

Special Issue

Advanced Intelligent Control Theory with Applications

Message from the Guest Editor

Cyber-physical systems (CPS) bridge the physical and cyber worlds and are key to industrial intelligence, smart cities, and related applications. With artificial intelligence, CPS can enable real-time modeling, predictive optimization, and autonomous learning in complex and uncertain environments. Yet periodic “sense-compute-act” schemes often waste bandwidth, energy, and computing resources, and naive AI inference may ignore strict latency, jitter, and packet-loss constraints of shared networks. Event-triggered control (ETC) addresses these issues by transmitting data only when local errors/innovations exceed adaptive thresholds, reducing network utilization while maintaining performance. This Special Issue solicits original research and reviews on theories, methods, and applications that integrate event-triggered sensing/control, AI-based decision making, and network-aware resource management for CPS. Topics include: AI-driven data-based control; secure and resilient CPS; distributed event-triggered designs under topology changes; event-driven modeling and optimization; AI-enhanced dynamic/self-triggered mechanisms; and industrial applications of AI-enabled CPS.

Guest Editor

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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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