

Journal of Artificial Intelligence Research

2013 Annual Report

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Executive summary

We are pleased to present the annual report on the status of JAIR. The report covers the activities of the journal in 2012 and the first half of 2013. The journal published 52 papers in 2012, down from the record 62 papers published in 2011, but greater than the number in 2010 (46) and equal to 2009 (52). We received a record 336 submissions in 2012, up slightly from the 324 received in 2011; both of the last two years showed a significant increase in submissions compared to the 261 in 2010 and the previous high of 291 in 2005. This trend shows no signs of abating, with a record 181 submissions during the first half of 2013.

The 2013 IJCAI-JAIR Best Paper Prize will be awarded during the IJCAI-13 Opening Ceremony. The 2013 prize winners are Daniel Golovin and Andreas Krause for their 2011 paper “Adaptive Submodularity: Theory and Applications in Active Learning and Stochastic Optimization.” This year no Honorable Mention was awarded. We will continue the initiative, started in 2011, of having the award winners present their papers at either IJCAI or AAI. We thank the organizers of IJCAI-13 for including the presentation of this paper during the first day the IJCAI-13 special Best Paper Track. We also wish to thank the prize selection committee—Jeff Rosenschein (chair), Malte Helmert, Mirella Lapata, and Dale Schuurmans—for taking on this difficult, time-consuming but very important task.

The JAIR Award Winning Papers Track, created in 2010, has seen one new paper published in 2012, but has also seen the addition of four previously published JAIR papers: the winners of the 2012 IJCAI-JAIR Prize, plus the two winners of the IFAAMAS 2012 Influential Paper Award which recognized two papers published in JAIR in 1997 and 1993. We have not yet received any submissions to the track from 2012 conferences. Conferences that have agreed to participate in 2013 include AAI, AAMAS, ICAPS, IJCAI, NAACL, and UAI, with invitations being sent out as we obtain award winning author information from the respective conferences: to date, four invitations for submission have been accepted with a stated commitment to submit to JAIR, while a number of responses are pending; further invitations will be issued in the coming weeks and months. We thank Adele Howe, the inaugural JAIR Award Track Coordinator, who has returned to this role in 2013, and Subbarao Kambhampati who took this task during 2012. Their efforts in managing the track have helped build a very healthy pipeline.

A new special track on Description Logics, edited by Giuseppe De Giacomo, Yevgeny Kazakov and Frank Wolter, accepted submissions in the fall of 2012 and is nearing completion. The track received 17 submissions, with three first-round acceptances and another four acceptances after resubmission (several of the accepted papers are still pending

minor revisions). The track will be released once final revised papers are submitted and run through production. We received two additional proposals for special tracks this past year—though neither was accepted, the possibility of a revised proposal was left open in one case. We welcome new proposals for additional special tracks. Detailed guidelines are available online at: <http://www.jair.org/specialtracksinfo.html>

The JAIR Survey Track, led by JAIR's Surveys Editor, Maria Fox has ramped up activity significantly in 2012. Our goal is to publish several high-quality survey articles each year. Maria has been soliciting survey articles in key areas, and while we still welcome unsolicited survey articles, we strongly encourage prospective authors to contact the Surveys Editor prior to submission to determine whether the topic, scope, and focus are suitable for JAIR. Three papers have been published in the track to date (two in 2012, one in 2013), while several other submissions have been received but rejected. The pipeline of survey papers is very strong, with five papers either under review or soon to be submitted, and another six promised submissions. A number of other proposals (not submissions) have been received, but discouraged as inappropriate.

We welcome proposals for additional survey articles. Our policy (updated in 2012) is available online at: <http://www.jair.org/surveyarticles.html>

Daniel Bryce has continued in his important role as JAIR's Electronic Publishing Editor. Apart from managing changes to our internal database to support the activities above, Dan continues to lead an ad hoc committee that is examining a possible transition to a new software to support JAIR's operations. The committee also includes Kristian Kersting, Shaul Markovitch, Dragomir Radev and Toby Walsh. The committee has narrowed down the choice to one particular system, and is currently evaluating its functionality, its fit with current JAIR processes and workflow, and determining an appropriate path for transition. We anticipate completion of a transition plan in the second half of 2013.

All these accomplishments would not have been possible without the excellent work of our editorial board. To handle the growing number of submissions and replace retiring members, we recruited six new Associate Editors and 24 new Editorial Board Members, whose terms have just started (as of July 1, 2013). We currently have 36 Associate Editors and 89 Editorial Board Members. We also express our deep gratitude to Steve Minton for his continued service as Managing Editor, and to Lillian Bluestein for her outstanding service as Production Supervisor. We also welcome Dan Roth, who began his term as JAIR Associate Editor-in-Chief on January 1, 2013. Finally we extend our deepest appreciation to Shlomo Zilberstein, who completed his term as Editor-in-Chief on December 31, 2012. Shlomo's dedication and tremendous service to JAIR and the AI community, both in managing the day-to-day operations of the journal, and in spearheading a number of new initiatives, have further cemented JAIR's reputation as a premier publication venue.

The rest of the report provides more detailed statistics about the journal's activities. Please do not hesitate to contact either of us for more information, or if you have any feedback or comments.

Publication statistics

JAIR published 52 papers in 2012, compared to 62 papers in 2011 (an all-time high) and 46 papers in 2010. However, JAIR accepted more papers in 2012 (59) than in any previous year (57 in 2011 was the previous high). In the first half of 2013 we published 25 papers and accepted 15 others (compared to 26 published and 14 accepted for the same period in 2011).

Submission statistics

We received 336 submissions in 2012, which represents a roughly 4% increase over 2011 (we note that both years had special tracks, which contributed to slight increases in submission numbers). We have also received 181 submissions in the first six months of 2013, a 29% increase compared to the same period in 2012. This increase for the first half of 2013 does not seem attributable to any specific cause or event.

The acceptance rate for all submissions was 17.6% virtually identical to that in 2011 (both of which are lower than 2010's 19.5%). Of papers sent out for review, we observed a slight increase in acceptance rate, which was 30%

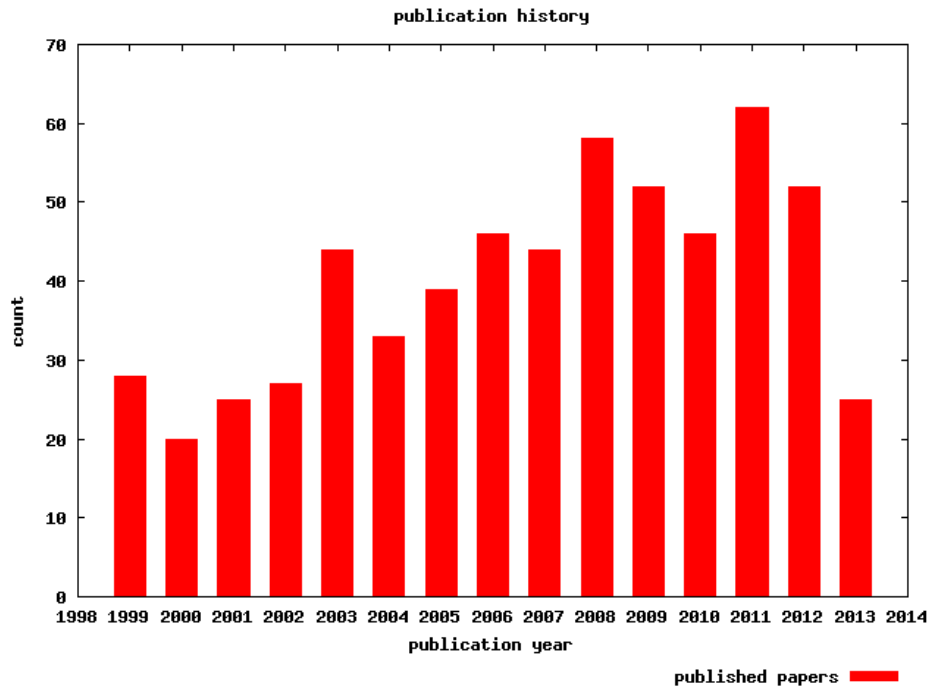


Figure 1: Published papers in JAIR by publication date.

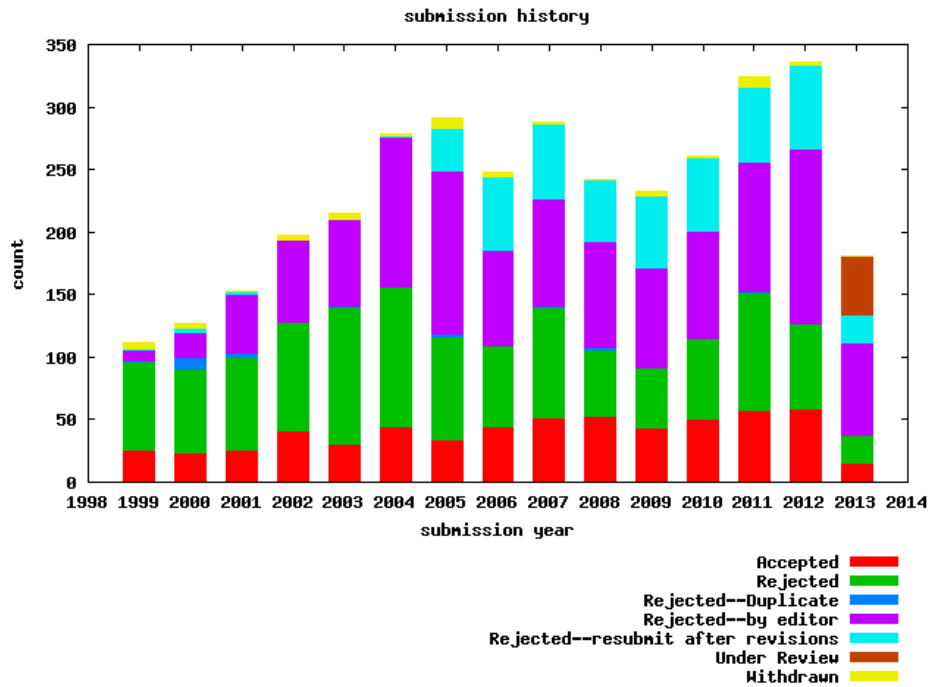


Figure 2: Submitted papers to JAIR by submission date.

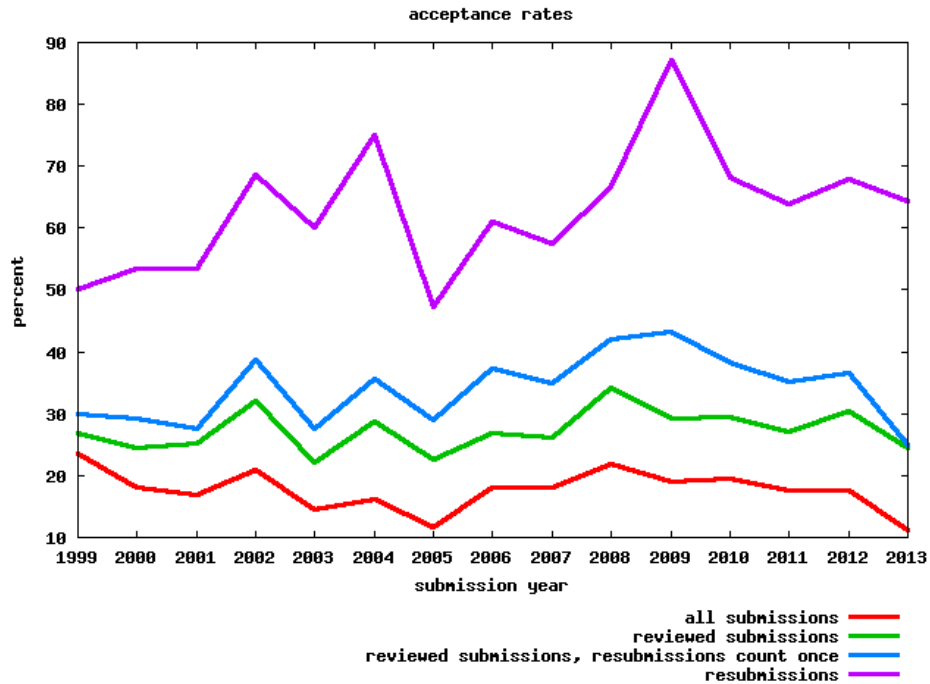


Figure 3: Acceptance rates by submission date.

in 2012 compared to 27% in 2011 and 29% in 2010. If we do exclude resubmissions, the acceptance rate in 2012 increased slightly to 36.6% from 35.1% in 2011 (compared to 48% in 2010 and 43% in 2009). For resubmitted papers, the acceptance rate in 2012 of 68% was slightly higher than the 64% observed in 2011 and identical to 2010's rate of 68%.

Regional statistics

While general patterns of regional submissions are somewhat similar to those seen over the past several years, some recent trends are worth noting. Historically, most of our submissions have come from Europe and North America, followed by Asia, the Middle East and Australia/Pacific Rim. However, 2012 saw some noteworthy changes in these patterns. Specifically, the number of submissions from Europe (121 in 2012) has continued to increase (from 107 in 2011 and 79 in 2010), while North American submissions have seen a steep decline this past year (54 in 2012, down from 73 in 2011, and 68 in 2010). Submissions from both Asia (80, 72, 56 in 2012, 2011, 2010, respectively) and the Middle East (58, 43, 43) have been growing rapidly over the past three years. For the first time, submissions from both of these regions have exceeded those from North America. Australia/Pacific Rim, South/Latin America, and Africa continue to submit in relatively smaller numbers. These patterns (not plotted) seem to be continuing through the first half of 2013.

As for published papers in 2012, the vast majority came from Europe (27), a record high. Published papers from North America (12) showed a sharp decline, reflecting the decline in submissions, and indeed reaching its lowest point since 2001. This may be somewhat anomalous since this number has rebounded somewhat in the first half of 2013 (9 published articles to date). Despite the rapid increase in the number of submissions, the number of published papers from Asia (5) and the Middle East (5) has remained roughly constant compared to 2011. Other regions have had fairly steady numbers of published papers in recent years.

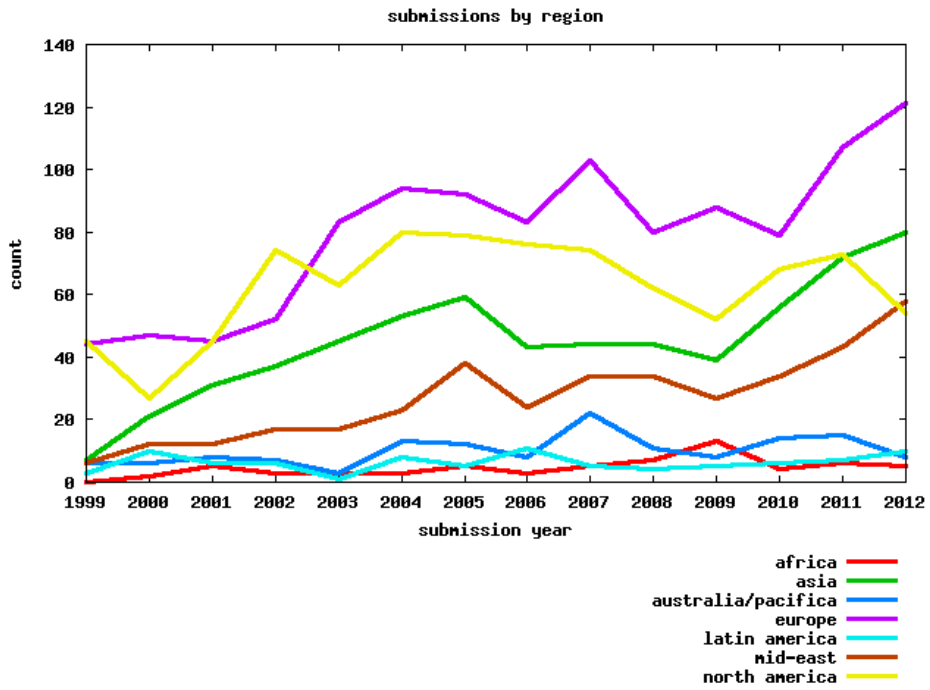


Figure 4: Submissions by region organized by submission date.

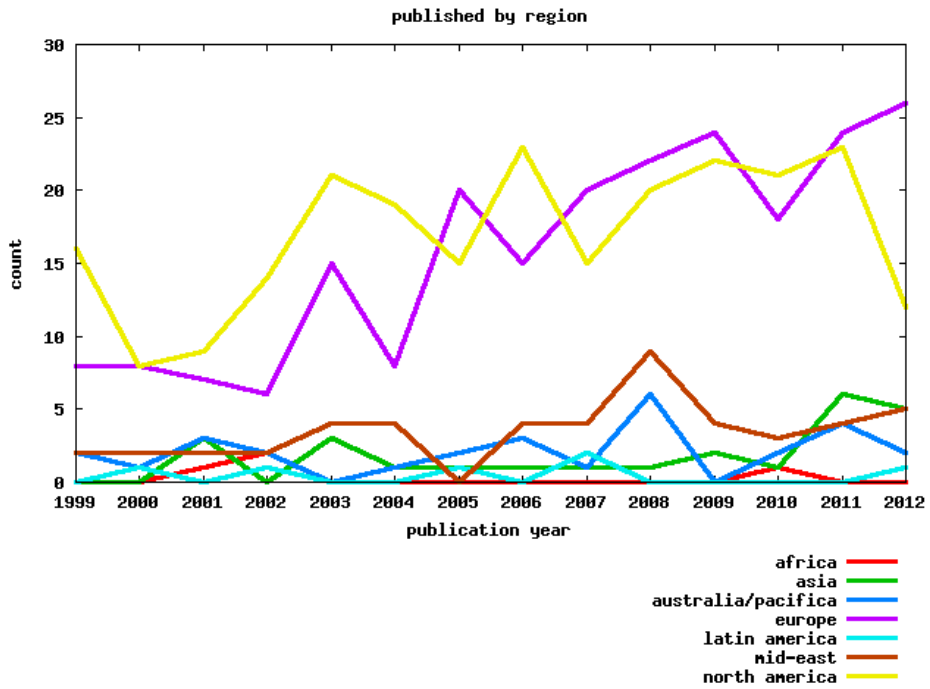


Figure 5: Published papers by region organized by submission date.

Subject statistics

In terms of topics, Knowledge Representation (KR), Multiagent Systems/Computational Economics (MAS/CEcon), Machine Learning (ML) and Neural Networks (NN), Natural Language Processing (NLP), Planning & Scheduling, Probabilistic Reasoning, and Search/Constraint Satisfaction continue to be the areas in which most submissions are received. (Each of these areas has had submission numbers in double digits for many years.) We are also receiving a substantial—and increasing—number of submissions on genetic algorithms and evolutionary computation (GA/EvolC). We saw a dramatic increase in ML submissions this past year (64 in 2012 vs. 40 in 2011), plus an increase in NN submissions. GA/EvolC also saw a significant increase, while submissions in KR dropped—this is in part due to the bump in 2011 submissions due to the special issue on Nonmonotonic Reasoning. Other areas saw modest increases or decreases in line with routine fluctuations.

These statistics should be taken with a grain of salt since many papers overlap several areas (e.g., NLP and ML, or Search/CSP and Planning), while the JAIR system requires the assignment of a single primary category.

As for published papers in 2012, the most popular topics were Search/CSP (13) and Planning & Scheduling (11). These two areas also showed the largest increases relative to 2011. By contrast, MAS/Cecon and KR experienced declines in the number of published papers relative to 2011 (from 14 in 2011 to 4 in 2012 for MAS/Cecon, and from 11 to 6 for KR). Again this is in part due to random fluctuation: these two areas had the largest increases and the greatest number of published papers in 2011. Most other areas have maintained roughly the same numbers of published papers, with NLP continuing to show reasonably good growth over the past several years. Of note is the fact that the number of ML publications (4) did not increase in 2012 despite the increased number of submissions; however, the first half of 2013 shows that 5 papers in ML have already been published. We should also point out that despite the large number of submissions in GA/EvolC, no papers have been published in this area since 2004.

Because the numbers of published papers in any given area is relatively small and many areas overlap, fluctuations of several papers in either direction are anticipated from year to year.

Topic	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Arch	0	0	0	0	0	0	0	0	0	0	0	0	2	3	4
CogSci	2	2	3	3	6	4	6	1	7	2	1	4	3	3	0
ES/Apps	0	0	0	0	0	0	0	0	0	2	5	9	6	9	2
GA/EvolC	3	13	8	8	13	17	17	6	8	12	10	12	18	24	18
Im/AudRec	0	5	4	4	5	6	3	6	3	3	4	2	3	7	6
KR	32	22	22	25	26	30	35	38	44	28	34	28	58	42	18
MAS/Cecon	11	9	16	20	22	28	33	36	39	32	35	51	42	48	20
ML	21	17	34	33	35	53	54	52	52	52	25	34	40	64	32
NLP	7	4	15	14	23	21	16	19	25	27	34	23	31	33	20
NN	4	6	11	16	19	24	33	8	15	16	10	7	8	16	5
Plan/Sched	11	19	13	21	16	26	27	16	18	15	12	21	29	23	13
Prob	9	12	10	30	22	17	6	7	10	11	14	23	18	15	10
Robotics	2	2	0	3	4	5	8	3	1	3	6	7	9	3	4
Search/CSP	8	9	5	8	14	26	25	40	34	34	30	30	39	34	17
WebAgent	0	0	0	0	0	0	0	0	4	2	3	2	4	2	0
NotAI	0	0	7	9	6	8	27	12	14	4	8	6	7	7	4
N/A	1	7	5	3	4	13	1	4	14	0	1	0	3	0	2

Table 1: Submissions by topic organized by submission date.

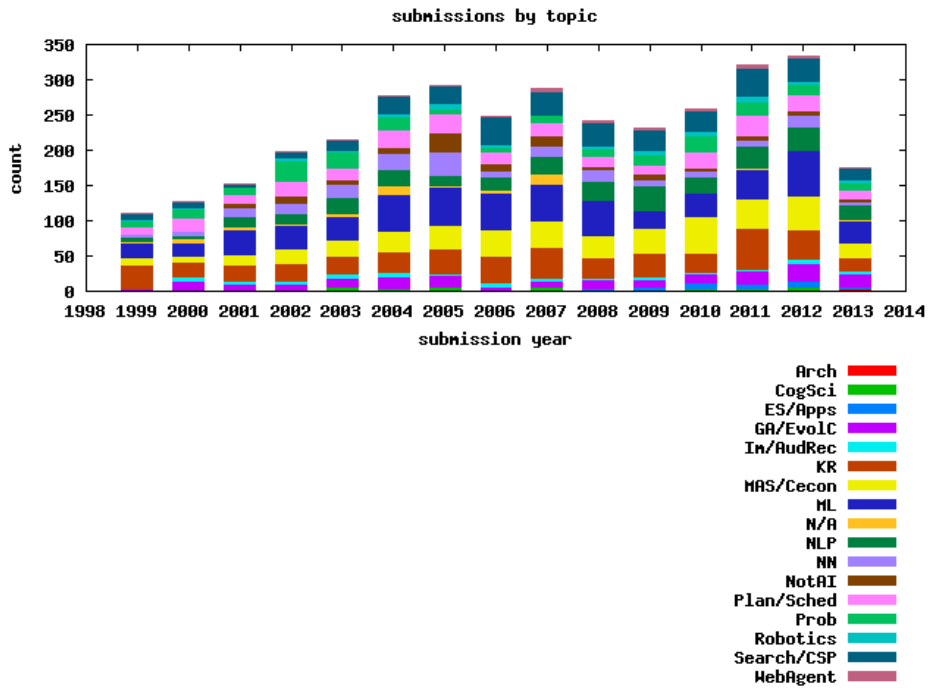


Figure 6: Submissions by topic organized by submission date.

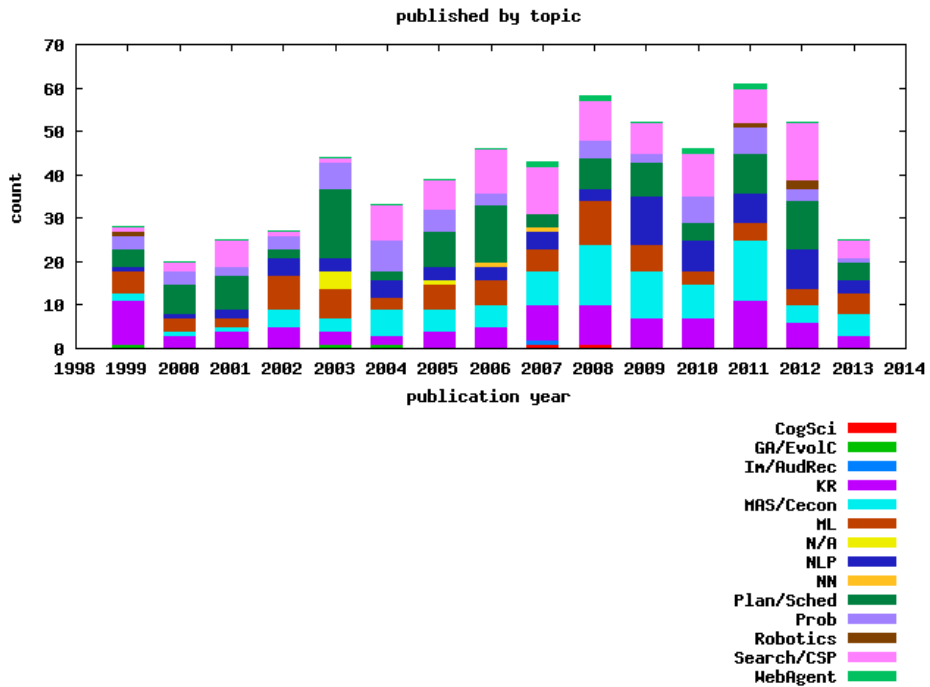


Figure 7: Published papers by topic organized by submission date.

Topic	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CogSci	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
GA/EvoIC	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Im/AudRec	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
KR	10	3	4	5	3	2	4	5	8	9	7	7	11	6	3
MAS/Cecon	2	1	1	4	3	6	5	5	8	14	11	8	14	4	5
ML	5	3	2	8	7	3	6	6	5	10	6	3	4	4	5
NLP	1	1	2	4	3	4	3	3	4	3	11	7	7	9	3
NN	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Plan/Sched	4	7	8	2	16	2	8	13	3	7	8	4	9	11	4
Prob	3	3	2	3	6	7	5	3	0	4	2	6	6	3	1
Robotics	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Search/CSP	1	2	6	1	1	8	7	10	11	9	7	10	8	13	4
WebAgent	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0
N/A	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0

Table 2: Published papers by topic organized by submission date.

Temporal statistics

Over the past few years, we have made concerted efforts to improve our editorial processes, including: introducing stricter measures for tracking review and production progress; streamlining production steps; reducing the time given to authors for revising their papers; and allowing Associate Editors to pre-approve papers that require very minor changes and permitting authors to send revised papers directly to production. These measures have helped reduce processing times rather significantly.

The average time from submission to a decision for *reviewed* papers in 2012 was 81.9 days, remaining near its all-time low of 81.2 days reached in 2011, and the 83.1 days achieved in 2010. The new measures mentioned above have reduced our decision time from an all-time high of 99.6 days in 2008. For the first six months of 2013, the number of days from submission to decision was 78.0. This outstanding achievement would not be possible without the excellent work of our editors and reviewers, as well as Lillian Bluestein’s stellar job of monitoring progress and flagging papers that seem to be falling behind schedule.

The average time to return a decision across *all submissions* reached an all-time low in 2012: 50.8 days (compared to 55.4 in 2011 and 58.2 in 2010). For the first six months of 2013, the number was at 39.7 days. We have seen a consistent improvement in these numbers since they reached 68.6 days in 2008.

For papers *published* in 2012, the average time to decision increased slightly to 80.6 days from its all-time low of 76.9 days achieved in 2011, but remains significantly lower than the 88 days in 2010 and 102 days in 2009. For papers published to date in 2013, the average time to decision has been 84.6 days.

The time from decision to publication reached an all-time low of 100 days in 2012, down from 111 days in 2011, 116 days in 2010 and 132 days in 2009. We are pleased to see this continued reduction in the period from decision to publication since it reached its all-time high of 189 days in 2006. For the first half of 2013 it was somewhat elevated, however, at 124 days.

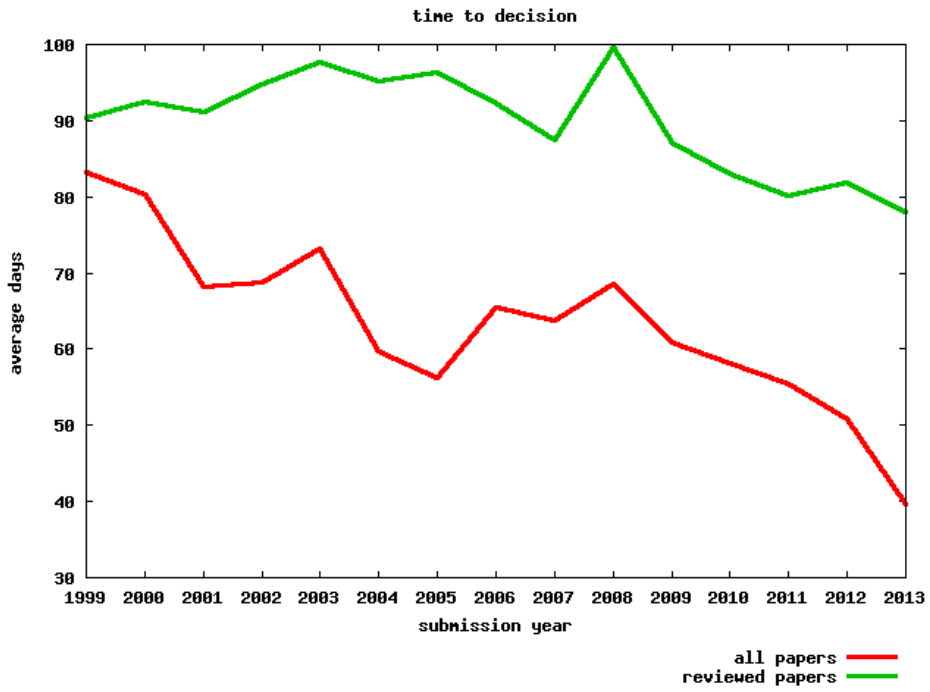


Figure 8: Time to a decision by submission date.

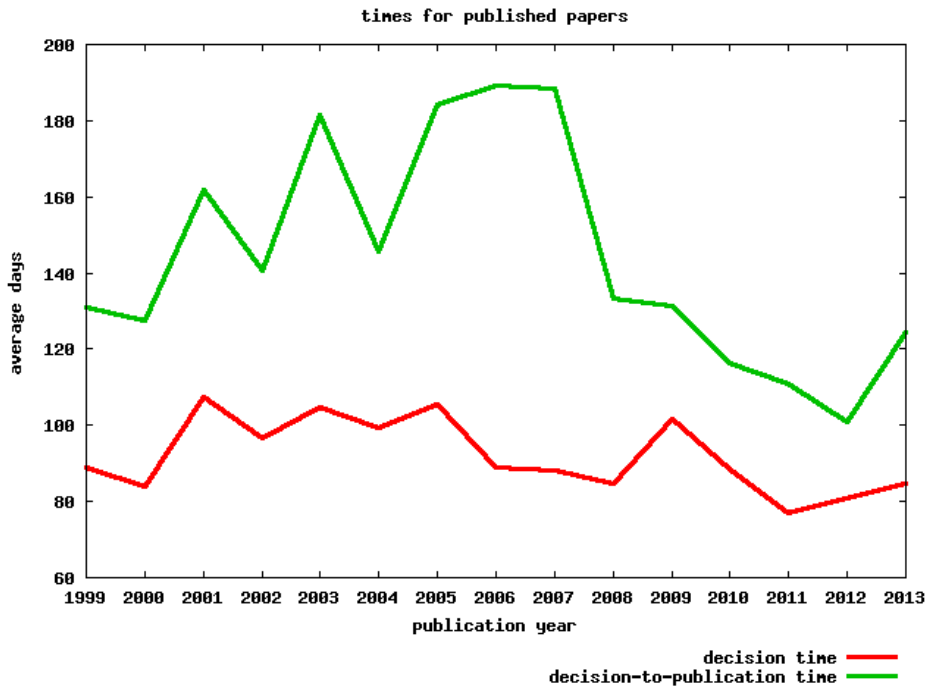


Figure 9: Time to publication by submission date.