

## Call for Contributions

### 1. Inform the Chair

### 2. Submission URL:

<https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=PATTERNS+2023+Special>

Please select Track Preference as **DaMIA**

**3. Note:** *For 2023, all events will be held in a hybrid mode: on site or virtual choices (live, prerecorded videos, voiced presentation slides, and .pdf slides). We hope for better times allowing us to return to the traditional on site scientific events. However, we are ready to adapt any which way the conditions dictate.*

Special track

## DaMIA: Data Mining in Industrial Applications of Digital Twins

### Chair

Prof. Dr. Jens Weber, Faculty of Technology - Mechanical Engineering, Baden-Wuerttemberg Cooperative State University Loerrach/ Mercedes-Benz AG, Germany  
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### Deputy Chair

Jan Spoor, PhD student and research fellow of KIT (Karlsruhe Institute of Technology) and Mercedes-Benz AG, Germany  
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along with

## PATTERNS 2023, The Fifteenth International Conference on Pervasive Patterns and Applications

<https://www.iaria.org/conferences2023/PATTERNS23.html>

June 26 - 30, 2023 - Nice, Saint-Laurent-du-Var, France

In the past few years, great advances in the field of data mining have been made. Nevertheless, best practices developed by the research community are still not extensively implemented and applied in industry applications. This is the result, since methods are often developed, tested, and published for research purposes by, e.g., using carefully selected and cleansed data sets and by discussing an implementation only in very specific test scenarios. In addition, an implementation is often hindered by industry-specific challenges, in particular data availability and quality, scalability of methods for data lakes in IoT-applications, the necessary expertise and change management, and high implementation costs.

Lately, the development and the rollout of Digital Twins across different industries enables new possibilities for implementing data mining methods in a bigger scale and with higher economic impact in real world scenarios. Furthermore, data mining methods are an integral part of the success of Digital Twins in practice. For a successful implementation of data mining methods in Digital Twins, current challenges must be overcome by applied research extending state-of-the-art methods to tackle the real-world challenges of industrial applications. Thus, we want to discuss current challenges of an application of data mining during the development of Digital Twins and create applied solutions for upcoming tasks.

This special track creates a panel for leaders, researchers, industry practitioners, and potential users to drive further the development of this field by discussing emerging trends and opportunities, exchanging new ideas as well as tested best practices, and by promoting a transdisciplinary and cross-domain collaboration. We especially want to welcome applied research papers showing the capability of data mining methods on real data sets. Original theoretical contributions are also welcome.

**Suitable research topics for this special track** include, but are not limited to, the following areas:

- Data and Pattern Mining for Industrial Applications
- Data and Patter Mining for Fault Detection
- Predictive Maintenance
- Anomaly Detection in Industrial Applications
- Knowledge-based Systems
- Decision Support Systems
- Scheduling Tasks
- Information Security
- Quality Assessment
- Further Fields of Interest of Data Mining for Digital Twins

### **Contribution Types**

- Regular papers [in the proceedings, digital library]
- Short papers (work in progress) [in the proceedings, digital library]
- Posters: two pages [in the proceedings, digital library]
- Posters: slide only [slide-deck posted on [www.iaia.org](http://www.iaia.org)]
- Presentations: slide only [slide-deck posted on [www.iaia.org](http://www.iaia.org)]
- Demos: two pages [posted on [www.iaia.org](http://www.iaia.org)]

### **Important Datelines**

*Inform the Chairs: As soon as you decide to contribute*

Submission: May 11 (earlier, better)

Notification: May 29

Registration: June 8

Camera-ready: June 8

*Note: The submission deadline is somewhat flexible, providing arrangements are made ahead of time with the chair.*

### **Paper Format**

- See: <http://www.iaia.org/format.html>
- Before submission, please check and comply with the editorial rules:  
<http://www.iaia.org/editorialrules.html>

### **Publications**

- Extended versions of selected papers will be published in IARIA Journals: <http://www.iaiajournals.org>
- Print proceedings will be available via Curran Associates, Inc.: <http://www.proceedings.com/9769.html>
- Articles will be archived in the free access ThinkMind Digital Library: <http://www.thinkmind.org>

### **Paper Submission**

<https://www.iaiasubmit.org/conferences/submit/newcontribution.php?event=PATTERNS+2023+Special>

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### **Registration**

- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
- Registration fees are available at <http://www.iaia.org/registration.html>

### **Contacts**

#### **Chairs:**

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