



TIME 2023

**30th International Symposium on Temporal
Representation and Reasoning**

25-26 September 2023

NCSR Demokritos, Athens, Greece



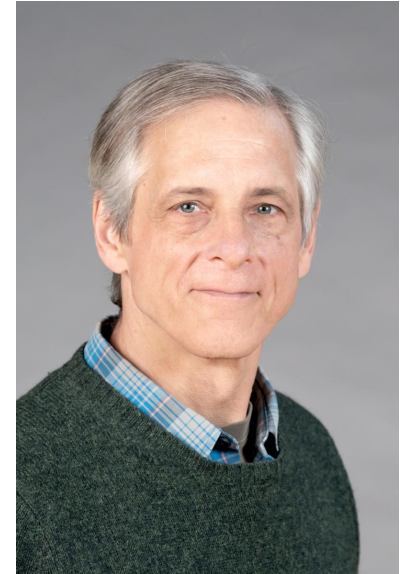
Programme Committee Chairs



Alexander Artikis
NCSR Demokritos &
University of Piraeus



Florian Bruse
University of Kassel



Luke Hunsberger
Vassar College

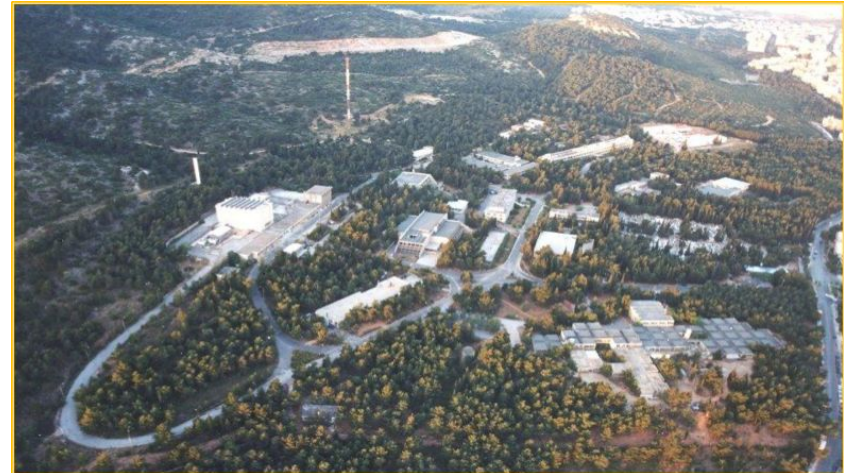
National Centre for Scientific Research (NCSR) “Demokritos”



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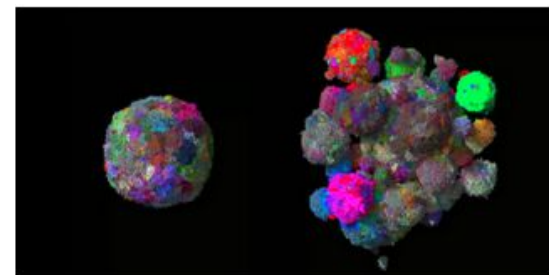
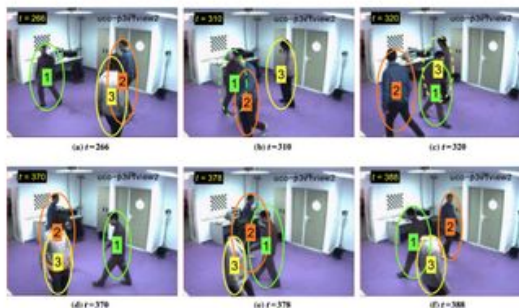
- Artificial Intelligence and Big Data
- Networks and Telecommunications



Complex Event Recognition Group

<https://cer.iit.demokritos.gr/>

- Real-time temporal pattern matching over high velocity data streams
- Online structure learning over noisy relational streams
- Complex event forecasting for proactive decision-making



Program at a Glance

Mon, 25 September	Tue, 26 September
9:15 – 10:15 Invited Talk: Thomas Eiter	9:00 – 10:00 Invited Talk: Laura Nenzi
10:45 – 12:15 Timed Logics & Temporal Reasoning	10:30 – 12:30 Causality Detection & Temporal Databases
13:15 – 14:45 Temporal Logics	13:30 – 15:30 Interval Temporal Logic & Event Recognition
15:15 – 17:15 Temporal Graphs	16:00 – 17:30 Qualitative Spatial and Temporal Reasoning
19.00 Dinner	17.30 Closing Remarks

Detailed Program

<https://cer.iit.demokritos.gr/events/time23>

Monday, 25 September 2023			
09:00 - 09:15		Opening	
09:15 - 10:15	Invited talk: Thomas Eiter	Asynchronous Temporal Equilibrium Logic	
10:15 - 10:45	Coffee Break		
	Timed Logics & Temporal Reasoning		
	10:45 - 11:15	S. Shankar, S. Pinisetty, T. Jérón	Bounded-Memory Runtime Enforcement of Timed Properties
10:45 - 12:15	11:15 - 11:45	H. Ho, K. Madnani	More Than 0s and 1s: Metric Quantifiers and Counting over Timed Words
	11:45 - 12:15	M. Sioutis	Embarrassingly Greedy Inconsistency Resolution of Qualitative Constraint Networks
12:15 - 13:15	Lunch Break		
	Temporal Logics		
	13:15 - 13:45	A. Artale, L. Geatti, N. Gigante, A. Mazzullo, A. Montanari	LTL over finite words can be exponentially more succinct than pure-past LTL, and vice versa
13:15 - 14:45	13:45 - 14:15	L. Geatti, A. Gianola, N. Gigante	Extended abstract: Towards Infinite-State Verification and Planning with Linear Temporal Logic Modulo Theories
	14:15 - 14:45	R. Acampora, L. Geatti, N. Gigante, A. Montanari	Extended abstract: Qualitative Past Timeline-Based Games
14:45 - 15:15	Coffee Break		
	Temporal Graphs		
	15:15 - 15:45	A. Baudin, L. Tabourier, C. Magnien	LSCPM: communities in massive real-world Link Streams by Clique Percolation Method
15:15 - 17:15	15:45 - 16:15	A. Bregoli, K. Rathsmann, M. Scutari, F. Stella, S.W. Mogensen	Analyzing complex systems with cascades using continuous time Bayesian networks
	16:15 - 16:45	M. Sälzer, S. Beddar-Wiesing	Extended abstract: Time-aware Robustness of Temporal Graph Neural Networks for Link Prediction
	16:45 - 17:15	L. Hunsberger, R. Posenato	Extended abstract: Converting Simple Temporal Networks with Uncertainty into Dispatchable Form---Faster

Keynote Speakers

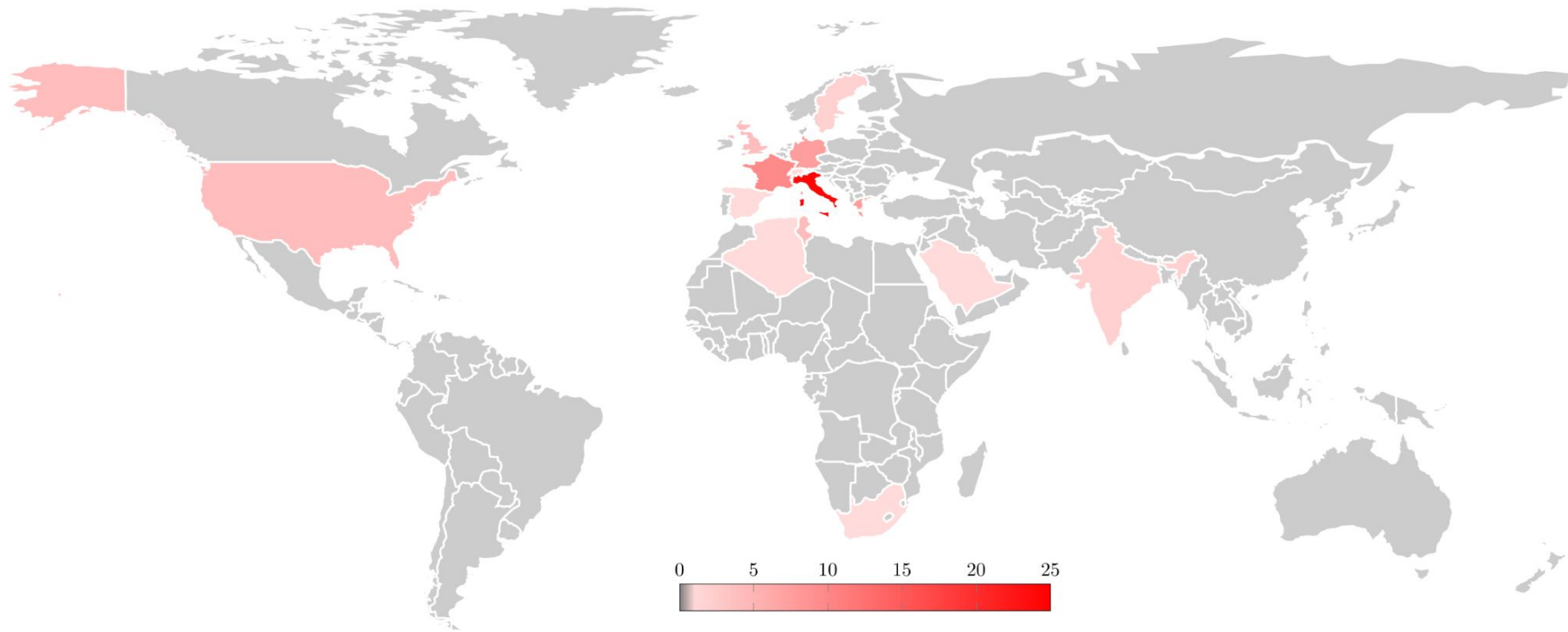


Thomas Eiter
TU Vienna

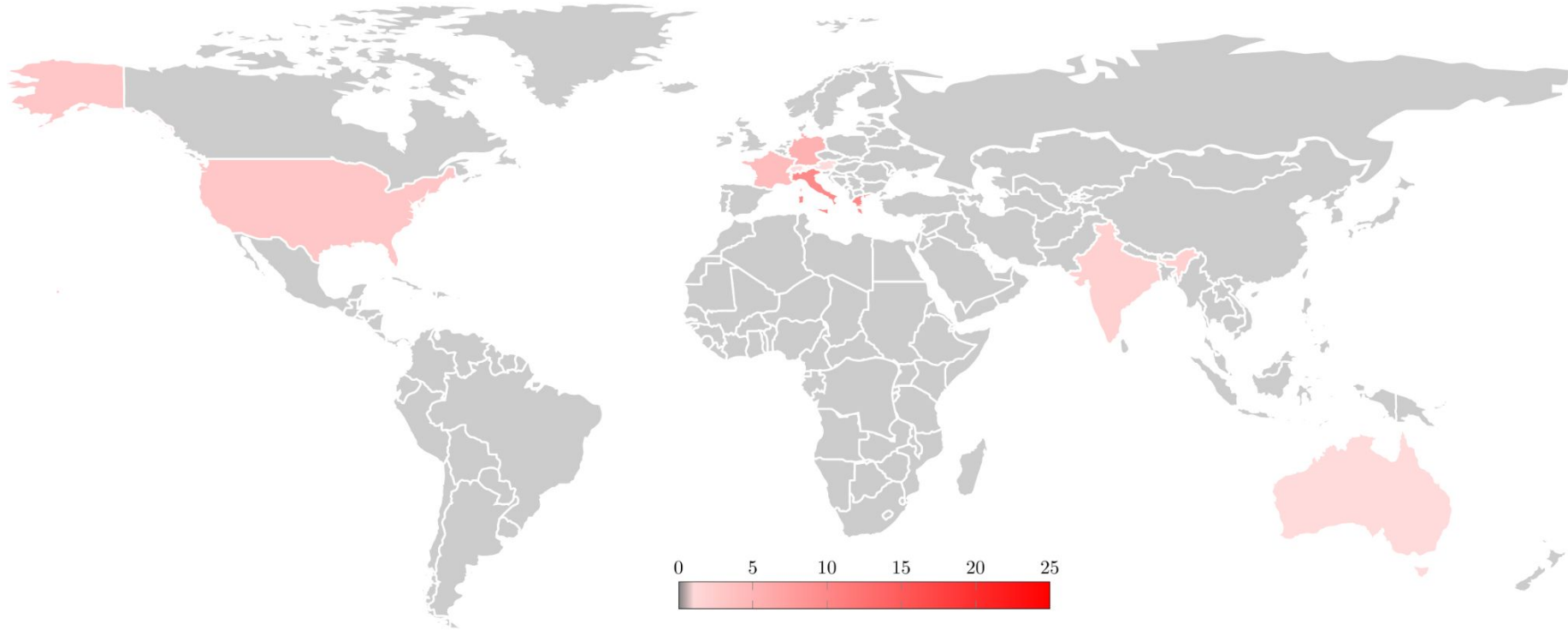


Laura Nenzi
University of Trieste

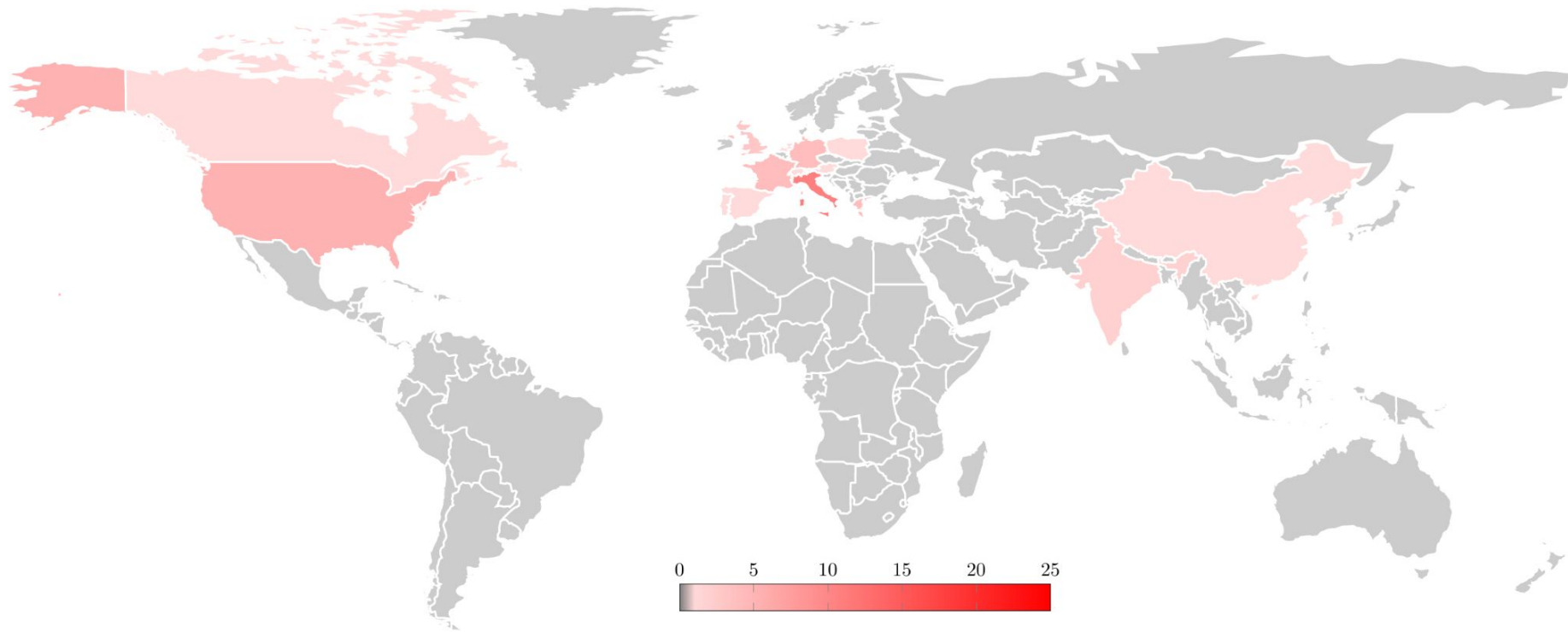
Submissions



Symposium Participation



PC Members



Proceedings

30th International Symposium on Temporal Representation and Reasoning (TIME 2023)

Alexander Artikis and Florian Bruse and Luke Hunsberger (Eds.)

ISBN 978-3-95977-298-3, LIPICS Vol. 278



ISSN 1868-9869

Additional Information

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Conference Website
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Front Matter, Table of Contents, Preface, Conference Organization

Authors: Artikis, Alexander ; Bruse, Florian ; Hunsberger, Luke

Abstract | Document (516 KB) | BibTeX

Learning Temporal Logic Formulas from Time-Series Data (Invited Talk)

Authors: Nenzi, Laura

Abstract | Document (412 KB) | BibTeX

LTL over Finite Words Can Be Exponentially More Succinct Than Pure-Past LTL, and vice versa

Authors: Artale, Alessandro ; Geatti, Luca ; Gigante, Nicola ; Mazzullo, Andrea ; Montanari, Angelo

Abstract | Document (758 KB) | BibTeX

LSCPM: Communities in Massive Real-World Link Streams by Clique Percolation Method

Authors: Baudin, Alexis ; Tabouner, Lionel ; Magnien, Clémence

Abstract | Document (1,637 KB) | BibTeX

Discovering Predictive Dependencies on Multi-Temporal Relations

Authors: Amico, Beatrice ; Combi, Carlo ; Rizzi, Romeo ; Sala, Pietro

Abstract | Document (934 KB) | BibTeX

Prime Scenarios in Qualitative Spatial and Temporal Reasoning

Authors: Salhi, Yakoub ; Sioutis, Michael

Abstract | Document (974 KB) | BibTeX

Bounded-Memory Runtime Enforcement of Timed Properties

Authors: Shankar, Saumya ; Pinisetty, Srinivas ; Jéron, Thierry

Abstract | Document (985 KB) | BibTeX

More Than 0s and 1s: Metric Quantifiers and Counting over Timed Words

Authors: Ho, Hsi-Ming ; Madnani, Khushraj

Abstract | Document (876 KB) | BibTeX

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- Amico, Beatrice
- Artale, Alessandro
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- Beldan-Wiesing, Silvia
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- Müller, Sören
- Nenzi, Laura



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30th TIME 2023: Athens, Greece

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- Alexander Artikis, Florian Bruse, Luke Hunsberger:
30th International Symposium on Temporal Representation and Reasoning, TIME 2023, September 25-26, 2023, NCSR Demokritos, Athens, Greece. LIPICS 278, Schloss Dagstuhl - Leibniz-Zentrum für Informatik 2023, ISBN 978-3-95977-298-3
- **Front Matter, Table of Contents, Preface, Conference Organization.** 0:1-0:14
- Laura Nenzi:
Learning Temporal Logic Formulas from Time-Series Data (Invited Talk). 1:1-1:2
- Alessandro Artale, Luca Geatti, Nicola Gigante, Andrea Mazzullo, Angelo Montanari:
LTL over Finite Words Can Be Exponentially More Succinct Than Pure-Past LTL, and vice versa. 2:1-2:14
- Alexis Baudin, Lionel Tabouner, Clémence Magnien:
LSCPM: Communities in Massive Real-World Link Streams by Clique Percolation Method. 3:1-3:18
- Beatrice Amico, Carlo Combi, Romeo Rizzi, Pietro Sala:
Discovering Predictive Dependencies on Multi-Temporal Relations. 4:1-4:19
- Yakoub Salhi, Michael Sioutis:
Prime Scenarios in Qualitative Spatial and Temporal Reasoning. 5:1-5:14
- Saumya Shankar, Srinivas Pinisetty, Thierry Jéron:
Bounded-Memory Runtime Enforcement of Timed Properties. 6:1-6:22

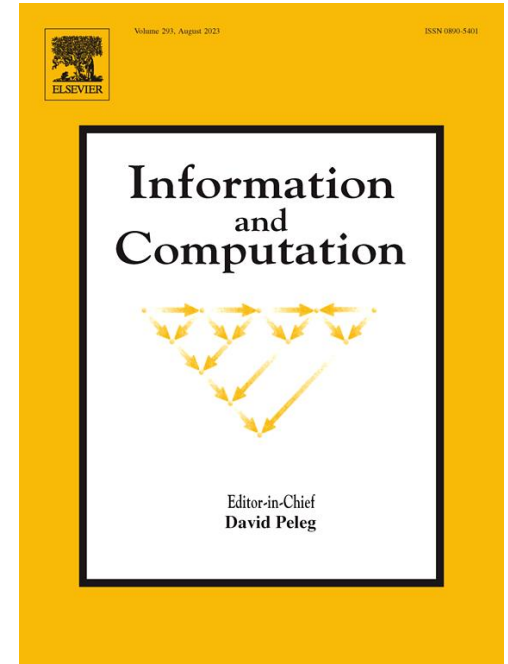
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Special Issue

Selected Papers will be invited to a special issue of *Information and Computation*

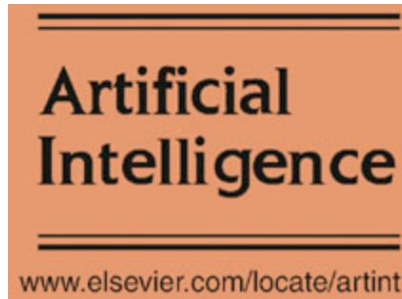
- Top-ranked regular papers
- Selected extended abstracts

Invitations will go out a few weeks after the symposium.



Thanks to ...

- All authors, for their valuable contributions.
- PC members, for their detailed reviews and comments.
- SC members, for their guidance.
- All attendees, for making TIME 2023 a great event!
- Periklis Mantenoglou; the webmaster.
- Pelagia, Elena, Agathi; the local organisation team.
- Our sponsor:



Enjoy the symposium!