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## **Advances in Artificial Intelligence Methods Applications in Industrial Control Systems**

[www.mdpi.com/books/reprint/6973](http://www.mdpi.com/books/reprint/6973)

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ISBN 978-3-0365-6808-9 (Hardback)  
ISBN 978-3-0365-6809-6 (PDF)



The motivation for the present reprint is to provide an overview of novel applications of AI methods to industrial control systems by means of selected best practices in highlighting how such methodologies can be used to improve the production systems self-learning capacities, their overall performance, the related process and product quality, the optimal use of resources and the industrial systems safety, and resilience to varying boundary conditions and production requests.

By means of its seven scientific contributions, the present reprint illustrates the increasing added value of the introduction of AI methods for improving the performance of control solutions with reference to different control and automation problems in different industrial applications and sectors, ranging from single manipulators or small unmanned ground vehicles up to complex manufacturing. Additionally, the role of AI to improve the performance of relevant engineering methodologies and digital instruments, such as cyberphysical systems, digital twins, and human–robot collaboration, are also effectively addressed in the included contributions.



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