1ˢᵗ International Workshop on Digital Twins for Business Processes (DT4BP)

https://pros.unicam.it/dt4bp2022

Co-located with
The 20th IEEE International Conference on Pervasive Intelligence and Computing (PICom 2022) Calabria University, Italy, 12-15, September 2022
http://cyber-science.org/2022/picom

Scope and Objective

In the last years, the Internet of Things has been adopted in several sectors, influencing and enhancing how people and organisations work leading to the establishment of the term IoT-aware business process. Such a concept is now pushed forward by the rise of digital twins that have become more affordable and promise to drive the future of business processes.

Advanced ways of managing and maintaining business processes come within reach as there is a **Digital Process Twin** of the real process with real-time capabilities. A digital process twin is a virtual replica of the near-time process occurrences in an organization. Thousands of sensors are being placed to monitor physical processes, all collecting data from different dimensions, such as environmental conditions, behavioural characteristics of machines and their users, and work that is being performed. All this data is continuously collected, elaborated and exchanged in such a way to guide day-to-day organization activities.

Digital process twins, together with the advancement in Artificial Intelligence and Edge Computing, offer a great amount of business potential by predicting the future instead of analyzing the past of the processes. The representation of reality created by digital process twins allows us to evolve towards ex-ante business practices.

The objective of the **DT4BP** workshop is to attract researchers and industry practitioners to discuss the continuous enhancement of business processes including IoT aspects, up to the concept of **Digital Process Twin,** and present open challenges, state of the art, in-progress research, and practical experiences, including case studies.

The workshop is co-located with *the 20th IEEE International Conference on Pervasive Intelligence and Computing (PICom 2022)* within *IEEE CyberSciTech / PICom / DASC / CBDCom 2022* (http://cyber-science.org/2022/).

List of Topics

The topics of the workshop include, but are not limited to:

- Management of Digital Process Twins
- Conceptual Modelling of Digital Twins
- Framework Definition for Digital Process Twins
- Digital Process Twins Simulation
- Digital Process Twins for What-if Process Analysis
- Quality Assurance of Digital Process Twins

- Enactment of Digital Process Twins
- Collaboration among Digital Process Twins
- Interaction and cooperation between Digital Twins and Humans
- Complex system architectures for Digital Process Twins
- Smart grids, smart cities, IoT systems and Digital Process Twins
- AI and Edge Computing approaches for Digital Process Twins
- Practical validation and case studies of Digital Process Twins

Submission Guidelines

We welcome two kinds of publications: *Regular papers* and *Extended abstracts*.

- **Regular papers** (max 6 pages, including references) present a technical contribution, case study, or detailed experience report. We welcome both complete and incomplete technical results; ongoing work is particularly welcome, provided it is substantial enough to stimulate interesting discussions.
- **Extended Abstracts** (max 4 pages, including references) should advocate a promising research direction, or otherwise present a position likely to stimulate discussion at the workshop. We encourage e.g. established researchers to set out a personal vision, and beginning researchers to present a planned path to a PhD.

Papers must be submitted thorugh the EasyChair conference submission link (https://easychair.org/conferences/?conf=dascpicomcbdcomcyber) by choosing "PICom / Workshop on Digital Twins for Business Processes". All submissions must follow the IEEE CS proceedings format, and all accepted papers will be published by IEEE (IEEE-DL and EI indexed) in Conference Proceedings. IEEE formatting information (https://www.ieee.org/conferences/publishing/templates.html).

Each accepted paper must be presented at the conference by one of the co-authors or a third party.

Selected high quality papers will be recommended to journal special issues.

Important Dates

- Abstract Submission (recommended) Due: **May 27, 2022**
- Submission Due: **June 1, 2022**
- Author Notification Due: **July 1, 2022**
- Camera-ready Submission: **July 15, 2022**
- Workshop: **September 12-15, 2022** (exact day to be confirmed)

Organizing committee

- Fabrizio Fornari, University of Camerino, Italy
- Pedro Valderas, Universitat Politècnica de València, Spain

Program committee

- Flavio Corradini, University of Camerino, Italy
- Dimitris Karagiannis, Universität Wien, Austria
- Knut Hinkelmann, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland
- Barbara Re, University of Camerino, Italy
- Emanuele Laurenzi, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland
- Robert Andrei Buchmann, Universitatea Babeș-Bolyai, Romania
- Antonella Guzzo, University of Calabria, Italy
- Estefanía Serral, KU Leuven, Belgium
- Victoria Torres, Universidad Politécnica de Valencia, Spain
- Andrea Polini, University of Camerino, Italy
- Andrea Vandin, Sant'Anna School of Advanced Studies, Italy
- Abel Armas Cervantes, University of Melbourne, Australia
- Claudio Savaglio, Italian National Research Council (CNR)-ICAR, Italy

Contact

All questions about submission should be emailed to Fabrizio Fornari (fabrizio.fornari@unicam.it) or to Pedro Valderas (pvalderas@dsic.upv.es)