

# Special Issue

## Modern Trends in Computation and Control in Autonomous Robotics Systems

### Message from the Guest Editor

As our society rapidly evolves into the robot era, autonomous robot technologies become one of the key technologies to enable the robots to seamlessly integrate into human society. This special issue aims to address the fundamental computation and control challenges faced by the rapidly evolving autonomous robotics systems and expects to have profound impacts on both the applications and the research of such systems. The primary goal of this special issue is to explore and disseminate the novel ideas and research in the diverse aspects of autonomous robotics systems.

- classic and emerging control theories and practices for the autonomous robotic systems
- computational methods for sensor data fusion and interpretation
- machine learning techniques for object detection and recognition
- Simultaneous Localization and Mapping (SLAM) algorithms and frameworks
- path planning algorithms and optimization techniques
- adaptive and learning-based navigation strategies
- AI-driven decision-making and planning in robotics
- computational approaches for ensuring safety in autonomous systems
- verification and validation of autonomous robotic algorithms

---

### Guest Editor

Dr. Yujiong Liu

Robotics and Mechatronics Lab, Virginia Tech College of Engineering, Blacksburg, VA 24061, USA

---

### Deadline for manuscript submissions

closed (31 October 2025)



## Mathematics

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.2  
CiteScore 4.6



[mdpi.com/si/210819](https://mdpi.com/si/210819)

*Mathematics*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[mathematics@mdpi.com](mailto:mathematics@mdpi.com)

[mdpi.com/journal/  
mathematics](https://mdpi.com/journal/mathematics)





# Mathematics

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.2  
CiteScore 4.6



[mdpi.com/journal/  
mathematics](https://mdpi.com/journal/mathematics)



## About the Journal

### Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

---

### Editor-in-Chief

Prof. Dr. Francisco Chiclana  
School of Computer Science and Informatics, De Montfort University,  
The Gateway, Leicester LE1 9BH, UK

---

### Author Benefits

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

#### Journal Rank:

JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.3 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).