such as ventilation, temperature, and emissions. As these AI-driven systems scale, concerns around data management—including ownership, access, privacy, and transparency—have become increasingly important. This special issue aims to explore the convergence of cutting-edge AI applications with responsible data practices in livestock and environmental systems. We seek to highlight how technological innovations are reshaping animal agriculture and resource management, while addressing the ethical and societal implications of data use in these domains. This issue encourages interdisciplinary contributions bridging agriculture, computer science, engineering, and social sciences to advance sustainable and trustworthy smart livestock systems.

Guest Editor

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Message from the Editor-in-Chief

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