WRITING OF SCIENTIFIC PUBLICATIONS (AND BEYOND)

Isabelle Puaut
OBJECTIVES

Become familiar with the publication process
- Motivations for publishing
- Writing guide
  - Highlight on literature surveys
- Evaluation process
OUTLINE

- Publish: why? when? where?
- Writing a paper
  - Contents and organization
  - Presentation
  - Paper writing in 5 steps
  - Writing a bibliographic study
- Evaluation
  - The evaluation process
  - Tips for paper evaluation
- Access to scientific publications
- Impact and ranking
- Towards a PhD thesis, and beyond, ...
- Let’s practice!
Sources and credits

Contents

- Some hints to improve writing of technical papers, Patrick Valduriez, INRIA
- The task of a referee, Alan Jay Smith, University of California at Berkeley
- Reading for a PhD, Louise Baron

Illustrations (not to be taken too seriously, but...)

- The PhD comics: http://www.phdcomics.com
Scientific Publications: Why?

- Main reasons
  - Submit new research results to the scientific community
  - Contribute to the progress in your discipline
  - Get feedback from your peers
  - Still the main criterion to evaluate your research work ("publish or perish")

- But also
  - Get known (positively!) in your community
  - Improve your publication record for future applications in academia and industry
  - Meet new and different people
  - Travel
**Scientific Publications: When?**

- When you have something to say to your scientific community!!
- When your supervisor tells to so!

- More seriously, when a significant enough new result is obtained
SCIENTIFIC PUBLICATIONS: WHERE?

- Workshops, work-in-progress session, poster session
- Conferences
- Journals
- On-line journals?
WRITING A PAPER

Contents and organization
Presentation
Writing a paper in 5 steps
Writing a bibliographic study (and reading)
TYPICAL CONTENTS

1. Title
2. Abstract
3. Introduction
4. Development of the contribution
5. Validation
6. Related work (or in 4.)
7. Conclusion and future work
8. Bibliography
**CONTENTS: title**

- Specific
- Not too broad
- Should point out the contribution if possible
- Teasing

**Examples:**
- Contributions to Information Theory 😞
- A new framework for distributed computing 😞
- Translation Caching: Skip, Don’t Walk (the Page Tables) 😊
- WiIDGET: Wisconsin Decoupled Grid Execution Tiles 😊
CONTENTS: title

- Acronym creators (e.g. http://acronymcreator.net)
CONTENTS: ABSTRACT

- Summary of the entire paper
  - Context and motivation
    - Why should we care about the problem and the results?
  - Problem statement
    - What problem the paper is trying to solve?
  - Methods used to answer the questions
    - What was done to solve the problem?
  - Results obtained
    - What is the answer to the problem?

- Should encourage to read the paper!
CONTENTS: ABSTRACT

Abstract MadLibs!!

This paper presents a _________ method for _________
(synonym for new) (sciencey verb)
the _________________. Using ________________, the
(noun few people have heard of) (something you didn’t invent)
___________ was measured to be _______ +/- _______
(property) (number) (number)
_________. Results show __________ agreement with
(units) (sexy adjective)
theoretical predictions and significant improvement over
previous efforts by ____________, et al. The work presented
(Loser)
here has profound implications for future studies of
(buzzword)
___________ and may one day help solve the problem of
(supreme sociological concern)
CONTENTS: INTRODUCTION

Should:
- Introduce the context of the work
- Present an overview on current research on the subject
- Present the limitations of existing work
- Highlight the paper contributions
- Give an outline of the paper

The most difficult part
- Some authors write the introduction in the final stage, some supervisors write the introduction themselves
- A paper with a bad introduction will never be read
CONTENTS: THE PAPER CORE

- The substance, the « meat », la « substantifique moelle »
  - Develop the central idea of the paper
  - Has to convince the specialist of the importance, novelty and validity of the idea
CONTENTS: THE PAPER CORE

- Select the central idea and focus on it:
  - Too many ideas, even if linked, create confusion
  - ... and make your paper too long and hard to read

- Carefully select how to present your idea
  - Formalism, algorithm, example?
  - Be consistent, introduce the notations
  - A single example used throughout the paper is the best
CONTENTs: VALIDATION

- Your results have to be validated
  - The only way to convince
  - Formal papers: proofs (correctness, termination, complexity, etc.)
  - More experimental papers: numbers (measurements, simulations)
CONTENTS: RELATED WORK (MANDATORY)

- Objectives
  - Show your knowledge of related work in the area
  - Emphasize the difference of your approach compared to previous work

- Tips
  - Cite « important » work only
  - Balance between seminal work and more recent work
  - Should be organized to serve your topic, while giving credits to the other researchers
  - Authors of cited papers might review your paper! Be balanced...
  - May be placed before or after the paper core
CONTENTS: CONCLUSION

- Should return to the opening
- Re-examine the original objective in the light of the research presented
- Should discuss:
  - The possible limitations of your research
  - Ideas for future extensions
CONTENTS: BIBLIOGRAPHY

- Exhaustive: list all classes of related approaches
- Balanced between labs/groups working in the domain
- Balanced between seminal works and more recent studies
- Avoid too many self-references
PAPER STRUCTURE

- Organize the paper in sections, sub-sections, paragraphs
  - In a consistent manner

- Most readers/reviewers won’t read the paper sequentially
  - Some degree of redundancy is not a big issue
PAPER PRESENTATION

- Style
  - Brief,
  - Active,
  - Precise,
  - Simple,
  - Particularly important if English is not your mother tongue
- Give illustrations
  - Moderately complex

« Ce qui se conçoit bien s’énonce clairement et les mots pour le dire arrivent aisément » Nicolas Boileau
PAPER PRESENTATION

- Most people print in B&W
  - Avoid using and naming colors
  - Curves must be legible in B&W
- Avoid tiny font sizes (figures, curves)
  - Most PC members are above 40 😊
WRITING A PAPER IN 5 STEPS...

- **Step 1: starting**
  - Make sure you have a real contribution
  - Discussion with colleagues, give a talk to have feedback

- **Step 2: Planning**
  - Detailed outline
  - Key ideas per section/paragraph
WRITING A PAPER IN 5 STEPS...

- Step 3: Writing
  - Paper core first (personal tip)
  - Finish with the introduction, abstract and conclusion

- Step 4: Checking
  - Use tools to check spelling, grammar, missing references, etc.

- Step 5: Rewriting
  - Circulate the paper internally to get feedback
I have an idea
I would like to publish it...
The different places...

- Workshop
- Conference
- Journal
  - English... French?
WORKSHOPS...

- For ongoing, not (yet) fully validated work
- Some workshops are well-established
- Satellites to many conferences...
- Opportunity to
  - Discuss with researchers
  - Obtain early feedback on your research
  - Attend the conference
- Evaluation process lighter than conferences
  - Short papers, fast reviews, less selective

- Alternative places: poster sessions, work-in-progress sessions
CONFERENCES

- Mature work, well validated
- “Long” papers (10 pages in double-column)
- “Professional” evaluation process:
  - 3 to 5 reviewers
  - 3-month delay between submission and acceptance notification
- Some conferences are VERY selective
JOURNALS

- Normal outcome of a good quality research work
- Serves as a scientific reference
- Space budget is not an issue anymore
- Evaluation process might be long
  - 1-2 years
The « Call for Papers »

- Pay attention to everything
- Topics and tracks
- Deadlines
- Respect the rules!
CALL FOR PAPERS
December 4 – December 7, 2012
San Juan, Puerto Rico
Sponsored by the IEEE Computer Society
Technical Committee on Real-Time Systems

Scope of the Conference
IEEE Real-Time Systems Symposium (RTSS) is the premier conference in the area of real-time systems, presenting
innovations in the field with respect to theory and practice. RTSS provides a forum for the presentation of high-quality,
original research covering all aspects of real-time systems design, analysis, implementation, evaluation, and experiences.
RTSS’12 continues the trend of making RTSS an expansive and inclusive symposium, looking to embrace new and
emerging areas of real-time systems research.

RTSS’12 welcomes submissions in all areas of real-time systems, including but not limited to operating systems, networks,
middleware, compilers, tools, modeling, scheduling, QoS support, resource management, testing and debugging,
hardware/software co-design, fault tolerance, security, power and thermal management, embedded platforms, and system
experimentation and deployment experiences.

In addition to the main real-time track, we will continue the successful format of previous years with three specialized tracks:
→ Cyber-physical systems
→ Design and Verification
→ Wireless Sensor Networks

Although authors will choose which tracks to submit papers to, a paper may be redirected to a more appropriate track. All
papers will appear in the main program and proceedings.

Paper Submission Guidelines
Paper submissions should be up to 10 pages, following the
IEEE conference proceedings format, in a PDF document
and must describe original work not previously published
and not concurrently submitted elsewhere. More information
will be posted on the symposium website at www.rtss.org

Important Dates
May 15, 2012 – FRM Submission Deadline
August 1, 2012 – Notification of Acceptance
September 15, 2012 – Camera-ready Deadline
December 4, 2012 – Workshops
December 5 to December 7, 2012 – Symposium

Organizing Committee
General Chair:
Luis Almeida, University of Porto, Portugal

Finance Chair:
Tei-Wei Kuo, Academia Sinica and National Taiwan University, Taiwan

Cyber-Physical Systems Track Chair:
Tarek Abdelzaher, Univ. of Illinois, Urbana-Champaign, USA

Wireless Sensor Networks Track Chair:
Guoliang Xing, Michigan State University, USA

Publicity Chairs:
Ying Lu, University of Nebraska, Lincoln, USA
Paulo Pedrezas, University of Aveiro, Portugal
Zili Shao, Hong Kong Polytechnic University, China

Program Chair:
Chenyang Lu, Washington University, USA

Ex-Officio (TC Chair):
Giorgio Buttazzo, Scuola Superiore Sant’Anna, Italy

Design & Verification Track Chair:
Abhik Roychoudhury, National University Singapore

Work-in-Progress Chair:
Thomas Nohe, Mälardalen University, Sweden

Workshops Chair:
Enrico Bini, Lund University, Sweden
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THE « CALL FOR PAPERS » BY PHD COMICS

Call for Papers!
Xth International Conference on
(Conference/Workshop/Symposium)

(Sub-topic of sub-area of an already narrow field of research)

Description:
________________________ has recently garnered interest as a separate field of
study by the people who do research in it. Latest developments in the field
have the potential to improve the lives of EVERYONE ON EARTH FOREVER.
(Some hyperbole)

This Premier gathering aims to bring together leading experts to
exchange current results and ideas, and drink lots of booze.

The emphasis is on “originality and intellectual rigor”.
(Cut and paste from last year’s call for papers)

Topics include, [but are not limited to]:
(Every possible combination of buzzphrases)

Invited Keynote Speakers!
(List of people whose resumes are disproportionately more exciting
than their speaking ability)

Location! Location! Location!
(Have you always wanted to go to a
beautiful place and spend the whole
time inside a convention center?)

Important Dates!
(Paper submission deadline)
(Actual submission deadline)
(Submission deadline if your advisor is famous)
(hey, whatever, we’re easy! Just please submit something! We beg you!)

Organizing “Committee”
(Senior Professor involved in non only)
(Junior Professors who do all the work and didn’t think being a professor would involve staying up all night burning 200 CD-ROMs)
**ETHICS**

- Cite your sources
- No plagiarism of other papers (even partial)
  - Ideas
  - Text (even for surveys)
- Publish correct and verifiable results
  - Don’t twist the numbers / curves
  - Don’t select the benchmarks that favor your method
  - Put your software on-line
ETHICS

- **No double publications**
  - But you can extend your previous work
    - From Workshop to Conference: detail the main idea, validate the approach
    - From Conference to Journal: enlarge the application scope of your approach, add more experimental results/proofs (20% difference standard)

- **Submit a paper**
  - When in the PC: allowed in many conferences, quotas
  - When the PC chair or in his group/lab: strictly forbidden
OTHER ISSUES

- Authors, order of author names

THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE

The first author
Senior grad student on the project. Made the figures.

The second author
Grad student in the lab that has nothing to do with this project, but was included because he/she hung around the group meetings (usually for the food).

The second-to-last author
Ambitious assistant professor or post-doc who instigated the paper.

The middle authors
Author names nobody really reads. Reserved for undergrads and technical staff.

The last author
The head honcho. Hasn’t even read the paper but, hey, he got the funding, and his famous name will get the paper accepted.

OTHER ISSUES

- Page limits (or buy additional pages)
- Bad tips

Oh no, your paper exceeds the maximum number of pages allowed! What do you do??

TIPS AND TRICKS
FOR KEEPING YOUR PAPER WITHIN THE PAGE LIMIT

Shrink font size to limits of human perception
If a minimum font size is imposed, use a font that is 0.2pt smaller. They won’t notice, will they?

Take out excessive details of your methodology
Let’s face it, nobody really cares (and if they do, why help your competition?)

Border size Rule-of-thumb:
If there is paper exposed, it can be filled (Nature, and other journals, abhors a vacuous submission).
If limit exists, apply 0.2pt rule.

Use Max. Abbrev. in Ref. Sec.
Spelling out the journal names will only make it easy for people to look up your competitors’ papers.

Rewrite entire paper to make it more concise and easier to understand
Yeah right. Prodigious verbiage establishes your superior intelligence. Also, who has the time?

Jorge Cham © 2007
www.phdcomics.com
WRITING A SURVEY: FIRST TIPS

- All above mentioned ingredients except related work and evaluation are mandatory (abstract, introduction, etc.)

- Specifics
  - Comprehensiveness
  - Space is not the main issue (except for BIBL!)
  - Readers are not expert: take care of introduction / terminology
  - Survey ≠ list of summaries
    - Structure is crucial
    - Needs maturation
    - Length of descriptions need not be balanced between works
  - Need for a detailed analysis + comments + opinion
  - The BIBL exercise: opening on your internship topic
WRITING A SURVEY: TIPS FOR EFFICIENT READING

- Objective: efficient reading
  - Read less
  - Read more quickly
  - Retain more

- Topics
  - Selection
  - Organization
  - Acceleration
  - Retention
TIPS FOR EFFICIENT READING: SELECTION

- **Relevance**
  - First papers: trust your supervisor

- **Credibility**
  - Research generates huge amount of publication
  - Select publication places

- **What do I already know? What is new to me? In which order should I read the sections?**
  - Detect publications and sections containing material you already know

- **What needs my in-depth attention?**
  - Related work: always (useful for domain coverage)
  - Evaluation: only if directly related
TIPS FOR EFFICIENT READING: ORGANIZATION

- Somewhere to put it all!
- Create your bibliographic database (bibtex) as soon as possible
- Index your bibliographic database
  - Keywords
  - Summary
TIPS FOR EFFICIENT READING: ACCELERATION

- You’ve told too often to read slowly and carefully: forget it!
  - Have a first glance to evaluate if the paper is worth reading
  - Read carefully only relevant parts

- Decelerators
  - Interruptions
  - Low light and discomfort
  - Fatigue
  - Poor vocabulary or comprehension
  - Reading session too long
TIPS FOR EFFICIENT READING: ACCELERATION

- Why hardcopy wins
  - Ease and flexibility of annotations
  - Ease of navigation
  - Easier viewing of several documents
  - Avoids interruptions (mails, etc.)
  - (but becomes more on more comfortable on digital documents)

- When hardcopy fails
  - Searching in documents
TIPS FOR EFFICIENT READING: RETENTION

- Take notes
  - Key words
  - Paraphrasing
  - Comparison with other work
  - Your critical appraisal
A LITERATURE REVIEW IS …

- … an organized, critical appraisal of published attempts to answer a question
- Not merely a descriptive catalogue

Therefore we have to start by knowing and understanding the question!
UNDERSTANDING THE PURPOSE

- How important is the research question?
- What do we know?
- What don’t we know?
- What has been tried?
- Did it work?
- What has been argued?
- What is left to be done?
- What do I intend to do?
THE FOUNDATION

- The research question
- Scope of the review
- Organization of the review
  - Chronological
  - Thematic
  - Methodological
The phases

Phase 1

Phase 2

Phase 3

Searching
Reading
Writing
## Your feelings along the process

<table>
<thead>
<tr>
<th>Your feeling</th>
<th>Your abilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignorant, overwhelmed and confused</td>
<td>Learning what’s there</td>
</tr>
<tr>
<td>Able to understand the problem and some of the solutions</td>
<td>Beginning selection</td>
</tr>
<tr>
<td>Able to make sound judgments on what you read</td>
<td>Active reading and notes</td>
</tr>
<tr>
<td>Confident that you will compose a well-organized and critical review of the literature</td>
<td>Devising your outline</td>
</tr>
</tbody>
</table>

Getting to stage 4 gets time, … Organize yourself
THE OUTLINE

- Introduction
  - The research question and why it is important
  - Comparison criteria, motivation of the organization
  - Presentation of the outline

- Body of the review
  - Headings according to your chosen method of organization

- Conclusions
  - What are the gaps?
  - Are they worth filling?
  - Who has made the best attempt to fill them?
  - How I intend to fill them?
HOW YOUR REVIEW WILL BE JUDGED

- Did you find all the relevant literature?
- Have you organized your review appropriately?
- Have you understood what you read?
- Have you written a critical appraisal of the material?
- Have you identified, defined and justified the research you intend to do?
- Is the presentation of your review good enough to be understood by an non-expert?
EVALUATION

The evaluation process

Tips to evaluate papers
THE EVALUATION PROCESS

- You are a researcher in a research area
- You contribute to the progress in that area
- You also have to contribute to the judgment of this progress!!
  - Review 3 papers every time you submit one!
  - It is part of your job as a researcher
THE EVALUATION PROCESS

- Principle: peer review
- Committees
  - Journals: editorial boards
  - Conferences/workshops: program committees
- Actors
  - Reviewers, referees

- Focus on conferences in the following
THE EVALUATION PROCESS

- Program chair
  - In charge of the overall evaluation process
  - Sets up the program committee (PC)
  - Assign reviewers to papers
  - Chairs the PC meeting

- PC member
  - Reviews the papers assigned to him/her
  - In selective conferences, if sub-reviewers are used, makes his/her own opinion on the paper and writes the evaluation report

- PC meeting
  - Physical (selective conferences) or virtual (discussion forums)
THE EVALUATION PROCESS: FAIRNESS

Conflicts of interest
- Between author and reviewer
- Same research laboratory, research group, former PhD student/supervisor, family, friend/enemy, work on the same research contract, same nationality, ethnic origins, etc.
- Declared by the reviewer (common) or author (rare), checked and modified if required by the PC chair

In case of conflict of interest of a reviewer with a paper, the reviewer:
- Is not allowed to read the paper
- Is not allowed to review the paper
- Has no access to the reviews for the paper
- Leaves the room when the paper is discussed
THE EVALUATION PROCESS: FAIRNESS

- **Anonymity**
  - Reviewers: always anonymous
  - Authors: anonymous in some conferences
    - Double-Blind submissions
    - The origins of the authors has no impact on acceptance
    - Special care to write anonymous publications

- **Rebuttals**
  - Allows authors to answer to reviewers before the final decision is taken
  - Might help solving some misunderstandings
THE EVALUATION PROCESS: SCHEDULE

- Why does it take 2 to 3 months to get notified of acceptance/rejection?
THE EVALUATION PROCESS: MISC

- What is shepherding? Are the shepherds anonymous?
- How to enter in a PC?
- How to stay in PCs?
THE EVALUATION PROCESS: MISC

- Tracking double submissions
  - Overlap between PCs, discussions between PC chairs
- Tracking reviews when re-submitted to the “next” conference
- Evaluation of the reviewers?
  - Chronically irresponsible, weak, unfair
TIPS FOR PAPER EVALUATION

What makes a paper publishable

- Significant and interesting results
  - New research results, but also
  - Nice state-of-the-art on a given topic (for journals mainly)
- Well presented
- Well evaluated
THE JOB OF A REVIEWER

- How to read a paper? Like an exam that you comment and evaluate ...

- The reviewer has
  - to motivate and explain his evaluation: evaluation report
  - to suggest a decision: accept, reject
Add New Review on RTCSA 2012 Submission 79

You do not see the others’ reviews before entering yours.

PC member and main reviewer

Subreviewer

Mentioned in proceedings

Reviewer’s confidence

(To weight the evaluation)

Overall evaluation

(Used as main criteria)
### Additional scores

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this manuscript a best paper candidate?</td>
<td>2 (yes) 1 (no)</td>
</tr>
<tr>
<td>How relevant is this manuscript to the readers? Please explain your answer in the Public Review above.</td>
<td>3 (yes) 2 (perhaps) 1 (no)</td>
</tr>
<tr>
<td>Is the manuscript technically sound? Please explain your answer in the public review above.</td>
<td>4 (yes) 3 (appears to be - but didn't check completely) 2 (only partially) 1 (no)</td>
</tr>
<tr>
<td>Does the paper make a tangible contribution to the state-of-the-art in its field? Please explain your answer in the public review above.</td>
<td>5 (excellent) 4 (good) 3 (fair) 2 (poor) 1 (very poor)</td>
</tr>
<tr>
<td>How would you rate the overall presentation of the paper? Please explain your answer in the public review above.</td>
<td>5 (excellent) 4 (good) 3 (fair) 2 (poor) 1 (very poor)</td>
</tr>
<tr>
<td>Is the English satisfactory?</td>
<td>2 (yes) 1 (no)</td>
</tr>
</tbody>
</table>
Review. Please provide a detailed review, including justification for your scores. This review will be sent to the authors unless the PC chairs decide not to do so. This field is required unless you have an attachment.

Attachment. If your review is in a non-text format, for example, a PDF file, upload it here:

Confidential remarks for the program committee. If you wish to add any remarks intended only for PC members, please write them below. These remarks will only be seen by the program committee members having access to reviews for this submission. They will not be sent to the authors. This field is optional.
Paper Evaluation Criteria: Suitability to the Conference

- Is the paper in the scope of the conference?
  - Check the Call for Papers
  - Some authors exploit this niche 😞

- Is the type of paper accepted/encouraged?
  - Survey papers? Do not contain new research results
  - Case studies and experimental papers: encouraged in some conferences

- Suggest a better place to submit the paper

- Space limitations
  - If exceeded, rejection without evaluation
Paper Evaluation Criteria: Addressed Problem

- Is the problem solved clearly identified?
- Is it a real problem? an important one? A new one?
  - Nice solutions to non-problems should not be published
- Are the contributions highlighted?
  - This is the job of the authors, not the one of the reviewers
PAPER EVALUATION CRITERIA: CONTRIBUTION

- Originality of contribution
  - Trivial evolution of existing results?
  - Incremental results - LPU
  - New results

- Are the authors aware of the related research?
PAPER EVALUATION CRITERIA: TECHNICAL CORRECTNESS

- Is the proposed approach valid?
  - Are the assumptions explicit?
  - Are they realistic?
  - What is the impact on the results?
- Is the paper technically correct
  - Are the maths correct?
  - Is the simulation methodology correct?
- Does the paper delivers what it claims to?
PAPER EVALUATION CRITERIA:
PRESENTATION

- Is the paper presentation satisfactory
  - English
  - Consistency of notations, assumptions, forward references, structure
**Paper Evaluation: Your Recommendation**

- **Strong accept**
  - Exceptional. New problem or major contribution to an existing problem, solid evaluation
  - Candidate for best paper (1% of papers?)

- **Accept**
  - Solid work, significant contribution, solid evaluation
  - The reviewer will fight for acceptance
  - (10% of papers?)

- **Weak accept**
  - Some weaknesses: incremental? some minor problems in validation/experimentation/presentation
  - The reviewer will not fight for acceptance

- **Borderline**
**Paper Evaluation: Your Recommendation**

- **Tips**
  - Don’t be overly indecisive, take a stand
  - Borderline should not be used
  - Adapt your selectivity to the level of the conference

- **Typical situations (credits: Enrico Bini)**
  - The « beautiful nothing »: Perfectly well written, elegant, technically correct, but no significant contribution
  - *The « ugly something »*: Badly presented, not very elegant, but significant contribution

- **Never accept**
  - Technically incorrect
  - Terrible presentation (cannot be evaluated)
PAPER EVALUATION: ETHICS

- Evaluations are anonymous, and must stay anonymous even after acceptance/rejection
- Discussions during a PC meeting must not be disclosed
- A reviewer is not authorized:
  - to use what he/she has learned in a paper before its publication, ... worse if the paper is interesting and was rejected
  - to disclose the paper to his/her PhD students (except as sub-reviewers)
**Paper Evaluation: Other Issues**

- Meet the review deadline
  - Declining the invitation is better than sending your reviews too late
- Don’t get influenced by the reputation of authors
PAPER EVALUATION: JOURNALS

- Extra recommendations
  - Minor revision
  - Major revision
- Suggestions for a revision have to be precise
- You will probably be asked to check/re-evaluate the revised version (if any)
- The authors will have to explain how they took your remarks into account
ACCESS TO PUBLICATIONS

- IEEE/ACM Digital libraries
  - IEEE explore: http://ieeexplore.ieee.org
  - ACM digital library: http://dl.acm.org
  - Limited to IEEE/ACM publications, not free 😞

- Search engines and repositories
  - Google Scholar: http://scholar.google.fr/
  - Digital Bibliography and Library Project (DBLP): http://www.informatik.uni-trier.de/~ley/db/
  - CiteSeer: http://citeseerx.ist.psu.edu
  - ISI Web of Knowledge
  - Arnetminer, ResearchGate: academic social network
  - May point on the IEEE/ACM digital libraries
ACCESS TO PUBLICATIONS

- Open initiatives
  - On-line free journals
  - Open archives: HAL [http://hal.inria.fr](http://hal.inria.fr)
- Google the title/author works well!
ACCESS TO PUBLICATIONS

- Some tips when starting reading
  - Try to find survey papers: ACM computing surveys
  - Concentrate (in a first step) on major conferences and journals

- The INRIA/IRISA library has access to ACM/IEEE publications! See library presentation
IMPACT AND RANKING

(Disclaimer: the opinions expressed in this chapter are those of the author, and do not reflect in any way those of the author’s employer/lab).
**IMPACT AND RANKING: MOTIVATIONS**

- **Why?**
  - Judge people (applications for researcher/professor positions, tenure, grant attribution, etc.)

- **Number of publications not sufficient**
  - Many conferences / workshops / journals
  - Write-only papers / conferences
  - Need of a fair and reliable metric

- **Means to have impact**
  - Publish
  - Be cited
  - Sufficient?
IMPACT FACTOR

- For journals in the domains of science and social science
  - Impact per journal and per year
  - Average number of citations received per paper published in the journal during the two preceding years

- Evaluation
  - Dependant on domain publication policy
  - Dependant on size of the domain
  - Journals may bias the metric (surveys)
CONFERENCE RANKING

- Evaluation of conferences
- Ranking based on reputation (1/2/3)
  - [http://webdocs.cs.ualberta.ca/~zaiane/htmldocs/ConfRanking.html](http://webdocs.cs.ualberta.ca/~zaiane/htmldocs/ConfRanking.html) and many others
  - Reliable for top-level conferences
- Australian CORE conference ranking
  - A+/A* most selective conference of the domain
  - A selective conference,
  - B
  - C
  - A+/A* Removed after 2010
  - Some domains removed, bias towards Australian conferences?
CONFERENCE RANKING

Acceptance ratio

- Top-level conferences (A+): 5 to 20%
- Good conferences (A): 20 to 33%
- WiP / poster: 95%? (rejected 5% out of scope or unreadable)
INDEX OF SCIENTIFIC RESEARCH IMPACT

- Number of publications
  - Disregards the quality of publications
- Number of citations
  - May give too much importance to a single highly cited publication (survey?)
  - Self citations
INDEX OF SCIENTIFIC RESEARCH IMPACT: H-INDEX

- Aims at evaluating both quality and quantity
- A scientist has index $h$ if $h$ of his/her $N_p$ papers have at least $h$ citations each, and the other $(N_p - h)$ papers have no more than $h$ citations each. [Wikipedia]
INDEX OF SCIENTIFIC RESEARCH IMPACT: H-INDEX

- Use for physicists [Wikipedia]
  - 12: advancement to tenure (associate professor) at major research universities
  - 18: full professorship

- Pros
  - Automatic (tool publish or perish, scholar widget) – objective

- Cons
  - Disregards numbers of authors + placement in authors list
  - Disregards the context of citations (bugs)
  - Dependant on the citation database
  - Never decreases, inappropriate for young researchers
INDEX OF SCIENTIFIC RESEARCH IMPACT: EXTENSIONS OF H-INDEX

- Batista: rescaling per domain and number of authors
- m-index: h-index/number of years
- g-index: h-index for an averaged citation count
- c-index: accounts for the collaboration distance between citing and cited authors
- s-index: non-entropic distribution of citations
- No consensus, ... Too complex?
IMPACT FACTOR BY PhD COMICS

Your (real) Impact Factor

Impact Factor (corrected) =

# times your work is cited - # citations that actually trash your work - # times you cited yourself (nice try) - # times you were cited just to pad the introduction section -

# citations the editor pressured the author to include to increase the journal's impact factor

# original articles you've written + # articles you were included in out of pity or politics + # not-so-original articles you've written copied and pasted

Jorge Cham © 2008
www.phdcomics.com
FURTHER READING

TOWARDS A PHD THESIS, AND BEYOND, ...
Why are you there?
PhD thesis: why?

- Expertise in a scientific domain
- Work in autonomy
- Collaborate with others
- “Long term” research (3 years)
- Funded (student + employee + sometimes teacher)
FROM MASTERS TO PhD THESIS

- Important decision 1: « I want to start a PhD thesis ».

- Important decision 2: « I want to start a PhD in a specific domain ». 
PhD thesis

- Thesis: proposal, idea that one has to defend
- Thesis proposal: leaves room for creativity
- There will always be a part of risk: this is research!
**PhD thesis**

- Many activities
  - Reading
  - Finding the thesis you wish to defend
  - Publish, presenting your results (travel arrangements, etc)
  - Developing software
  - Attending lectures (mandatory) and research presentations
  - Reviewing papers
  - Teaching
  - Attending project meetings
  - Visiting collaborators, finding a post-doc, etc.

- Many sources of distraction, needs organization!
PhD thesis

Your “To Do” List

To Do
- Write to-do list
- Get reimbursed for conference expenses
- Work on thesis

To Do
- Write to-do list
- Get reimbursed for conference expenses
- Work on thesis
- Send slides to professor

To Do
- Grade finals
- Meet with undergrads

To Do
- Write new to-do list
- Work on thesis

www.phdcomics.com
PhD thesis: moderate your ambition
PhD thesis: keep on reading
AFTER THESIS: TEACHING AND RESEARCH

- Teaching
  - 192h / year, plus
  - Organization meetings, laboratory preparation
  - Exams, grading, hiring

- Research
  - Pure research, plus
  - Hiring, supervision, writing, presenting, travelling, fund raising

- Administration
  - Reviewing (papers, projects), hiring committees, PhD and Habilitation committees
AFTER THESIS: TEACHING AND RESEARCH

HOW PROFESSORS SPEND THEIR TIME

How they actually spend their time:
- Teaching: 59%
- Research: 18%
- Service: 23%

How departments expect them to spend their time:
- Teaching: 20%
- Research: 175%
- "Service": 20%

How Professors would like to spend their time:
- Don’t tell me what to do

Source: Higher Education Research Institute Survey (1999)
After thesis: freedom

The Evolution of Intellectual Freedom

Before grad school
Grad student
Assistant professor
Tenured professor
Emeritus professor

WWW.PHDCOMICS.COM
LET’S PRACTICE
The MasterConf 2015 conference
MASTERCONF 2016 conference

- Program Chair
  - Erven Rohou, Isabelle Puaut
  - Or one of you if you volunteer
- Reviewers (+authors?)
  - You
- Local arrangement Chair: None
MASTERCONF 2016 conference

- **Reviewers**
  - You!
  - Name + area(s) of interest

- **Topics: first idea (to be refined)**
  - Software engineering
  - Architecture, systems and networks
  - Data management and imaging

- **Papers**
  - Who wishes to submit something?
  - Else we will select papers for you

- Three reviewers per paper
M A S T E R C O N F 2 0 1 6 C O N F E R E N C E

- PC meeting
  - Decide of the papers to be accepted/rejected/shepherded
  - Best paper award
  - Papers to be submitted to a journal special issue for the conference (1 per track)
MasterConf 2016 Conference

- Agenda of the PC meeting
  - Discussion
  - Interrupts by us when required (to discuss of specific points: COI, etc).
  - Time and space constraints
    - 3 hours max for the PC meeting
    - X papers max for the conference (to be announced later)