



27th Conference of Open Innovations

## Association FRUCT

Trento, Italy, 7-9 September 2020

International Workshop on  
Predictive Maintenance (IWPM)



We welcome you to take part in the **IEEE FRUCT International Workshop on Predictive Maintenance (IWPM20)** that will be held in Trento (Italy) on 8 September 2020, in conjunction with FRUCT27 (<https://www.fruct.org/cfp>). The 27th FRUCT Conference is organized by University of Trento and the Open Innovations Association FRUCT, a large regional cooperation framework that promotes open innovations of academia and industry. Participants comes from Italy, Finland, Russia, UK, Denmark, India, and other countries and industry is primary represented by Dell EMC, Nokia, MariaDB, Intel, Jolla, Open Mobile Platform, Skolkovo, etc.

### Overview

Predictive maintenance is a new trend in research and industry involving several application domains. Where in standard maintenance models the maintenance procedures follow the failure or are scheduled at fixed time intervals, in Predictive maintenance monitoring data and measurement of process performance are used to trigger equipment maintenance. This data is often used in conjunction with analysed historical trends to evaluate the system health and predict breakdowns before they happen. This approach is based on fast analysis of large amount of data, as such it needs accurate and complete information for optimal decision-making. As big data technology is getting mature, systematic analysis of massive streaming data and more advanced Machine Learning techniques have been employed for exploring hidden patterns in the monitoring data.

Predictive maintenance has found its place in many industrial sectors, with automotive leading the way to introduce more involved approaches that both help in scheduling maintenance procedures and suggest plans of action to mitigate failures. This research area finds strong links with recent methodologies and industry trends such as the Internet of Things, to extract actionable insights directly from the equipment, and Digital Twins, digital replicas of the equipment to model its state and simulate its performance.

The topics of interest include, but are not limited to the following subject areas:

- Predictive maintenance using AI, Deep Learning, Machine Learning
- Modelling and optimization of processes
- Condition-based monitoring and decision support systems
- Time series based predictive maintenance
- Predictive maintenance with online data
- Fault detection and diagnosis
- Prescriptive maintenance model for decision support
- Digital Twins for fault simulation and analysis
- Estimation of Remaining Useful Life of components
- Data visualization for predictive maintenance

We welcome researchers as well as industry stakeholders to submit papers and take part in the workshop to share their research and findings. Early registration is a cost effective way to participate in the Workshop and the 27th FRUCT conference. All workshop papers will be published Open Access in FRUCT proceedings (available for free under a CC BY-ND license download from FRUCT proceedings catalog). Posters and demos can be presented on the Demo Session (8 September 2020).

### Call for papers and presentations

You can select one of the following 3 types of submissions:

- Full papers (min 6 full pages and up to 12 pages), deadline June 15, 2020;
- Short papers (min 2, max 6 pages), deadline June 15, 2020;
- Poster or demo summary (min 200 words, max 4 pages), by August 31, 2020.

All papers must include references in the allotted page limits. Please note that an author can be a coauthor of a maximum of three documents of all types.

### Publication

Papers and posters will be published in FRUCT proceedings. Full papers will be also submitted to IEEE Xplore and indexed by Scopus, ACM and DBLP. Selected papers are recommended for CPCI indexing (Web of Science).

### Important dates

- Conference dates: 7-9 September 2020
- PreMan workshop: 8 September 2020
- Short/Full Paper submission deadline: 15 June 2020
- Notification of acceptance date: 6 July 2020
- Camera-ready submission deadline: 13 July 2020
- Authors registration deadline: 13 July 2020
- Demos/Posters submission deadline: 31 August 2020