



10<sup>th</sup> International Conference on Control,  
Decision and Information Technologies

July 01 - 04, 2024

Valletta, Malta

## CALL FOR PAPERS - SPECIAL SESSION

### “Stochastic Systems and Control with Emerging Applications”

for **CODIT 2024**

**July 01-04, 2024** ▪ **Valletta, Malta**

#### Session Co-Chairs:

Prof. Bozenna Pasik-Duncan, University of Kansas, USA (E-mail: [bozenna@ku.edu](mailto:bozenna@ku.edu))

Prof. Lukasz Stettner, Polish Academy of Science, Poland (E-mail: [L.Stettner@impan.pl](mailto:L.Stettner@impan.pl))

Prof. George Yin, University of Connecticut, USA (E-mail: [gyin@uconn.edu](mailto:gyin@uconn.edu))

#### Session description:

The purpose of this session is to present recent advances in stochastic modeling and control, stochastic games, mathematical methods and interdisciplinary computing, estimation and system identification, nonlinear filtering, and innovative ideas and technology in emerging applications.

Areas of interest include, but are not limited to :

- stochastic modeling and control
- parameter estimation and system identification
- Monte Carlo optimization
- mathematics of finance
- financial engineering
- computational methods and machine learning
- statistical data science
- applications in industrial mathematics-engineering
- integrating research and teaching
- controlled jump diffusions
- nonlinear filtering
- mean-field games and control
- Markov decision processes
- stochastic approximation
- stochastic networks
- stochastic adaptive control
- risk sensitive stochastic control
- hybrid stochastic control problems
- stochastic modeling in biology, ecology and neuroscience
- manufacturing and stochastic control
- stochastic modeling in social networks
- stochastic control with applications to economic systems, risk management and actuarial sciences

#### Motivation :

In the new era, stochastic systems and control play increasingly important roles. They are used in emerging application areas such as economics systems, risk management, biology, ecology, neuroscience, actuarial and environmental sciences, social networks, to mention just a few among others. A noise in the systems cannot be disregarded as there are examples showing that a noise can stabilize or destabilize the system. This is particularly important in rapidly advanced biomedical and financial engineering areas but also in all areas where measurements carry on errors.

Mathematical statistics and probability with a good understanding of randomness in big data, modeling and analyzing it, making properly statistical inferences are must learn for students along with programming languages now and for the next ten years, illustrative examples include societal and autonomous systems, infectious disease systems, universal access to technology that includes ethics, security, privacy, data-driven and physics-driven diversity in approaches that lead to ML and to AI. Stochastic systems and control is an interdisciplinary field that spans all STEM fields. It requires collective and collaborative efforts and diversity in ideas, approaches, methods, and tools in problem solving. This session is expected to bring enthusiastic, passionate research innovators and educators with diverse backgrounds, contributions and with established record of attracting students and young professionals to stochastic systems and control.

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#### **SUBMISSION**

Papers must be submitted electronically for peer review through PaperCept by **March 04, 2024:** <http://controls.paperecept.net/conferences/scripts/start.pl>. In PaperCept, click on the **CoDIT 2024 link "Submit a Contribution to CoDIT 2024" and follow the steps.**

**IMPORTANT:** All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).

#### **DEADLINES**

**February 03, 2024:** deadline for paper submission

**April 14, 2024:** notification of acceptance/reject

**May 10, 2024:** deadline for final paper and registration