SYNASC 2016

18th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing

September 24-27, 2016, Timisoara, Romania

http://synasc.ro/2016

Aim
---

SYNASC aims to stimulate the interaction between the two scientific communities of symbolic and numeric computing and to exhibit interesting applications of the areas both in theory and in practice. The choice of the topic is motivated by the belief of the organizers that the dialogue between the two communities is very necessary for accelerating the progress in making the computer a truly intelligent aid for mathematicians and engineers.

Important Dates
---------------

22 June 2016 : Paper submission (HARD DEADLINE)
27 July 2016 : Notification of acceptance
15 August 2016 : Registration
01 September 2016 : Revised papers according to the reviews
24-27 September 2016 : Symposium
30 November 2016 : Final papers for post-proceedings

Invited Speakers
---------------

Erika Abraham, RWTH Aachen University, Germany
Chris Brown, U.S. Naval Academy
Dan Cristea, Alexandru Ioan Cuza University, Iasi, Romania
Tetsuo Ida, University of Tsukuba, Japan
Sorin Stratulat, University of Lorraine, France

Tracks
-----

* Symbolic Computation
  + computer algebra
  + symbolic techniques applied to numerics
  + hybrid symbolic and numeric algorithms
  + numerics and symbolics for geometry
  + programming with constraints, narrowing

* Numerical Computing
  + iterative approximation of fixed points
+ solving systems of nonlinear equations
+ numerical and symbolic algorithms for differential equations
+ numerical and symbolic algorithms for optimization
+ parallel algorithms for numerical computing
+ scientific visualization and image processing

* Logic and Programming
  + automatic reasoning
  + formal system verification
  + formal verification and synthesis
  + software quality assessment
  + static analysis
  + timing analysis

* Artificial Intelligence
  + intelligent systems for scientific computing
  + recommender and expert systems for scientific computing
  + scientific knowledge management
  + agent-based complex systems modeling and development
  + uncertain reasoning in scientific computing
  + computational intelligence
  + machine learning
  + data mining, text mining and web mining
  + natural language processing
  + computer vision
  + intelligent hybrid systems

* Distributed Computing
  + parallel and distributed algorithms for clouds, GPUs, HPC, P2P systems, autonomous systems. Work should focus on scheduling, scaling, load balancing, networks, fault-tolerance, gossip algorithms, energy saving
  + applications for parallel and distributed systems, including work on cross disciplinary (scientific) applications for grids/clouds, web applications, workflow platforms, network measurement tools, programming environments
  + architectures for parallel and distributed systems, including self-managing and autonomous systems, negotiation protocols, HPC on clouds, GPU processing, PaaS for (inter)cloud, brokering platforms, mobile computing
  + modelling of parallel and distributed systems including models on resources and networks, semantic representation, negotiation, social networks, trace management, simulators
  + any other topic deemed relevant to the field

* Advances in the Theory of Computing
  + Data Structures and algorithms
  + Combinatorial Optimization
  + Formal languages and Combinatorics on Words
  + Graph-theoretic and Combinatorial methods in Computer Science
  + Algorithmic paradigms, including distributed, online, approximation, probabilistic, game-theoretic algorithms
  + Computational Complexity Theory, including structural complexity, boolean complexity, communication complexity, average-case complexity, derandomization and property testing
  + Logical approaches to complexity, including finite model theory
  + Algorithmic and computational learning theory
  + Aspects of computability theory, including computability in analysis and algorithmic information theory
  + Proof complexity
  + Computational social choice and game theory
  + New computational paradigms: CNN computing, quantum,
holographic and other non-standard approaches to Computability
+ Randomized methods, random graphs, threshold phenomena and
typical-case complexity
+ Automata theory and other formal models, particularly in
relation to formal verification methods such as model
checking and runtime verification
+ Applications of theory, including wireless and sensor networks,
computational biology and computational economics
+ Experimental algorithmics

This list is not intended to be exhaustive.

Publication
-------------
Research papers that are accepted and presented at the symposium will be collected as
post-proceedings published by Conference Publishing Service (CPS) (included in IEEE
Xplore) and will be submitted for indexing in ISI Web of Science, DBLP, SCOPUS.

Extended versions of the selected papers published in post-proceedings will be consid-
ered to be published as special issues in international journals (e.g. Soft Computing
Journal, Scalable Computing: Practice and Experience etc.)

Honorary Chairs
---------------
* Bruno Buchberger, Johannes Kepler University, Austria
* Stefan Maruster, West University of Timisoara, Romania

Steering Committee
------------------
* Tetsuo Ida, University of Tsukuba, Japan
* Tudor Jebelean, Johannes Kepler University, Austria
* Viorel Negru, West University of Timisoara, Romania
* Dana Petcu, West University of Timisoara, Romania
* Stephen Watt, University of Western Ontario, Canada
* Daniela Zaharie, West University of Timisoara, Romania

General Chairs
-------------
* Viorel Negru, West University of Timisoara, Romania
* Dana Petcu, West University of Timisoara, Romania

Program Chairs
------------
* James Davenport, University of Bath, UK
* Daniela Zaharie, West University of Timisoara, Romania

Track Chairs
-------------
* Symbolic Computation
  + Tetsuo Ida, University of Tsukuba, Japan
  + Stephen Watt, University of Western Ontario, Canada
  + Manuel Kauers, Johannes Kepler University, Linz, Austria
  + Alin Bostan, INRIA, France

* Numerical Computing
  + Stephen Takacs, Johannes Kepler University Linz, Austria
  + Eva Kaslik, West University of Timisoara, Romania

* Logic and Programming
Submissions of research papers are invited. The papers must contain original research results not submitted and not published elsewhere.

The submission process consists of two steps.

* In the first step the authors are invited to express their intention to participate at the conference by registering the title and a tentative abstract (1/2 page, at maximum) of their paper.

* In the second step the authors should submit the full paper.

There are four categories of submissions:

* Regular papers describing fully completed research results (up to 8 pages in the two-columns paper style).

* System descriptions and experimental papers describing implementation results of experimental data, with a link to the reported results (up to 4 pages in the two-columns paper style).

* Short papers, describing work in progress and/or preliminary results (up to 4 pages in the two-columns paper style).

* Posters, describing ongoing work and research challenges of PhD students (up to 2 pages in the two-columns paper style).
Both the abstract and the full paper should be submitted electronically through [http://www.easychair.org/conferences/?conf=synasc2016](http://www.easychair.org/conferences/?conf=synasc2016) [2].

Workshops
----------

* Workshop on Agents for Complex Systems (ACSys)
* Workshop on Geoinformatics (GeoInfo)
* Workshop on HPC for Science and Technology (HPC-ST)
* Workshop on Iterative Approximation of Fixed Points (IAFP)
* Workshop on Management of resources and services in Cloud and Sky computing (MICAS)
* Workshop on Natural Computing and Applications (NCA)

The papers for workshops should be submitted through [https://easychair.org/conferences/?conf=synasc2016workshops](https://easychair.org/conferences/?conf=synasc2016workshops) [3]

* Workshop on Satisfiability Checking and Symbolic Computation (SC?)

The papers for this workshop should be submitted through [https://easychair.org/conferences/?conf=scsquare2016](https://easychair.org/conferences/?conf=scsquare2016) [4]

All papers accepted at workshops will be included in the local electronic proceedings and the best presented papers will be included in the post proceedings published by Conference Publishing Services.

Tutorials and trainings
-----------------------

* Tutorial in Monitoring of Big Data Applications
* Tutorial on HPC Cloud Services
* Training in HPC for Industrial Innovation
[the list is still open]


Links:

[3] https://easychair.org/conferences/?conf=synasc2016workshops