

Special Issue

Advances of Next-Generation AI Technologies for Industry 5.0

Message from the Guest Editors

As Industry 4.0 progresses, a significant transition is emerging toward Industry 5.0, a new paradigm that places human-centric, sustainability, and resilience at the core of industrial systems. During the era of Industry 4.0, the technologies such as Internet of Things, Machine Learning, and Deep Learning have significantly enhanced the automation and connectivity. However, the transition to Industry 5.0 demands that AI systems not only optimize processes but also collaborate effectively with humans, improve workforce capabilities, and maintain ecological and operational balance. Therefore, exploring new-generation AI technologies tailored towards Industry 5.0 has become an urgent research focus. This Special Issue invites original research and reviews exploring how next-generation AI can drive the transformation toward Industry 5.0, fostering environments where technology serves people, systems withstand disruptions, and production aligns with planetary boundaries. This Special Issue aims to provide a platform to exchange and share ideas in the latest research findings on these cutting-edge developments.

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