REPORT ON ICALP 2014

The 41st International Colloquium on
Automata, Languages and Programming

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The 41st International Colloquium on Automata, Languages and Programming (ICALP), the main conference and annual meeting of the European Association for Theoretical Computer Science (EATCS), took place from the 8th to the 11th of July 2014 on the premises of the IT University of Copenhagen, Denmark. The main conference was preceded by the following two workshops, which were held on Monday, 7 July:

- Trends in Online Algorithms (TOLA 2014) and

- Young Researcher Workshop on Automata, Languages and Programming (YR-ICALP).

ICALP 2014 was the first edition of ICALP spanning four days. In my humble opinion, this was a successful experiment, which will be repeated for future editions of the conference, unless co-location with other events make a five-day conference preferable.

First of all, let me express my heartfelt thanks to the local organizers, led by Thore Husfeldt (the conference chair) and Annelie Jepsen (from the IT University of Copenhagen administrative offices), who did their very best to make the conference a festive occasion and a very pleasant experience for all the attendees. The organization of the conference was truly outstanding. The invited talks are online (see `http://video.itu.dk/search/perform?search=icalp2014`) and were streamed live for the first time in the history of ICALP, the sessions started and ended on time, sound and projection issues were non-existent, and the food/drinks were tasty and varied. The 16 student volunteers were always at hand at every conference session and during the breaks, mingling with the participants also during the canal tour and the conference dinner. In short, everything worked like a charm.

The city of Copenhagen is wonderful and all ICALP participants had a very warm welcome. We were also blessed with largely sunny and warm weather, which also helped to lift the spirits of the conference participants and of the locals alike.

According to the data presented by Thore Husfeldt to the EATCS council and to the EATCS general assembly, there were 231 registered participants in ICALP

2014. (The USA contributed 42 participants, Germany 34, Denmark 24, France 21 and Israel 16.) Future ICALP organizers might be interested in knowing that 198 participants registered by the early-registration deadline and 43 were late.

ICALP 2014 was an action packed conference and I think that it was a resounding success, both scientifically and socially. The scientific programme for ICALP 2014 consisted of four invited lectures, the presentation of 136 contributed papers (which were selected by the program committees out of an all-time-high 477 submissions) and an award session, devoted to the presentation of the EATCS and the Presburger awards to Gordon Plotkin and David Woodruff, respectively, and of the best paper awards for the conference. The Gödel Prize 2014 was presented to Ronald Fagin, Amnon Lotem, and Moni Naor during the conference dinner and its presentation was accompanied by a talk by Moni Naor.

The 136 contributed papers for ICALP 2014 were divided into the three tracks of the conference as follows:

- 87 papers for "Track A: Algorithms, Complexity and Games", which were selected from 312 submissions (acceptance rate: 28%);

- 31 papers for "Track B: Logic, Semantics, Automata and Theory of Programming", which were selected from 106 submissions (acceptance rate: 29%); and

- 18 papers for "Track C: Foundations of Networked Computation", which were selected from 59 submissions (acceptance rate: 31%).

The submission numbers are from EasyChair. The actual numbers were higher because some papers were withdrawn during the reviewing process. For example, Track A had originally 320 submissions, which was the highest number ever for this track. By way of comparison, the Track A of ICALP 2013 received 249 submissions.

The PC chairs for the three tracks of ICALP 2014 were Elias Koutsoupias (Track A), Javier Esparza (Track B) and Pierre Fraigniaud (Track C). I take this opportunity of thanking them, their PCs and the sub-reviewers for doing an exceptional job. To give you an idea of the amount of work that was involved in the selection of papers for this ICALP, the PCs for the three tracks of ICALP 2014 had 69 members in total, 1488 reviews were produced during the PC work (as opposed to 1299 last year), of which 1005 were written by 816 external reviewers. It is thus fair to say that a large fraction of the TCS community was actively involved in the PC work for ICALP 2014.

Statistical information about the number of papers submitted and accepted for the last six editions of the ICALP conference, as well as acceptance rates, are available in Tables 1–3. The breakdown by country for each track of ICALP

	2014	2013	2012	2011	2010	2009
Total	**136**	124	123	114	106	108
Track A	**87**	71	71	68	60	62
Track B	**31**	33	30	29	30	24
Track C	**18**	20	22	17	16	22

Table 1: Number of accepted papers at ICALP 2009–2014

	2014	2013	2012	2011	2010	2009
Total	**477**	423	432	398	389	370
Track A	**312**	249	248	243	222	223
Track B	**106**	114	105	103	114	84
Track C	**59**	60	79	52	53	63

Table 2: Number of submitted papers at ICALP 2009–2014

2014, limited to the top ten countries by number of submissions, is in Tables 4–6. I thank Javier Esparza, Pierre Fraigniaud and Elias Koutsoupias for sharing this information with me.

I let you draw your own conclusions on how well each country did at ICALP 2014.

ICALP 2014 featured four invited presentations, which were delivered by Claire Mathieu, Viktor Kuncak, Sanjeev Arora and Maurice Herlihy. As I mentioned earlier, the videos of all the talks are available at `http://icalp2014.itu.dk/en/Events-and-Attractions/Video`, so I can let the presentations speak for themselves. Here I will simply limit myself to saying that I strongly encourage my readers to watch those presentations: they were all excellent and accessible to a wide TCS audience, just like invited talks should be. You can also read summaries of the invited talks in the ICALP-related guest posts that Andrew Winslow contributed to my professional blog. (Point your browser at

	2014	2013	2012	2011	2010	2009
Total	28.5	29.3	28.5	28.6	27.2	29.2
Track A	28	28.5	28.6	28	27	27.8
Track B	29	28.9	28.6	28.2	26.3	28.6
Track C	31	33.3	27.9	32.7	30.2	34.9

Table 3: Acceptance rates for ICALP 2009–2014

country	authors	submitted	accepted	accept rate	PC members
United States	248	108.71	34.02	0.31	6
Israel	65	30	7.92	0.26	3
Germany	63	23.32	5.85	0.25	1
Canada	39	17.02	3.58	0.21	1
India	36	16.12	1.67	0.1	1
China	30	16	4	0.24	1
France	33	12.7	3.2	0.25	1
Japan	26	12.25	2.75	0.22	0
Singapore	14	7.72	2.43	0.32	1
UK	16	6.2	2.33	0.38	4

Table 4: ICALP 2014: Breakdown by country (Track A)

country	authors	submitted	accepted	accept rate	PC members
Germany	37	20.25	6.5	0.32	3
France	49	20.17	3.83	0.19	3
UK	24	14.33	5.83	0.41	3
United States	23	9.2	3	0.33	2
Austria	13	5.58	1.5	0.27	0
Poland	8	5	4	0.8	1
China	13	4.33	1	0.23	0
Italy	8	3.87	0.2	0.05	2
India	7	2.5	0	0	1
Netherlands	10	2.43	0.8	0.33	1

Table 5: ICALP 2014: Breakdown by country (Track B)

country	authors	submitted	accepted	accept rate	PC members
United States	31	13.03	4.12	0.32	3
Israel	18	8.58	4.5	0.52	2
France	17	6.45	2.75	0.43	1
Germany	17	5.8	1.47	0.25	2
Switzerland	14	5.42	2.25	0.42	0
UK	11	3.92	1.58	0.4	1
Canada	11	3.8	0.5	0.13	1
Austria	5	2.08	0.33	0.16	0
Mexico	3	2	0	0	0
Italy	4	1.25	0	0	2

Table 6: ICALP 2014: Breakdown by country (Track C)

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http://processalgebra.blogspot.com/2014/07/
    day-1-of-icalp-2014-guest-post-by.html
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and start reading!) Guest posts on some of the accepted papers were also authored by Clément Canonne. I thank Andrew and Clément for taking the time to write those excellent blog posts.

The best paper awards at ICALP 2014 were handed out during the award session on Wednesday, 9 July, before the canal tour and the conference dinner. The best papers at ICALP 2014 were:

- Track A: Andreas Björklund and Thore Husfeldt. *Shortest Two Disjoint Paths in Polynomial Time*.

- Track B: Joel Ouaknine and James Worrell. *Ultimate Positivity is Decidable for Simple Linear Recurrence Sequences*.

- Track C: Oliver Göbel, Martin Hoefer, Thomas Kesselheim, Thomas Schleiden and Berthold Voecking. *Online Independent Set Beyond the Worst-Case: Secretaries, Prophets, and Periods*.

Unfortunately, Berthold Voecking, who was one of the authors of the best paper for Track C, passed away on the 11th of June 2014 after a long illness. He was only 47.

Burkhard Monien closed the award session with a eulogy for Berthold, who was a leading figure in algorithmics research in Europe and was an invited speaker at ICALP 2012.

The best student paper awards at ICALP 2014 went to

- Track A: Sune K. Jakobsen. *Information Theoretical Cryptogenography*.

- Track B: Michael Wehar. *Hardness Results for Intersection Non-Emptiness*.

- Track C: Mohsen Ghaffari. *Near-Optimal Distributed Approximation of Minimum-Weight Connected Dominating Set*.

Unfortunately, because of problems with his US visa, Mohsen Ghaffari could not attend the conference. However, he delivered his talk as part of the conference programme with the help of a telepresence robot, which was kindly provided by the IT University of Copenhagen. I believe that this was the first time in the history of ICALP that a speaker delivered his talk using a telepresence robot.

It is interesting to see that the best papers for 2014 are all from Europe, whereas two of the three best student papers are from the US. Having worked in Northern Europe for the best part of 20 years, I am happy to see that the best papers for Track A have Scandinavian authors, including the conference chair. Congratulations to all the authors of the best papers. I hope that you will read their award-receiving work.

The EATCS Award and the Presburger Award were also delivered during the award session on Wednesday, 9 July. First, Gordon D. Plotkin received the EATCS Award from Luca Aceto, on behalf of the EATCS Award Committee, and delivered a presentation covering his work on the semantics on programming languages from the early days till his most recent work on algebraic effects.

Next, Antonin Kucera and Jos Baeten presented the Presburger Award 2014 to David Woodruff. (The award was sponsored by CWI Amsterdam, which I heartily thank, on behalf of the EATCS, for its support.) David's talk, entitled *Data Streams and Applications in Computer Science*, gave an overview of the work for which he received the award. You can read a piece based on David's talk in this issue of the Bulletin of the EATCS.

A recording of the whole award session is available at

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http://icalp2014.itu.dk/en/Conference/~/link.aspx?_id=
        6DDB682A3CE545EFAD7D3F6A006E50A7&_z=z.
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The Gödel Prize 2014 was presented to Ronald Fagin, Amnon Lotem, and Moni Naor during the conference dinner. Thore Husfeldt wrote a piece for a general public on the work for which the prize was awarded, which is available in English translation at

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http://thorehusfeldt.net/2014/07/17/
    personal-reality-godel-prize-2014/.
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The presentation of the Gödel prize was accompanied by the premiere of *The Hilbert Heartbreak Hotel*, a musical interpretation of Kurt Gödel's famous incompleteness theorems by Danish composer Niels Marthinsen, with lyrics by the Danish poet Ursula Andkjær Olsen, which was performed by the ensemble Figura. A video describing the composition, the lyrics and a recording of the performance of the piece are available at

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http://icalp2014.itu.dk/en/Events-and-Attractions/~/link.
        aspx?_id=5A0B039C4F7144E7BDAD5CE64F618D7B&_z=z.
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This composition was also featured in the journal *Nature*. See

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http://www.nature.com/news/
enigmatic-foundations-of-maths-put-to-music-1.15502?WT.mc_id=
                TWT_NatureNews.
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The general assembly of the EATCS was held on Tuesday, 8 July, right after the scientific programme for the day. It was streamed live for the first time in the history of the EATCS and there was a live Twitter feed that our members could use to participate actively in the discussion.

Amongst other things, the general assembly decided that ICALP 2016 will be held in Rome, Italy. Tiziana Calamoneri, who is the president of the Italian Chapter of the EATCS, presented the bid from Rome and will be one of the members of the organizing committee for the conference.

In case you are interested in having a look, the slides I used for the EATCS general assembly are available at

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http://www.ru.is/~luca/EATCS/GeneralAssembly2014.pdf .
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I hope that this conference report gives you a glimpse of the rich scientific and social programme that made the 41st ICALP in Copenhagen an excellent conference. Everyone involved in the organization of ICALP 2014 deserves the warmest thanks from the TCS community.

ICALP 2014 will be held from Monday, 6 July 2015, to Friday, 10 July 2015, in Kyoto, Japan, and will be co-located with LICS 2015. This will be the first ICALP ever to be held outside Europe.

I hope that you will make plans to submit your best work to ICALP 2015 and to travel to the splendid city of Kyoto for the conference. I heartily recommend it and look forward to seeing you there.