

Newsletter



NOVEMBER 2023

The Hong Kong Society of Robotics and Automation

WWW.HKSRA.ORG

2023 INTERNATIONAL CONFERENCE ON BIG DATA AND BLOCKCHAIN

ICBDB 2023

NOV. 17-19, 2023

ONLINE



KEYNOTE SPEAKER

PROF. PHILIPPE FOURNIER-VIGER

Shenzhen University, China

Philippe Fournier-Viger (Ph.D) is a Canadian researcher, distinguished professor at Shenzhen University (China). Five years after completing his Ph.D., he came to China in 2015 and became full professor after receiving a talent title from the National Science Foundation of China. He has published more than 375 research papers related to data mining algorithms for complex data (sequences, graphs), intelligent systems and applications, which have received more than 13,000 citations.

Speech Title:

Advances and Challenges for the Automatic Discovery of Interesting Patterns in Data

Abstract: Intelligent systems and tools can play an important role in various domains such as for factory automation, e-business, and manufacturing. To build intelligent systems and tools, high-quality data is generally required. Moreover, these systems need to process complex data and can yield large amounts of data such usage logs, images, videos, and data collected from industrial sensors. Managing the data to gain insights and improve these systems is thus a key challenge. It is also desirable to be able to extract information or models from data that are easily understandable by humans. Based on these objectives, this talk will discuss the use of data mining algorithms for discovering interesting and useful patterns in data generated from intelligent systems and other applications.

SAMDE 2023

2023 4th International Symposium on Automation, Mechanical and Design Engineering

Keynote Speaker |

Prof. Xingjian Jing

City University of Hong Kong, China



Speech Title:

Analysis and Design of Nonlinear Damping and its Applications

Abstract:

Nonlinearity can take an important and critical role in engineering systems and thus cannot be simply ignored in structural design, dynamic response analysis, and parameter selection.

A key issue is how to analyze and design potential nonlinearities introduced to or inherent in a system of under study, which is greatly demanded in many practical applications involving vibration control, energy harvesting, sensor systems and robots etc. This talk will present up-to-date development on nonlinear damping analysis and design based on a novel approach recently established, i.e., the X-shaped structure/mechanism method. It is shown that, superior nonlinear damping properties can be obtained with this X-shaped structure; a novel X-absorber is thus developed which can significantly enhance overall vibration suppression performance and robust subject to change of parameters, excitations, and/or nonlinearities; and a compact X-mount can also be designed with special oblique springs for wider quasi-zero-stiffness (QZS) range. These results definitely provide unique insights into technical innovation of passive or active vibration control in various engineering practices.



SAMDE

2023

Keynote Speaker II



Prof. Giuseppe Carbone—University of Calabria, Italy

Speech Title:

Examples of innovative robotic and mechatronic designs with embodied intelligence

Abstract:

Robots are widely used for a number of tasks ranging from conventional industrial applications to service robotics. Researchers aim to further spread robots by improving their performance and/or by finding novel potential applications. These challenging goals can be conveniently achieved by carefully and systematically considering them from the early design stages. This presentation outlines a general procedure for conveniently developing innovative robots for specific applications. This is achieved by identifying appropriate quantitative design specifications. It also requires establishing proper simulation models as well as implementing them in specific optimal design procedures. This considers embodied intelligent solutions to fulfill the desired operation with cost-oriented user-friendly features. Illustrative examples are outlined to show the feasibility and practical usefulness of this approach as referring to recent designs such as parallel/hybrid manipulators, humanoid robots, cable-driven robots for conventional or non-conventional applications including healthcare, agriculture, cultural heritage/space exploration.

Publication

Accepted and presented papers of SAMDE 2023 will be published in Mechanisms and Machine Science (ISSN 2211-0992), which will be submitted to EI Compendex, Scopus, INSPEC, Google Scholar and other major databases for indexing.

