2019 SM²N Workshop

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Welcome to the 2019 SM²N Workshop!

The 1st International Workshop on Smart Manufacturing Modeling and Analysis (SM²N) was held on Monday, April 15 and was collocated with CPS-IoT Week 2019 in Montreal, Quebec, Canada.

Workshop Overview

Today's manufacturing paradigm is in the midst of a transformation towards smart manufacturing, driven by the generation and analysis of high-volume data coming from interconnected cyber-physical components. This has necessitated an advancement in a number of the tenets of smart manufacturing such as Industrial Internet of Things (IIoT), Artificial Intelligence (AI), anomaly detection, security of industrial plants, novel communication infrastructures, etc. Among the many Smart Manufacturing tenets, a "digital twin" (DT) represents an opportunity to leverage existing and emerging technologies in modeling, simulation and emulation - to improve quality, productivity, and the ability to customize, and reduce energy consumption and waste. While DTs might help address many key performance and effectiveness metrics in manufacturing, however the science needs to be better understood in terms of definitions, capabilities, metrics, technical challenges and potential solutions. There exist some academic and industry efforts that aim to tackle this problem, but more is required. In addition, digital twins are just one way to model theses type of systems; to improve the overall design, efficiency and even security of future manufacturing systems, there is a need for new science that can capture/explain their behavior and new tools for modeling them.

In this workshop, we intend to bring together multidisciplinary researchers and engineers (from academia, industry, as well as standards organizations) from a broad range of fields (manufacturing, control, cyber-security, networking) to provide an overview of the latest advances in the modeling and analysis of smart manufacturing systems. This area (smart manufacturing and especially modeling/analysis) has not received much focus but is an important area, not just from the research perspective but also from societal impact. It includes all the elements of a classic cyber-physical systems domain, in addition to IoT (industrial IoT).

This group provides access to documents relevant to the workshop, including presentation slides and videos of the speakers and panel. For access to the main workshop page, please visit: https://synercys.github.io/sm2n.

CPS-IoT Week 2019 2019