

Call for Papers

Annals of Operations Research

Special Issue for IFAC MIM 2022 Conference: Digital Manufacturing and Supply Chain: Creating Benefits Through Operations Research and Artificial Intelligence

The *Annals of Operations Research* seeks submissions for a special issue on **Digital Manufacturing and Supply Chain: Creating Benefits Through Operations Research and Artificial Intelligence**.

Submission deadline: December 31, 2022

Special Issue Guest-Editors:

Erwin Pesch (DE), Alexandre Dolgui (FR), Dmitry Ivanov (DE), Tsan-Ming (Jason) Choi (TWN), Weiwei Chen (USA)

This special issue is targeted towards, but not restricted to the 10th IFAC Conference MIM 2022 that will take place on June 22–24, 2022 in Nantes (France). The MIM 2022 conference papers submitted to this special issue must make an additional contribution: they must cite the relevant conference paper and explicitly state what the additional contribution is. To ensure the contribution is substantially different from the conference paper, it should be expanded with 75 percent new materials.

Scope

With Industry 4.0, a transition from automated manufacturing and intelligent to digital operations has been coined. This transition covers both network and plant levels. At the plant level, digital manufacturing is based on collaboration of machines (of different roles and levels of intelligence), machines and products, and humans and machines. From the application perspective, these features are materialized through additive manufacturing, sensors, robotics, digital twins, virtual and augmented reality, and collaboration tools in creating product and services. At the network level, the digital supply chain has been created utilizing blockchain, Internet-of-Things (IoT), e-commerce platforms, and collaborative supplier portals to achieve a seamless end-to-end visibility. From the solution methodology perspective, innovative approaches have been developed combining interdisciplinary methods from operations research (OR), machine learning (ML), and artificial intelligence (AI).

The special issue Digital Manufacturing and Supply Chain: Creating Benefits Through Operations Research and Artificial Intelligence seeks to collect papers demonstrating how Automation Technology (Additive Manufacturing, Drones, AGVs), Collaboration Technology (Digital Platforms), Identification and Communication Technology (Blockchain, Sensors, Smart Products), and Data Processing Technology (Big Data Analytics) can generate benefits for manufacturing and supply chain operations.

This special issue of ANOR seeks to attract high-quality and high-impact research that shows the state-of-the-art developments in the field. The contributed manuscripts should build upon methods and applications of OR and analytics to digital, resilient, and sustainable manufacturing and supply chains 4.0. We are particularly interested in innovative applications using either novel OR methods, or OR methods combined with machine learning and artificial intelligence. Submitted papers have to comply with the mission and high quality standard of the Journal.

Potential topics of applications include but are not limited to:

- Supply chain risk and resilience analytics
- Circular supply chain management
- Cloud manufacturing systems
- Blockchain technologies for supply chains
- Resilient supply chain design and planning
- Digital supply chain twins
- Logistics and supply chain control with real-time data
- Inventory control and management using sensing data
- Combined applications of optimization, simulation, and AI
- Dynamic resource allocation in Industry 4.0 customized assembly systems
- Improving forecasting models using big data and machine learning
- Impact of additive manufacturing on decision-support systems
- Machine learning techniques for planning and process control
- Manufacturing process visibility and risk control
- Optimizing manufacturing systems based on predictive information
- Sustainable manufacturing
- Retail operations and platform economy
- Engineering, project, and production management
- Data-driven decision support systems in manufacturing real-time control
- Dynamic approaches to scheduling

Strong, new, and insightful conceptual and applications oriented studies that add significantly to the existing body of knowledge are particularly solicited. All papers submitted to the special issue will be peer reviewed in accordance with the standard procedures of the *Annals of Operations Research* (ANOR).

Instructions for authors can be found at:

<https://www.springer.com/journal/10479/submission-guidelines>

Submission start after MIM 2022. Deadline for submissions: **December 31, 2022**, via the Journal's online submission site. Manuscripts submitted after the deadline may not be considered for the special issue and may be transferred, if accepted, to a regular issue.

Please see the Author instructions on the web site if you have not yet submitted a paper through Springer's web-based system, Editorial Manager. When prompted for the article type, please select **Original Research**. On the Additional Information screen, you will then be asked if the manuscript belongs to a special issue, please choose the special issue's title, **Digital Manufacturing and Supply Chain: Creating Benefits Through Operations Research and Artificial Intelligence**, to ensure that it will be reviewed for this special issue.

Papers will be subject to a strict review process under the supervision of the Guest Editor, and accepted papers will be published online individually, before print publication.

Guest Editors:

<p>Prof. Dr. Erwin Pesch University of Siegen Faculty III Kohlbettstraße 15 57068 Siegen, Germany Email: erwin.pesch@uni-siegen.de</p>	<p>Prof. Dr. Alexandre Dolgui IMT Atlantique, LS2N, CNRS La Chantrerie, 4, rue Alfred Kastler, 44300 Nantes, France Email: alexandre.dolgui@imt-atlantique.fr</p>
<p>Prof. Dr. Dmitry Ivanov Professor of Supply Chain and Operations Management Berlin School of Economics and Law Badensche Str. 50 10825 Berlin, Germany Email: divanov@hwr-berlin.de</p>	<p>Prof. Dr. Tsan-Ming Choi (Jason) Professor and Yushan Fellow, Department of Business Administration, National Taiwan University Emails: jasonchoi@ntu.edu.tw; tsanming- choi@link.cuhk.edu.hk</p>
<p>Prof. Dr. Weiwei Chen Department of Supply Chain Management, Rutgers University Email: wchen@business.rutgers.edu</p>	