

REPORT ON ALGO 2015

Christos Zaroliagis

Department of Computer Engineering & Informatics, University of Patras, Greece

ALGO is an **annual** congress combining the premier algorithmic conference “European Symposium on Algorithms” (ESA) along with a number of specialized conferences and workshops all related to algorithms and their applications, making ALGO the **major** European event for researchers, students and practitioners in algorithms.

ALGO 2015 (the 15th in the ALGO series) took place on 14-18 September 2015 at the Conference and Cultural Center of the University of Patras, Greece. The congress was hosted by the University of Patras and its Department of Computer Engineering and Informatics, and it was organized in cooperation with the European Association for Theoretical Computer Science (EATCS).

ALGO 2015 was carried out with great success, attracting more than 260 participants from 26 countries around the globe, who attended the seven affiliated conferences:

- ESA 2015 (European Symposium on Algorithms), held on 14-16 September 2015
- ALGO CLOUD 2015 (International Workshop on Algorithmic Aspects of Cloud Computing), held on 14-15 September 2015
- ALGO SENSORS 2015 (International Symposium on Algorithms and Experiments for Wireless Sensor Networks), held on 17-18 September 2015
- ATMOS 2015 (Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems), held on 17 September 2015
- IPEC 2015 (International Symposium on Parameterized and Exact Computation), held on 16-18 September 2015
- MASSIVE 2015 (Workshop on Massive Data Algorithmics), held on 17 September 2015
- WAOA 2015 (Workshop on Approximation and Online Algorithms), held on 17-18 September 2015

The programme consisted of 10 plenary and special event keynote talks, over 180 innovative research contributions across 7 conferences (selected by the respective Program Committees from over 500 submissions), two tutorials, the prestigious EATCS-IPEC Nerode Prize 2015 for outstanding papers in the area of multivariate algorithmics, several best paper and best student paper awards, and a special event dedicated to the contributions of the eminent Professor Paul Spirakis to Computer Science on the occasion of his 60th birthday.

The 10 plenary and special event **keynote talks** were given by:

- Ralf Borndorfer (Zuse-Institute Berlin, Germany), on “*Hypergraphs in Traffic Optimization*”
- Shlomi Dolev (Ben-Gurion University, Israel), on “*Communication-less Secure-Multiparty-Computation*”
- Thomas Kesselheim (Max-Planck Institute for Informatics, Germany), on “*Online Packing Beyond the Worst Case*”
- Jochen Koenemann (University of Waterloo, Canada), on “*Recent News for an Old Steiner Tree Formulation*”
- Kurt Mehlhorn (Max-Planck Institute for Informatics, Germany), on “*Computing Equilibrium Prices in Linear Arrow-Debreu Markets*”
- Burkhard Monien (University of Paderborn, Germany), on “*The Complexity of Equilibria for Risk-Modeling Valuations*”
- Rasmus Pagh (IT University of Copenhagen, Denmark), on “*Correlated Locality-Sensitive Hashing*”
- Paul Spirakis (University of Liverpool, UK; CTI & University of Patras, Greece), “*On the Discrete Dynamics of Probabilistic (Finite) Population Protocols*”
- Dimitrios Thilikos (University of Athens, Greece; and CNRS, LIRMM, France), on “*Bidimensionality and Parameterized Algorithms*”
- Virginia Vassilevska-Williams (Stanford University, USA), on “*The Strong Exponential Time Hypothesis and Hardness for Easy Problems*”

The **tutorials** were given by:

- Peter Triantafyllou (University of Glasgow, UK), on “*Performance and Scalability of Indexed Subgraph Query Processing Methods*”

- Vasilios Verykios (Hellenic Open University, Greece), on “*Distributed Privacy Preserving Record-Linkage*”

The following **awards** were given during ALGO 2015:

- The ESA 2015 best paper award was given to Christina Boucher, Christine Lo and Daniel Lokshantov, for their joint paper “*Consensus Patterns (Probably) has no EPTAS*”.
- The ESA 2015 best student paper award was given to Meirav Zehavi for her paper “*Mixing Color Coding-Related Techniques*”, and to Sascha Witt for his paper “*Trip-Based Public Transit Routing*”.
- The EATCS-IPEC Nerode Prize 2015 for outstanding papers in the area of multivariate algorithmics was awarded to Eric D. Demaine, Fedor V. Fomin, Mohammadtaghi Hajiaghayi, and Dimitrios M. Thilikos for their joint paper “*Subexponential Parameterized Algorithms on Bounded-Genus Graphs and H-Minor-Free Graphs*”, *Journal of the ACM*, Vol. 52, No. 6, November 2005.
- The ATMOS 2015 best paper award was given to René Van Bevern, Christian Komusiewicz and Manuel Sorge for their joint paper “*Approximation algorithms for mixed, windy, and capacitated arc routing problems*”.

ESA	2015	2014	2013	2012	2011	2010
Track A	265	221	229	231	209	206
Track B	59	48	74	54	46	39
Total	324	269	303	285	255	245

Table 1: Number of submitted papers at ESA 2010–2015.

ESA	2015	2014	2013	2012	2011	2010
	No. (Ratio)	No. (Ratio)	No. (Ratio)	No. (Ratio)	No. (Ratio)	No. (Ratio)
Track A	71 (26.8%)	57 (25.8%)	53 (23.1%)	56 (24.2%)	55 (26.3%)	56 (27.2%)
Track B	15 (25.4%)	12 (25.0%)	16 (21.6%)	13 (24.1%)	12 (26.1%)	10 (25.6%)
Total	86 (26.5%)	69 (25.6%)	69 (22.8%)	69 (24.2%)	67 (26.3%)	66 (27.0%)

Table 2: Number of accepted papers and acceptance ratio at ESA 2010–2015.

It is worth mentioning that ESA 2015 attracted a record of total submissions, and also had a record of Track A submissions. The quality was very high and

the competition hard. Tables 1 and 2 show the number of submitted and accepted papers, as well as the acceptance ratio in the last six ESA conferences.

The **special event** honoring Paul Spirakis took place in the afternoon of Wednesday 16 September 2015. The inauguration was made by the Acting Rector of Patras University Prof. Nikolaos Karamanos, the Chairman of the Department of Computer Engineering and Informatics Prof. John Garofalakis, and the Acting President of the Computer Technology Institute & Press Prof. Christos Kaklamanis. Subsequently, Prof. Christos Zaroliagis gave an overview of the scientific work of Paul Spirakis, focusing not only on his premier research work, but also on the teacher and mentor Paul Spirakis. Then, three keynote talks followed, which were delivered by the renowned computer science Professors Shlomi Dolev (Ben-Gurion University, Israel), Kurt Mehlhorn (Max-Planck Institute for Informatics, Germany), and Burkhard Monien (University of Paderborn, Germany). All keynote talks were in subjects extensively studied and researched by Paul Spirakis, quite often in collaboration with the keynote speakers. The epilogue of the special event included the presentation of a Springer Festschrift volume in honor of P. Spirakis, edited by three of his ex-PhD students and in which a plethora of scientists contributed, a honorary plaque signed by almost all of his ex-PhD students, a series of short videos with messages from various colleagues, friends, and former PhD students who could not attend, and a short film on the *human* Paul Spirakis prepared by his daughter Zeta (an MA student in The London Film School).

ALGO 2015 maintained the high standards of its 14 predecessors and was able to deliver an event of top quality. Towards this end, the support it received from several partners – European Social Fund, University of Patras, Department of Computer Engineering and Informatics at the University of Patras, EATCS, Google, MPII, MADALGO, Springer, NOKIA, Marathon Data Systems, National Bank of Greece, IOS Press – is greatly acknowledged and appreciated.

The Organizing Committee of ALGO 2015 consisted of Professors Christos Zaroliagis (Chair) and Spyros Kontogiannis, as well as their collaborators Kalliopi (Lina) Giannakopoulou, Ioannis Katsidimas, George Michalopoulos, and Andreas Paraskevopoulos. The Organizing Committee was assisted by the student volunteers Hera Giagkousi, Konstantinos Marakos, and Eleni Melachroinou.

A few indicative photos from ALGO 2015 are provided below (Fig. 1 and 2). More information about ALGO 2015 (including more photos) can be found at <http://algo2015.upatras.gr/>.



Figure 1: ALGO 2015 – indicative photos.



Figure 2: ALGO 2015 – indicative photos.