

**ICPR-2026**  
**10<sup>th</sup> International Workshop**  
**”Image Mining. Theory and Applications”**  
**IMTA-X-2026**

August 21, 2026 | In-person and online  
<http://imta.isti.cnr.it/>

*Organized in conjunction with the 28th International Conference on Pattern Recognition,  
Lyon, France, August 17-22, 2026*  
(<https://icpr2026.org>)

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**The IMTA-X-2026 will be conducted by the Technical Committee No. 16 “Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis” of the International Association for Pattern Recognition and by the National Committee for Pattern Recognition and Image Analysis of the Russian Academy of Sciences.**

The main purpose of the IMTA-X-2026 workshop is to provide the fusion of modern mathematical approaches and techniques for image analysis/pattern recognition with the requests of applications using an image as an initial data representation.

**The workshop is intended to cover, but it is not limited to, the following topics:**

- **Methodological advances in image analysis and pattern recognition;**
- **New Mathematical Techniques in Image Mining;**
- **Image Models, Representations and Features;**
- **Automation of Image and Data Mining;**
- **Automated Analysis and Processing of Ill-Structured Uncomplete Contradictory Data Including Images, Signals, Texts and Noise;**
- **Artificial Intelligence Techniques in Image Mining;**
- **Applied problems.**

**The IMTA-X-2026 will continue the successful series of workshops devoted to new and modern mathematical techniques of image mining and to corresponding applications:**

- IMTA-I-2008, Funchal, Madeira, Portugal, in conjunction with the 3rd International Conference on Computer Vision Theory and Applications (VISAPP 2008);
- IMTA-II-2009, Lisboa, Portugal, in conjunction with the 4th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP 2009);
- IMTA-III-2010, Angers, France, in conjunction with the 5th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP 2010);
- IMTA-IV-2013, Barcelona, Spain, in conjunction with the 8th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP 2013);
- IMTA-V-2015, Berlin, Germany, in conjunction with the 10th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP 2015);
- IMTA-VI-2018, Montreal, Canada, in conjunction with the 1st International Conference on Pattern Recognition and Artificial Intelligence (ICPRAI 2018);
- IMTA-VII-2021, Milan, Italy, in conjunction with the 25th International Conference on Pattern Recognition (ICPR 2020);
- IMTA-VIII-2022, Montréal, Québec, Canada, in conjunction with the 26th International Conference on Pattern Recognition (ICPR 2022);
- IMTA-IX-2024, Kolkata, India, in conjunction with the 27<sup>th</sup> International Conference on Pattern Recognition (ICPR 2024).

**The workshop will consist of keynote talks, contributed talks, posters and informal discussions.**

### **Scope**

**Automation of image mining is one of the most important strategic goals in image analysis, recognition and understanding both in scientific and technological aspects. The main subgoals are developing and applying of mathematical theory for constructing image models and representations allowable by efficient pattern recognition algorithms and for constructing standardized representations and selection of image analysis transforms.** Automation of image mining is possible by combined application of mathematical theory of image analysis/understanding/recognition and mathematical theory of pattern recognition.

Automation of image processing, analysis, estimating and understanding is one of the crucial points of theoretical computer science having decisive importance for applications, in particular, for diversification of solvable problem types and for increasing the efficiency of problem solving.

**The role of an image as an analysis and estimation object is defined by its specific and inalienable informational properties.** Image is a mixture and a combination of initial (raw, “real”) data and its representation means of computational procedures and of the physical nature and of the models of objects, events and processes being represented via an image.

**The specificity, complexity and difficulties of image analysis and estimation (IAE) problems stem from necessity to achieve some balance between such highly contradictory factors as goals and tasks of a problem solving, the nature of visual perception, ways and means of an image acquisition, formation, representation, reproduction and rendering, and mathematical, computational and technological means allowable for the IAE.**

The mathematical theory of image analysis is not finished and is passing through a developing stage. It cleared not so long ago that only intensive creating a comprehensive mathematical theory of image analysis and recognition (in addition to the mathematical theory of pattern recognition) could bring a real opportunity to solve efficiently application problems via extracting from images the information necessary for intelligent decision-making. The transition to practical, reliable and efficient automation of image mining is directly dependent on introducing and developing mathematical means for IAE.

**The participants will enjoy the opportunity to discuss a methodology, mathematical and computational techniques for automation of image mining on the base of mathematical theory for IAE.** Another important task of the workshop is to discuss artificial intelligence techniques, in particular, linguistic and knowledge engineering tools for image mining – image knowledge bases and image science ontologies – and to estimate the prospects of the algebraic approaches in representation of image analysis knowledge in this environment. **The interpretation of mathematical and linguistic techniques will be illustrated by application problems, mainly from biology and medicine, automation of scientific research, industrial applications and of many other domains generating breakthrough and difficult application tasks.**

## **Topics**

### **A. Methodological Advances in Image Analysis and Pattern Recognition with a Special Focus on:**

- A.1 Algebra
- A.2 Discrete mathematics
- A.3 Computational Topology
- A.4 Machine Learning

### **B. New Mathematical Techniques in Image Mining**

- B.1 Algebraic Approaches
- B.2 Image Algebras, Descriptive Image Algebras and Lattice Algebras
- B.3 Lattice-based Deep Hierarchical Representations and Neural Networks
- B.4 Discrete Mathematics Techniques
- B.5 Descriptive Image Analysis
- B.6 Ill-Structured Data Representation and Processing Problems
- B.7 Structural and Syntactic Techniques
- B.8 Multiple Classifiers and Fusion of Algorithms
- B.9 Pattern Recognition Techniques in Image-Mining Environment
- B.10 Other Mathematical Techniques

### **C. Image Formalization Space**

- C.1 Metrics and Relations
- C.2 Image Models
- C.3 Image Representations
- C.4 Image Features
- C.5 Spatial Data Representations
- C.6 Dual Image Representations

#### **D. Automation of Image and Data Mining**

- D.1 Image and Ill-Structured Data Analysis
- D.2 Image Mining, Computer Vision and Knowledge-Based Systems
- D.3 Image Databases
- D.4 Image Mining Technologies

#### **E. Artificial Intelligence Techniques in Image Mining**

- E.1 Knowledge Representation, Processing, Extracting and Analysis
- E.2 Image Knowledge Bases
- E.3 Linguistic Tools for Image Mining (Image Science Ontologies; Image Science Thesauri)

#### **F. Applied Problems**

- F.1 Bioinformatics
- F.2 Bioengineering
- F.3 Medical applications
- F.4 Industry and Economics
- F.5 Cultural Heritage
- F.6 Other Important, Difficult and Interesting Applied Problems

#### **Intended audience**

Professionals, researchers and engineers, PhD students and graduate students interested in Mathematical Theory of Image Analysis, in Problem-Solving via modern mathematical techniques, in intellectual decision-making, designers of automated image analysis systems.

#### **Important Dates**

- Workshop submission deadline: **June 1, 2026**
- Workshop author notification: **June 10, 2026**
- Camera-ready paper: **June 20, 2026**
- Early bird registration deadline: **June 17, 2026**
- Workshop date: **August 21, 2026**

#### **Workshop Proceedings**

**Publication 1:** The conference workshop proceeding will be published in the Lecture Notes in Computer Science (LNCS) series (electronic publication).

**Publication 2: Selected Extended** version of the papers will be published in the Special Issue “Proceedings of IMTA-X-2026” in International Journal of the Russian Academy of Sciences “Pattern Recognition and Image Analysis. Advances in Mathematical Theory and Applications” (PRIA, Vol. 36, No. 4, 2026). The corresponding notification will be sent to the authors in

appropriate time. Final submission of extended papers for publication: October 15, 2026. Each paper in PRIA has DOI.

PRIA:

- the Publisher - Pleiades Publishing, Ltd.;
- ISSN PRINT: 1054-6618, ISSN ONLINE: 1555-6212;
- distributed worldwide by Springer;
- abstracted and/or indexed in the Web of Sciences (Q4), SCOPUS (Q3), Russian Science Citation Index (Core), ACM Digital Library, Baidu, CLOCKSS, CNKI, CNPIEC, Dimensions, EBSCO, EI Compendex, Emerging Sources Citation Index, Google Scholar, INSPEC, Japanese Science and Technology Agency (JST), Naver, OCLC WorldCat Discovery Service, Portico, ProQuest, SCImago, TD Net Discovery Service, Wanfang.

See PRIA – <http://pleiades.online> and <http://link.springer.com>

### **Paper Submission**

We invite submissions of papers describing work in the domains suggested above or in closely related areas.

The paper should be submitted **in English** via Microsoft Conference Management Toolkit (CMT): <https://cmt3.research.microsoft.com/IMTA2026>

A paper should not exceed 15 pages including references. If the paper exceeds 15 pages, you must pay 150€ for each additional page. Only full papers (more than 6 pages) will be published in the proceeding.

Springer LNCS paper formatting instructions and templates for ICPR-2026 are available here [DOC](#) and [Latex](#).

### **Ethical Requirements**

By submitting to IMTA-X-2026, the authors acknowledge that the submitted paper has not previously and is not currently accepted for publication in its current form. This includes, but is not limited to, any conference, workshop, journal or collection of papers.

The paper will be presented in person by its author(s).

IMTA-X-2026 may remove any papers violating these requirements.

### **Paper Reviewing Process**

All papers will be peer-reviewed. The criteria for accepting the papers will be as follows:

- the paper is focused on the IMTA-X-2026 topics and presents new methods in image mining;
- the paper increases the impact of image mining methods in applications, e.g. providing new technique for an old application problem, or a new application for a known technique;
- the paper increases the awareness and comprehension about the image mining theory providing novel research perspectives possibly merging with other domains.

**Registration Information**

The registration information concerning the participation in IMTA-X-2026 and/or ICPR 2026 is at the ICPR 2026 website.

<https://icpr2026.org/registration>

A full workshop registration covers up to 3 workshop papers and that a full conference registration covers up to 3 conference or workshop papers.

**Workshop Contact**

All questions and requests for additional information should be sent to [imta@isti.cnr.it](mailto:imta@isti.cnr.it).