

Call for Papers

SS06 - Machine learning in condition monitoring and prognostics of engineering systems

Organized and Co-Chaired by (sorted by last name)

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❖ **FOCUS.** The massive digitalization of industrial assets carried out in the last decade, allows now the deployment of industrial cyber-physical systems and IIoT architectures including advanced analytics capabilities to improve decision-making processes. In this regard, machine learning (ML) is being included as part of industrial maintenance procedures to improve anomaly detection, fault diagnosis and remaining useful lifetime prediction over assets. However, two main challenges have to be faced for an effective deployment of such ML-based procedures: first, the scalability, that is, hyperparameters selection procedures and interpretable training methods avoiding overfitted algorithms, and, second the reliability, that is, continuous learning approaches avoiding deviations between the supervision model and the operational drifts during the assets useful life.

❖ TOPICS

- ❖ Data-based industrial processes characterization,
- ❖ Automated novelty detection in industrial systems,
- ❖ Decision support systems and new information fusion structures,
- ❖ Condition monitoring and pattern recognition,
- ❖ Transfer learning and incremental learning methodologies,
- ❖ Forecasting and remaining useful life estimation,
- ❖ Data governance and regulations on machine learning in the industrial maintenance.

❖ **AIM.** The aim of the Special Session is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of condition monitoring and prognostics over engineering systems addressing generalization and continuous learning challenges.

❖ **CONFERENCE FORMAT.** The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations, as well as work-in-progress (WIP) and industry practice sessions.

❖ AUTHOR'S SCHEDULE (2023)

❖ Regular and special sessions papers

Submission deadline March 31
Acceptance notification May 5
Deadline for final manuscripts June 16

❖ Work-in-progress/Industry practice papers

Submission deadline May 12
Acceptance notification June 9
Deadline for final manuscripts June 16