Special Session: Intelligent Algorithms for Decision Making Under Uncertainty

Dear Colleagues,

In the ever-evolving landscape of technology and data, decision-making processes are increasingly confronted with uncertainty. The present Special Session, *"Intelligent Algorithms for Decision Making Under Uncertainty"*, aims to bring together recent advancements in intelligent algorithms designed to navigate and optimize decision-making under uncertain conditions. Leveraging methodologies such as machine learning, artificial intelligence, statistical methods, and computational techniques, these algorithms address challenges across diverse fields, including industry, finance, healthcare, engineering, and logistics.

The complexity of today's business environment further emphasizes the importance of such intelligent tools. Managers face unprecedented challenges in predicting outcomes due to political instability, inflation, demographic shifts, and global uncertainties. This session aims to stimulate the development of innovative, optimal solutions for effective management under such conditions, fostering resilience and adaptability in decision-making processes.

Topics of Interest

We invite high-quality submissions on the following (but not limited to) topics:

- Intuitionistic fuzzy logic and its applications in decision-making problems
- Development and application of intelligent algorithms for decision-making
- Optimization techniques for uncertain decision problems
- Machine learning and AI methodologies enhancing decision models under uncertainty
- Probabilistic models and inference
- Stochastic processes and simulations
- Theoretical models and computational techniques for decision support under uncertainty
- Real-world applications of intelligent decision models in industry, healthcare, finance, engineering, logistics, and beyond

We look forward to your contributions that will advance this dynamic and impactful field.

Thematic Organizers of the section

Chief organizer of the section

Associate Professor Dr. Velichka Traneva, Faculty of natural sciences, Burgas, Bulgaria

E-Mail veleka13@gmail.com

Associate Professor V. N. Traneva has Ph.D. in Informatics of Bulgarian Academy of Sciences, holds a Master's degree in Finance and Mathematics and professional qualification Manager at Sofia University "Saint Kliment Ohridski", Bulgaria. She is a co-author of numerous publications in area of Mathematics and Informatics taking into account uncertainty in the environment. Her interests are in the field of mathematical modelling, optimization and informatics.

Interests: intuitionistic fuzzy sets; intercriteria analysis; decision making under uncertainty; optimal algorithms; transportation problems.

Organizer of the section

Associate Professor Dr. Stoyan Tranev, Faculty of social sciences, Burgas, Bulgaria

E-Mail tranev@abv.bg
Chair of section

Associate Professor S. T. Tranev has Ph.D. in Organization and Management of Production of University "Prof. Dr. Assen Zlatarov", Bulgaria, holds a Master's degree in Marketing and Management and professional qualification Mediator in Conflictology to International Academy under Informatization, Institute under conflictology. He is a co-author of numerous publications in Economics. His interests are in the field of management and conflictology.

Interests: conflictology; intuitionistic fuzzy sets; intercriteria analysis; decision making under uncertainty; industrial management; optimal algorithms.

Organizer of the section

Associate Professor Dr. Venelin Todorov, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Sofia, Bulgaria
 E-Mail venelintodorov@gmail.com

Associate Professor V. L. Todorov has a Ph. D. in Applied Mathematics of Bulgarian Academy of Sciences, holds a Master's degree in Applied Mathematics at Sofia University "Saint Kliment Ohridski", Bulgaria. He has been awarded with Grand Prize Pythagoras of Ministry of Education and Science for young scientists up to 35 years old for 2021 and the John Atanassov Award of the President of the Republic of Bulgaria for 2021.
Interests: Monte Carlo for solving multidimensional integrals, integral equations and linear systems; algorithms for solving large-scale problems.

Organizer of the section

Associate Professor Dr. Ivan Georgiev, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Sofia, Bulgaria
E-Mail irgeorgiev@math.bas.bg

Associate Professor I. R. Georgiev has a Ph. D. in Applied Mathematics of University of Ruse, holds a Master's degree in Information and educational technologies at Ruse University, Bulgaria. He is a co-author of numerous publications in area of Mathematical and informatical modelling in logistics and transport; optimization and scheduling theory; predictions in financial mathematics.
Interests: logistics, transportation and manufacturing processes; scheduling theory; modeling and forecasting in financial mathematics; numerical methods for partial and ordinary differential equations.
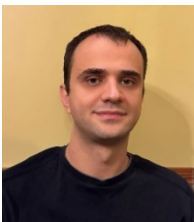
Organizer of the section

Chief Assistant Professor Dr. Slavi Georgiev , Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Sofia, Bulgaria
 E-Mail sggeorgiev@math.bas.bg

Chief Assistant Professor S. G. Georgiev has a Ph. D. in Financial Mathematics of University of Ruse, holds a Master's degree in Financial and Engineering Mathematics at University of Ruse, Bulgaria. He is a co-author of numerous publications in area of Mathematical and informatical modelling in computational finance and real processes.
Interests: , pricing and calibrating financial derivatives; numerical methods for partial and ordinary differential equations with applications in computational finance, mathematical modelling of natural and anthropogenic phenomena as: pollutant transfer in air and water environment; honeybee population dynamics; contagious diseases spread.

Organizer of the section

Chief Assistant Professor Dr. Stoyan Apostolov, Faculty of Mathematics and Informatics, Sofia University, Sofia, Bulgaria
E-Mail stoyanrapostolov@gmail.com

Chief Assistant Professor S. Apostolov has a Ph. D. in Variational analysis in Sofia University, holds a Master's degree in variational analysis in Sofia University, Bulgaria. He is a co-author of numerous publications in area of Mathematical and informatical modelling in real processes.
Interests: Real analysis, variations analysis and optimisation, stochastic methods for numerical computation.