

Editorial

# The Second International Conference on Computational Engineering and Intelligent Systems (ICCEIS2022) †

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## 1. Introduction

Multidisciplinary engineering is currently a proliferating area, whereby focus is placed upon an engineering practice which combines several academic disciplines. Computational engineering is a modern and multidisciplinary science for computer-based modeling, simulation, analysis, and optimization of complex engineering applications and natural phenomena. Regarded as the intersection of computer science and applied math, computational engineering deals with mathematical techniques for the modeling and simulation of complex systems, parallel programming and collaborative software development, and methods for organizing, exploring, visualizing, processing, and analyzing extensive datasets. Computational engineering includes fundamental engineering and science, as well as an advanced knowledge of mathematics, algorithms, and computer languages. On the other hand, intelligent systems engineering offers the next generation of solutions through creating systems that sense and react to their environments via computing and artificial intelligence. Intelligent systems are technologically advanced machines that are designed to respond to some specific requirements.

The aim of this conference is to bring together scientists, researchers, and industrialists to share knowledge and findings with regard to the conference topics. The purpose is to provide a platform for a possible collaboration and exchange of ideas to further advance in this field.

Topics of interest concern, but are not limited to, the following: biomedical engineering and applications; the computational study of biological systems; climate modeling; energy systems; modeling and simulation; multiphysical models and co-simulation; cybersecurity; data science and engineering; high-performance computing; optimization; multiagent systems; evolutionary computation; artificial intelligence; complex systems; computational intelligence and soft computing; intelligent control; advanced control technology; robotics and applications; intelligent information processing; iterative learning control; machine learning; and smart grids and systems.

## 2. Conference Digest

Peer-review process and regulations: The review process was single blinded. The main criteria of acceptance were the originality, the clarity of the presentation, and the findings.

The conference took place over two days. The program included one keynote with a question and answer (Q&A) session. A total of 20 papers were scheduled. Eighteen of these papers were presented online.

A plenary presentation was delivered by Prof. Hamid Bentarzi from the Laboratory of Signals and Systems, Institute of Electrical and Electronic Engineering, University M'hamed



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Bougara of Boumerdes in Algeria. His contribution entitled “Micro-Synchro-Phasor Measurement Unit: Developments and Trends” stressed that the existing PMU can only be used in transmission grids. However, the  $\mu$ SPMU is also able to store synchrophasor measurements and communicate real-time data at the distribution level of the power grid. This keynote presented two main points:

- (1) The development of a  $\mu$ PMU with the precise time-stamping of measurements via GPS to allow the comparison of voltage phase angle,  $\delta$  (i.e., the precise timing of the voltage waveform), at different locations on the hardware. On the software, the development of a new computational framework to manage large, high-density data streams with nanosecond time-stamping and online capabilities that avoids the need for phasor data concentrators.
- (2) The development of many practical applications using this new type of information provided by a  $\mu$ PMU in the distribution network context, including the integration of an intermittent renewable generation such as distributed control, adaptive protection, and the cybersecurity of the electric grid.

Seventeen papers were submitted to the conference and are published in a Special Issue of MDPI's *engineering proceedings* [1–4].

### 3. Committees

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The late Professor Larbi REFOUFI.
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