

Creating a dataset of peer review in computer science conferences published by Springer

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Short Term Scientific Mission
PEERE TD1306
New Frontiers of Peer Review

STSM 2 March to 20 May 2015



Background

- Computer science publishes more research as conference proceedings than as journal articles
- More reviewers, faster publication
- They constitute **20-70%** of references in journals
- Journals in CS (n=400) IF - **0,77 to 1,47**

Proceedings n=10 310

- LNCS – Lecture Notes in Computer Science (8948)

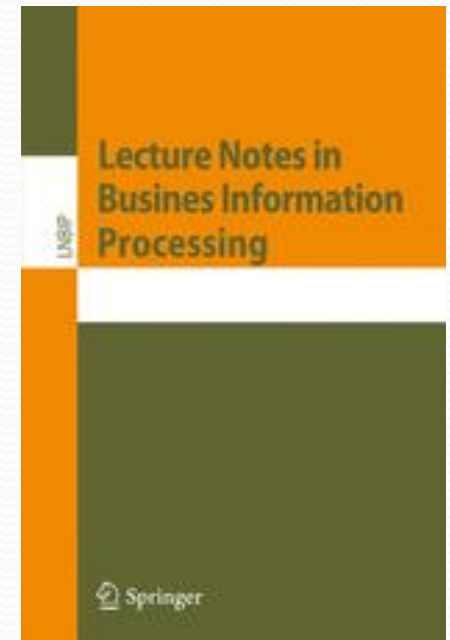


1995- 1000 volumes (40-50)

2002 – 2500 volumes (100)

>2010 – 2014 600 per year

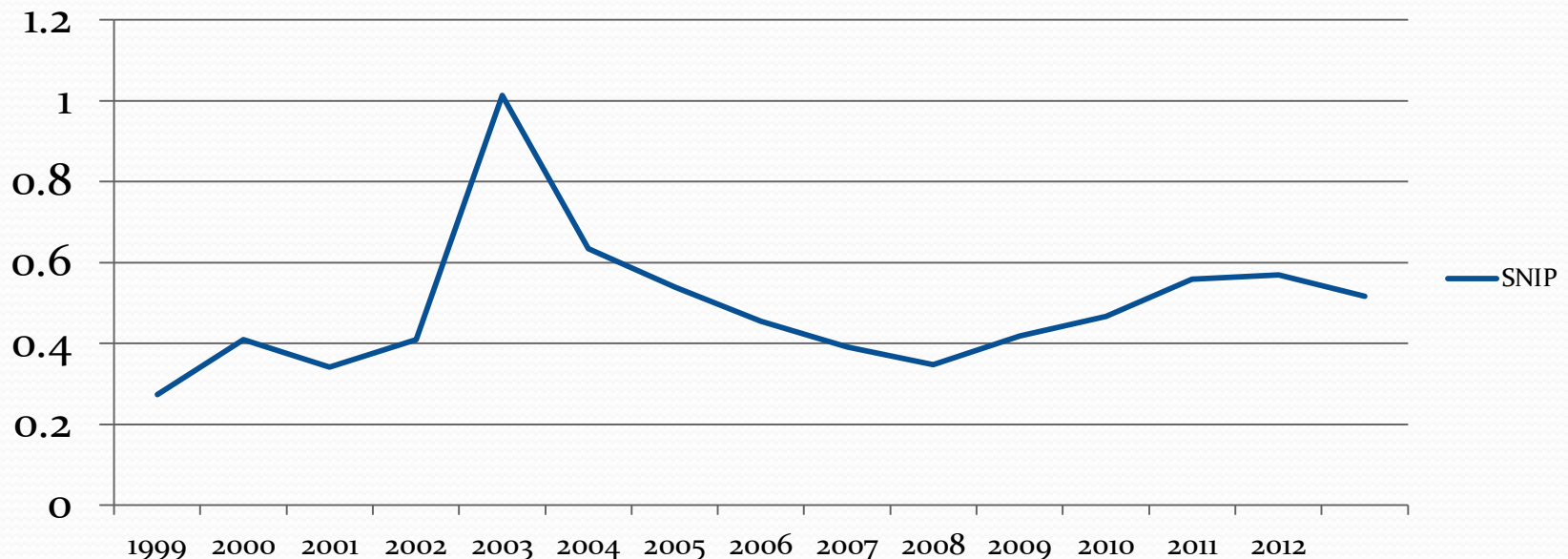
- LNICST - Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering (141)
- IFIP-AICT - Advances in Information and Communication Technology (525)
- LNBIP - Lecture Notes in Business Information Processing (201)
- CCIS - Communications in Computer and Information Science (495)



LECTURE NOTES IN COMPUTER SCIENCE

- 1973, from 1981. in Web of Science
- Scopus – 250 000 articles, WoS >100 k
- Md conference iteration is 7 (1-50) ~ 1500 conferences

SNIP- Source normalized impact per paper



Linked Open Data

- a method of publishing information in a structured format which enables data to be read automatically by computers
- easy retrieval, analysis and linkage with other data

LOD

Now in the Linked Open Data Cloud
Improved findability of Springer Computer Science Proceedings

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Springer LOD

City	country	conf
"Beijing"	"China"	110
"Paris"	"France"	105
"Vienna"	"Austria"	97
"Barcelona"	"Spain"	79
"Berlin"	"Germany"	76
"Rome"	"Italy"	68
"Prague"	"Czech Rep."	68
"Amsterdam"	"Netherlands"	63
"Budapest"	"Hungary"	61
"London"	"UK"	59
"Tokyo"	"Japan"	58

Aim:

- To add peer review data about conferences to Springer's linked open database (*no. of accepted/submitted papers, blinding, info on external reviewers, criteria, plagiarism check*)

Proceedings of IFIPTM 2008: Joint iTrust and PST Conferences on Privacy, Trust Management and Security, June 18-20, 2008, Trondheim, Norway

Preface

This volume contains the proceedings of the IFIPTM 2008, the Joint iTrust and PST Conferences on Privacy, Trust Management and Security, held in Trondheim, Norway from June 18 to June 20, 2008.

IFIPTM 2008 provides a truly global platform for the reporting of research, development, policy and practice in the interdependent areas of Privacy, Security, and Trust. Following the traditions inherited from the highly successful iTrust and PST conference series, IFIPTM 2008 focuses on trust, privacy and security from multidisciplinary perspectives. The conference is an arena for discussion about relevant problems from both research and practice in the areas of academia, business, and government.

IFIPTM 2008 is an open IFIP conference, which only accepts contributed papers, so all papers in these proceedings have passed **strict peer review**. The program of the conference features both theoretical research papers and reports of real world case studies. IFIPTM 2008 **received 62 submissions**. The program committee **selected 22 papers** for presentation and inclusion in the proceedings. In addition, the program and the proceedings include 3 demo descriptions.

Read >10 000 prefaces?

- *Jdownloader* - download all front matters
- *UniPDf* - convert .pdf to .txt
- *Perl scripts* - regex matching

Regular expression matching

- “search” and extract

*Perl programm - Perl Compatible Regular Expressions -
PHP, Ruby, Java*

- **[hc]+at** matches "hat", "cat", "hhat", "chat", "hcat", "cchchat", and so on, but not "at"
- **[hc]?at** matches "hat", "cat", and "at"
- **[hc]*at** matches "hat", "cat", "hhat", "chat", "cchchat"
- **cat|dog** matches "cat" or "dog"

Regular expression matching

- `foreach my $sentence (@$sentences){
if ($sentence =~ m/(\b\d{1,3}\%?\b).+ (peer-
?|review(ed)?|abstracts?|submission|regular|invited|s
ubmitted|accepted|select(ed)?|papers?|acceptance|de
mo|several|manuscripts?|articles?|talks? |keynote
paper|acceptance
rate|(review(ed)?)|Easy?Chair|CyberChair{PRO}?/
gip) {`

Example

The program committee accepted for presentation 64 regular papers, 21 posters, and 10 student papers.

All papers underwent a thorough review process, with each paper receiving between 3 and 5 reviews as well as a meta-review that summed up the online discussion of the paper.

Papers were accepted, based on blind peer-review. Submissions registered in the chosen system EasyChair.

Pilot – 1770 books

- 5th March downloaded
- for 251 conversion to .txt failed (Adobe - OCR)
- Each 4 series were handled one by one and regex matching compared to full reading of 34 proceedings from one series (total 146)
- For 136 volumes the (modified) script found no matching sentences that contained the combination of keywords and numbers. –these were also read

Problem - Type of papers - 30+

full papers medium papers short papers posters
tools demos extended abstracts abstracts
application papers brief announcements
case studies distinguished papers
doctoral consortium experience experimental
exploratory idea in progress industrial invited
position practices rough diamonds system
descriptions theory tutorials vision papers
workshop papers technical communications

Problem - inconsistency

- Preface/ Welcome Address/Foreword/ General Chair's
- Organiz**z**ation/Organis**s**ation
- Peerreview /peer-review/peer - review/peer review
- Numbers written as words (twenty(-)one - 20-1) 201
- mim**i**nimum
- **external/outside** reviewers
- The process was **triple blind**: reviewers did not know the authors' names, authors did not know the reviewers' names, and reviewers did not know the other reviewers' names.

Adapt

- `$text =~ s/^.*?Preface\b//s; # remove all till preface, sometimes preface was report on`
- `$text =~ s/^.*?Welcome Address\b//s;`
- `$text =~ s/^.*?General Chair.?s Message\b//s;`
- `$text =~ s/^.*?Foreword\b//s;`
- `$text =~ s/\\bTable of Contents\\b.*//g; # remove table of contents`
- `$text =~ s/\\bOrganization\\b.*//g;`
- `$text =~ s/\\bOrganisation\\b.*//g;`

Limitations

- Preface as header
- Table of contents – mentioned in the preface
- Several conferences published within the same book
- Several books handling the same conference

Lack of Accuracy

- we had a tremendous amount / many submission
- approximately 237 submission
- more than 300 submissions
- almost 90 submissions
- at least/minimum 3 reviewers
- Each paper was reviewed by 3 or 4 referees

Did read >50 000 sentences

- After the first round of evaluation, 90 papers were selected. In the second round, 30 papers were accepted.
- Received a record number of 152 submissions, materializing in 136 submissions
- Of 238 full paper and 130 short submitted we accepted 54, and 48 of which 8 came from full paper submissions

Missing information

- acceptance rates – 53⁰%
- blinding – 7⁰% (126 single blind vs 201 double blind)
- external reviewers – 30⁰%
- online submission system – 17⁰% - 25 different

EasyChair ConfDriver ConfTool OpenConf CyberChair START WIMPE Springer OCS
Confious Paperdyne Conf Master PaperPlaza Microsoft's CMT Colibri SIGACT
ConfManMETAFrame WebReview iChair CAWS MuCoMS IACR Electronic
Submission Server EDAS OCMS CoMSTM


Series	Acc. rate	95 % CI	Range
LNICST	39%	36–48	17–78
IFIP AICT	42%	35–48	7–76
LNBIP	33%	32–37	6–70
CCIS	29%	27–32	18–79
LNCS	37%	34–40	9–84


Peer Review

- **29 adjectives** used to describe it: *careful* competent comprehensive constructive detailed diligent excellent extensive fair in-depth insightful intensive invaluable objective on-time outstanding professional qualified quality *rigorous* selective strenuous strict stringent strong substantial *thorough* thoughtful *timely* tough
- **Very few mentioned criteria** (most commonly quality and originality)
- **number of reviewers (Md=3, 95%CI 3-3, range 2-11)**

Peer Review cont.

- We used a ranking list as resulted from the weighted average scores of all papers in a **scale from 1** (lowest possible) **to 6** (highest possible) as computed by **taking into account the reviewer's confidence** as a weighting factor
- In order to come up with **a final decision**, the **meta-reviewers** used a ranking list according to the weighted average scores of all papers on a scale from **-3 (lowest possible) to +3 (highest possible)**, the reviewer's confidence being used as the weighting factor.

- 
- Papers with a weighted average score of 3.7 or above but less than 4.0 were accepted as short papers.
 - Authors of 90 papers (out of a total of 181 papers) rated each review they received.
 - The average level of submissions was high, with 38 papers scoring above the average, and we were sorry to have to reject some of them.

- 
- If you make a submission to the workshop it will be read by everyone on the Programme Committee, but each reader is asked only to return a single score (Win, Draw, or Lose) rather than a detailed review. This means that a controversial paper (gaining equal numbers of 3 and 0 scores) will outrank a solid but boring 1 (which would get just 1 point from each reviewer).

Plagiarism

- 1 of the submitted papers was also submitted to TOOLS Europe 2011 and was rejected by both conferences without reviews.
- For quality control, we conducted a cross-check on the submitted papers for any possible duplicated submissions to 4 other related concurrent international conferences.

Fields for future volumes

- Number of submissions that were sent for peer review____
- Number of accepted: a) full papers____
b) short papers____ c)other____
- Online submission system employed(e.g. EasyChair)
- Type of peer review used: a) single blind
b) double blind c)open peer review d)other
- Average number of reviews per submission?_____
- Use of external reviewers ?_____

What's Next for the STSM

- Finalize the data
- Put all the data in LOD
- Publish a PEERE paper in Scientometrics

Increasing the transparency of science

- Compare conferences and follow their progress
- Compare acc rates with citations and altmetrics
- Prestige of conferences
- Enable the organizers to fill in the missing data / consider mining the conference websites
- Encourage journals/other fields to publish same data/ year

Acknowledgments

- Yannick Versley - for suggesting the first script:
[0-9]+ (regular|invited|submitted|accepted) (submissions|papers)
- Markus Kaindl – for LOD and Series extraction
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- Mislav Papparella – for suggesting *Jdownloader*
- Frank Holzwarth – for help with *.pdf* conversion





Thank you!

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