

Special Issue

Emerging Algorithms for Production Planning and Control in Industry 5.0: Integrating Human Expertise and Automation

Message from the Guest Editor

This Special Issue addresses the critical need for innovative algorithmic solutions tailored to production planning and control within advanced manufacturing environments, specifically aligned with Industry 5.0 principles. Industry 5.0 integrates sophisticated automation and machinery with human-centric processes, generating new complexities that traditional algorithms struggle to manage efficiently. Consequently, this collection highlights emerging algorithms that are expressly developed to optimize the interactions between automated systems and human labor. These innovations are designed to boost productivity, adaptability, and resilience in dynamic manufacturing environments.

Contributions explore novel algorithmic frameworks that enable effective scheduling, resource allocation, real-time process adjustments, and predictive maintenance. The featured research emphasizes flexibility, human-machine collaboration, sustainability, and responsiveness to changing operational conditions.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

Editor-in-Chief

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