

UCLA Department of Statistics

The Journal of Statistical Software
Past, Present, and Future

Jan de Leeuw and Katharine Mullen

July 3, 2014



Way back when, a message appeared on Stat-L

Date: Tue, 5 Sep 1995 16:56:12 -0700
Sender: Stat-l Discussion List
From: Jan Deleeuw
Organization: UCLA Center for Statistics
Subject: Journal of Statistical Software

Proposal:

Journal of Statistical Software

...

My proposal is to create a journal that is

- (a) electronic and freely available,
- (b) done in HTML (using Postscript or GIF where necessary),
- (c) interactive, where possible,
- (d) peer reviewed.

...

If I get generally positive reactions, I will start creating an editorial board, and I will start making room in our WWW.



One day later . . .

Date: Wed, 6 Sep 1995 09:09:04 -0700
Sender: Stat-1 Discussion List
From: Jan Deleeuw
Organization: UCLA Center for Statistics
Subject: Re: Journal of Statistical Software

Well, I am absolutely buried under positive reactions, useful suggestions, and (even more importantly) offers to help out and tentative submissions. I seemed to have hit a nerve here somewhere. Let me collect the various emails, select a preliminary group of (let's say) AE's, and start reserving space on <http://www.stat.ucla.edu> and <ftp://ftp.stat.ucla.edu>. I'll store the proposal and the email suggestions and responses there (in the ftp it will be in pub/JSS, in the WWW look on the homepage. Keep them emails coming. By the way, I am not going to rush into this. It is easy enough to dump papers on the net, but the key elements from the readers point of view is the quality and the interface, and from the authors point of view the respectability (peer review).

--- Jan



Less than one week later ...

Wayne Yuhasz (yuhasz@ben.birkhauser.com)

Sun, 10 Sep 95 09:39:53 +0000 (GMT)

Dear Dr. de Leeuw:

I am the executive editor for computational sciences for Birkhauser, Boston publishing company. I read with interest your material concerning the new electronic journal on the web site, especially the e-mail responses and opinions...

can we develop a relationship with JSS that benefits both??? ...

Birkhauser wants to grow and establish programs in many new applied areas like statistics...

Let me know your thoughts and level of interest in having a dialogue on the opportunity.



Back in 1995, there were concerns we don't have today . . .

Tue, 12 Sep 95 10:17:51 PDT
MJDurst@lbl.gov (Mark Durst)

Please plan explicitly to have text content indexed by GLIMPSE or some other engine. One of the principal advantages of an on-line journal is the possibility of indexing content as well as titles, keywords, etc. I have some experience with indexing Web content here at LBL, though you can no doubt find graduate students to do it as well.



Back in 1995, there were concerns we don't have today . . .

Andrew Westlake (AJW@statcomp.demon.co.uk)

Thu, 14 Sep 95 05:35:21 PDT

Jan,

A small technical comment about the Web pages. Could you try, where it makes sense, to keep the pages reasonably short, so that poor sods like me who are reading over dial-up Slip connections at 14.4 don't have to wait about too long. My particular bugbear at the moment is the mail message page, which is getting on for 100k now, and the interesting things are at the end.



Back in 1995, there were concerns we don't have today ...

Sergey A. Tarasenko (tar@kmuga.freenet.kiev.ua)

Wed, 20 Sep 95 12:46:20 +0300

Hi, Jan,

I read your last NEWS and have one question.

As I have not access to WWW, are there ftp access to informations



But the ever-helpful Martin was there for guidance . . .

Martin Maechler (maechler@stat.math.ethz.ch)

Mon, 2 Oct 95 01:17:22 PDT

My own 2 cents: The FAQ about 'hypertex' that Jan posted 2 weeks ago, really intrigued me quite a bit.

Most of us write articles in latex anyway, why not use this extra nice (l)atex package for our articles instead of starting to go backwards and write in an html-oriented style which really does not cater too much to applied-math-kind of topics ?



Distant Past

- JSS started as an e-journal in 1996 at UCLA Statistics
 - One editor-in-chief: Jan de Leeuw
 - Initial board of about 15
- In the first vol., HTML presentation via latex2html
- Growth was very slow in the beginning, but picked up speed with the American Statistical Association (ASA) adoption in 2000 and the R Revolution.



Today

- There are three editors in chief. Achim Zeileis was technical editor 2004-2007, and became an editor in chief in 2007. Bettina Grün joined as an editor in chief in 2013.
- We have 58 (associate) editors.
- We have published 58 volumes with 636 articles, 43 code snippets, 112 book reviews, 6 software reviews.
- There are 14 special volumes, many with a title of the form X with R . More are forthcoming.



Why

Among JSS' original purposes were to

- promote open access publishing,
- promote free software
- make it possible for software writers to receive academic credit for their work,
- promote the new UCLA Department of Statistics.



Why

What does *free* software mean?

- free software does not mean *free* as in free beer but rather *free* as in freedom. Free to examine in source code form, modify and (re)distribute under the terms of the GNU General Public License, which preserves these freedoms for other users downstream.
- open source \neq free software; e.g., many permissive licenses allow source code to be used to develop proprietary binaries.



Business Model

- We are open access in the full sense: we do not charge authors to submit or publish, and we do not charge readers subscription fees.
- Costs are minimized by working with volunteers, using only free as in beer software to manage the journal, and publishing only online.
- Compared with other journals, authors are expected to do somewhat more work for the final editing of their manuscripts to fully comply with style and replication guidelines.



What

JSS will publish the following types of original contributions

- Manuals, user's guides, and other forms of description of statistical software, together with the actual software in human-readable form (peer-reviewed).
- Code snippets — small code projects, any language (peer-reviewed).
- Special volumes on topics in statistical computing (by invitation, guest editors, peer-reviewed, suggestions welcome).
- Reviews of books on statistical computing and software (by invitation, suggestions welcome).
- Reviews and comparisons of statistical software (by invitation, suggestions welcome).



What

- The typical JSS paper will have sections for description of statistical technique, description of code and examples.
- Submissions should include a PDF manuscript in JSS style, source code for the software, and replication materials for all results from the manuscript.
- The license(s) of the software should be clearly indicated and must include the GNU General Public License version 2 or 3.
- Papers should preferably be in English.
- Manuscripts must be submitted in $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$.



Format

- Initially JSS was a PHP application, in 2005 it was rewritten by Jose Hales Garcia of UCLA Statistics as a Rails application.
- In 2010 Jose added an editorial backend, also in Rails. The backend for now can only be accessed by editors, not by reviewers or authors. They use email.
- The uniform format, and corresponding $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ module, started with Volume 11, in 2004. No more Word.



Process

- Submissions preprocessed for relevance/suitability by an Editor in Chief (EiC), for compliance with style/replication guide by Assistant Editor (AE).
- Preprocessed submissions are adopted by an AE or assigned by an EiC to an AE.
- AE finds reviewers, uses reviews to recommend acceptance, revision or rejection. EiC uses recommendation to decide on status of submission.
 - If invited, authors prepare a revision and resubmit; this iterates.
- Acceptance is conditional upon fully complying with all style and replication guidelines. These are enforced in an EiC-coordinated postprocessing phase.



American Statistical Association

- In 2000, JSS became an ASA journal, a joint initiative by Jan de Leeuw and Andreas Buja, then Journal of Computational and Graphical Statistics (JCGS) editor.
- In 2001 JCGS started publishing JSS abstracts/titles.
- ASA owns the ISSN and the CODEN numbers of JSS.
- ASA does not get involved with editing, copyright, editorial board, and finances of JSS.
- JSS remains on the UCLA servers, using a UCLA domain name, financially supported by UCLA Statistics.



Foundation for Open Access Statistics

- The JSS costs are increasing, because there are more and more submissions.
- We rely on UCLA Statistics for financial support (namely an editorial assistant), but that is not guaranteed to continue, and it may eventually not be enough.



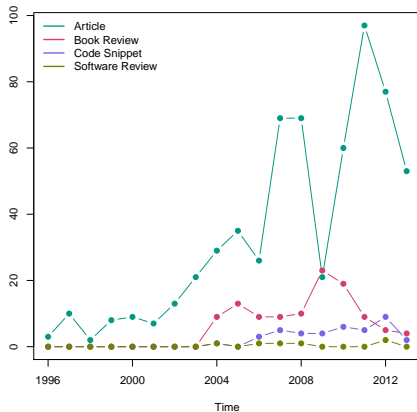
Foundation for Open Access Statistics

- In 2012 Mullen, Zeileis, and De Leeuw started the Foundation for Open Access Statistics (FOAS) to support JSS.
- FOAS has a worldwide mission to promote free software, open access publishing, and reproducible research in statistics.
- It has many affiliated projects that were presented at useR!, see the list at <http://foastat.org/>.
- In 2014 FOAS became a 501(c)(3); US contributions are tax-deductible backdated to 2012.
- JSS is the only project that FOAS supports financially.



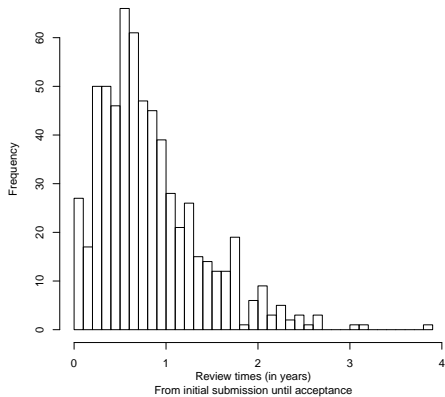
Output

Publications per year



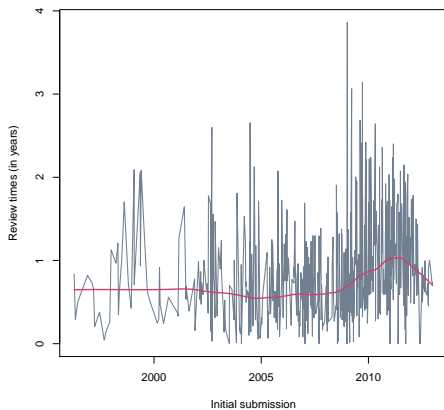
Turnaround

Review time from submission to acceptance



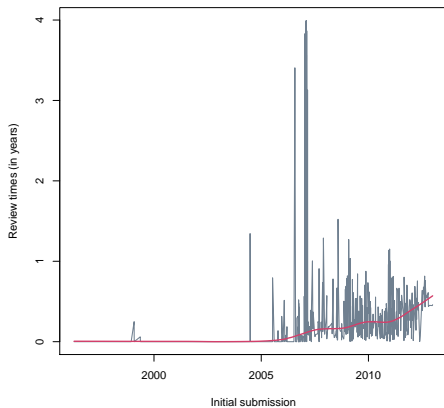
Turnaround

Review time against time



Turnaround

Post-processing time against time



Impact

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Impact

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- And we can probably also agree that when talking to publishers, authors, and deans, it is better to have a high IF than a low one.
- So let us rejoice in the fact that JSS has a really high IF.



IF over Time

Year	Impact Factor (IF)	Total Articles	Total Cites
2012	4.91	77	2629
2011	4.01	95	1795
2010	2.647	60	1039
2009	2.32	42	714
2008	1.033	43	423



Impact Factor

Mark	Rank	Abbreviated Journal Title <i>(linked to journal information)</i>	ISSN	JCR Data ^(j)					Eigenfactor [®] Metrics ^(j)		
				Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Articles	Cited Half-life	Eigenfactor [®] Score	Article Influence [®] Score
<input type="checkbox"/>	1	J_STAT_SOFTW	1548-7660	2629	4.910	5.907	0.753	77	5.0	0.01734	3.310
<input type="checkbox"/>	2	J_R_STAT_SOC_B	1369-7412	13388	4.810	5.354	0.938	32	>10.0	0.01833	5.300
<input type="checkbox"/>	3	ECONOMETRICA	0012-9682	21481	3.823	5.702	0.740	77	>10.0	0.04571	9.622
<input type="checkbox"/>	4	ANN_STAT	0090-5364	12736	2.528	3.938	0.284	74	>10.0	0.04655	4.572
<input type="checkbox"/>	5	BIOSTATISTICS	1465-4644	2632	2.427	3.607	0.554	56	7.9	0.01309	2.630
<input type="checkbox"/>	6	BAYESIAN ANAL	1931-6690	646	2.417	2.169	0.171	35	5.5	0.00436	1.621
<input type="checkbox"/>	7	STAT METHODS MED RES	0962-2802	2044	2.364	3.142	0.758	33	>10.0	0.00567	2.004
<input type="checkbox"/>	8	CHEMOMETR INTELL LAB	0169-7439	4880	2.291	2.432	0.253	154	9.5	0.00612	0.595
<input type="checkbox"/>	9	STAT SCI	0883-4237	3236	2.239	3.739	0.441	34	>10.0	0.00896	3.719
<input type="checkbox"/>	10	ANN APPL STAT	1932-6157	1074	2.237	2.895	0.275	80	3.5	0.01534	2.433
<input type="checkbox"/>	11	STAT MED	0277-6715	15994	2.044	2.789	0.250	336	>10.0	0.04294	1.661
<input type="checkbox"/>	12	STAT COMPUT	0960-3174	1886	1.977	2.663	0.382	89	>10.0	0.00682	2.024
<input type="checkbox"/>	13	STOCH ENV RES RISK A	1436-3240	1154	1.961	1.888	0.325	83	3.8	0.00366	0.522
<input type="checkbox"/>	14	J_CHEMOMETR	0886-9383	2658	1.937	1.935	0.212	66	9.5	0.00361	0.588
<input type="checkbox"/>	15	J_BUS ECON STAT	0735-0015	3117	1.932	2.369	0.217	46	>10.0	0.01027	2.970
<input type="checkbox"/>	16	JAM_STAT_ASSOC	0162-1459	22728	1.834	3.139	0.161	124	>10.0	0.03572	3.220
<input type="checkbox"/>	17	FUZZY SET SYST	0165-0114	10518	1.749	2.218	0.246	171	>10.0	0.01099	0.636
<input type="checkbox"/>	18	STAT APPL GENET MOL	2194-6302	1483	1.717	1.679	0.273	55	8.1	0.00362	0.926
<input type="checkbox"/>	19	MULTIVAR BEHAV RES	0027-3171	2806	1.657	3.213	0.059	34	>10.0	0.00600	2.146
<input type="checkbox"/>	20	BIOMETRIKA	0006-3444	14376	1.650	2.501	0.303	76	>10.0	0.01934	2.862



CS, Interdisciplinary Applications

Journal Summary List [Journal Title Changes](#)

Journals from: **subject categories COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS** [VIEW CATEGORY SUMMARY LIST](#)

Sorted by:

Journals 1 - 20 (of 100) Page 1 of 5

[1](#) | [2](#) | [3](#) | [4](#) | [5](#)

Ranking is based on your journal and sort selections.

Mark	Rank	Abbreviated Journal Title <small>(linked to journal information)</small>	ISSN	JCR Data ^j					Eigenfactor [®] Metrics ^j		
				Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Articles	Cited Half-life	Eigenfactor [®] Score	Article Influence [®] Score
<input type="checkbox"/>	1	J_STAT_SOFTW	1548-7660	2629	4.910	5.907	0.753	77	5.0	0.01734	3.310
<input type="checkbox"/>	2	COMPUT-AIDED CIV INF	1093-9687	1315	4.460	3.326	0.623	53	5.0	0.00266	0.689
<input type="checkbox"/>	3	J_CHEM_INF_MODEL	1549-9596	11250	4.304	4.067	0.795	303	6.6	0.01901	0.890
<input type="checkbox"/>	4	MED_IMAGE_ANAL	1361-8415	3238	4.087	4.662	0.624	117	6.5	0.00724	1.359
<input type="checkbox"/>	5	IEEE_T_MED_IMAGING	0278-0062	11439	4.027	4.268	0.603	194	9.1	0.02012	1.402
<input type="checkbox"/>	6	J_CHEMINFORMATICS	1758-2946	315	3.590	3.671	0.314	35	1.9	0.00175	1.221
<input type="checkbox"/>	7	J_AM_MED_INFORM_ASSN	1067-5027	5012	3.571	3.959	0.925	186	6.2	0.01317	1.333
<input type="checkbox"/>	8	ENVIRON_MODEL_SOFTW	1364-8152	4818	3.476	3.608	0.979	145	5.1	0.01456	1.040
<input type="checkbox"/>	9	IEEE_T_IND_INFORM	1551-3203	969	3.381	3.191	0.880	92	2.6	0.00271	0.675
<input type="checkbox"/>	10	INTEGR_COMPUT-AID_E	1069-2509	421	3.370	2.389	0.741	27	3.2	0.00103	0.467



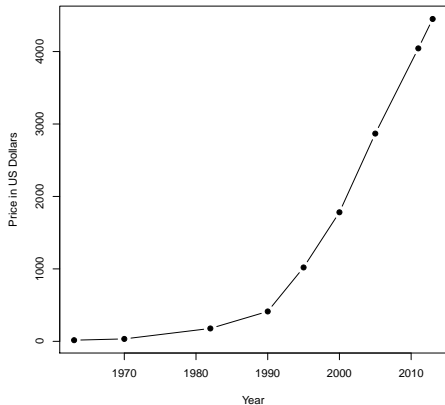
Wherefore success?

- Ubiquitous internet access allows for essentially free, widespread distribution.
- JSS was backed by UCLA's prestige and resources (for front and back-end development, editorial assistance).
- Dedicated, skilled, well-positioned volunteers contribute lots of work.
- Authors willing and able to do much of typesetting.
- Increasing currency of computational statistics and reproducible research.



In what context success?

Average price of yearly subscription to chemistry periodicals against time



In what context success?

- Cost of scientific periodicals increased at > 3 times the rate of inflation since 1986.
- Money is being made: Elsevier's profit margin in 2013 on its £2.1 billion in revenue from science, tech., and medical journals was 39%.
- Prestigious publishers like Nature Publishing Group are not above tricks like jacking subscription prices for the UC system 400% between 2010 and 2011 (they only relented after threat of system-wide boycott).
- The public first pays to create research, then must pay again to get the results from behind a pay wall.



Toward more JSS-like journals

- Can we get there by publishing with non-profit publishers / archiving in non-profit repositories?
 - Not really. Look at JSTOR; it is a non-profit that locks an immense number of articles behind a pay wall.
- Can we get there by publishing in open-access journals?
 - Not really. Plenty of open-access journals (both for-profit and non-profit alike) charge authors hundreds to thousands to submit papers. Shifting costs to authors skews scholarly discussion to those who can pay to speak; also, the efficiencies to be gained via internet distribution and technology may not be used.



Toward more JSS-like journals

- Make your work freely available online.
 - More and more institutions (NIH, University of California, Harvard, ...) are setting up open access repositories and mandating that their research publications go into them.
 - You can use your own website, arXiv statistics, Social Science Research Network, Research Papers in Economics (RePEc), CiteSeerX, Optimization Online, ...
- Don't donate content, reviews or editorial work without understanding and supporting the publisher's "business model".
 - >14,000 researchers are boycotting Elsevier.



Toward more JSS-like journals

But what about peer-review and prestige?

- Support peer-reviewed journals that are open access to both authors and readers like JSS and R Journal.
- Consider starting your own scholarly journal along the lines of JSS, especially if you have some prestige to burn.



How does JSS' future look?

Sunny in that

- Interest is at an all-time high.
- Number of submissions continues to rise.
- Quality of articles increases as JSS becomes more selective.

Stormy in that

- The queue of submissions waiting to be adopted is getting longer.
- The queue of submissions adopted and in the review process is getting longer.
- The queue of accepted papers waiting to be published is getting longer.
- Our financial future is insecure.
- de Leeuw's retirement is upon us.



Moving forward

To encourage the stability and continued success of JSS we could use

- More editorial assistance, in particular with pre- and post-processing.
- A larger editorial board and referee pool. We could possibly go to “public review”.
- Money, especially if UCLA pulls funding.
- An improved and extended editorial app (possibly via a move to Open Journal Systems but then how about the legacy data base?).

As a matter of principal will never collect fees from readers or authors.

We would appreciate donations to FOAS from individuals or institutions, which will be carefully used to ensure the success of JSS in years to come.





<http://gifi.stat.ucla.edu/>

Selected References

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Elsevier Boycott by > 14,000, <http://thecostofknowledge.com/>.

UCLA's situation in 2010 with Nature Publishing Group: http://blogs.library.ucla.edu/biomedical/files/2010/06/Nature_Faculty_Letter_060410.pdf.

