How to Write a Paper
… and Get It Published

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Part I: Writing

"Piled Higher and Deeper" by Jorge Cham
www.phdcomics.com
Why should I write?

• Detailed examination of a topic
• Check of one's own understanding of the topic
• Self-discussion and (kind of) validation
• You need to be precise!
Planning

• Start with outlining the story you want to convey
• State a clear research problem and contribution
• Read what others did
• Plan
  – Start early
  – Write every day
  – Set writing goals, priorities
  – Bird by bird
  – Shitty first drafts
• Collaborate
  – Quality assurance
  – Discussions
Reading

- Identify central publications
  - Cited by important authors
  - Number of citations
  - Surveys

- Read in order of publication
- Make notes
- Highlight important statements and references
- Organise them so you can find them
- Google Scholar, ACM Portal, IEEE Explore, ...
- Use a literature management tool
  - e.g. JabRef, BibDesk
read the abstract...
look at the figures...
...and back to surfing the web.
...I did read that paper you gave me... I'll definitely add it to my reference list...

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Structure

- Self-contained
- High cohesion: 1 paper <-> 1 contribution
- Not as standardised as in other disciplines
- Generic structure
  - Introduction
  - Related Work
  - (Background)
  - Specific content
  - Evaluation
  - (Discussion)
  - Related Work
  - Conclusions
Structure: Introduction

- Clear, distinct problem statement
- Why is the problem important?
- Have others noted that problem? -> Cite!
- Clear, few contributions
- Structure
  - Motivation
  - Problem
  - Contribution
  - (Results)
  - (Outline)
- Clearly show structure in the text!
Structure: Related Work

• Essential to know related research
• You never know every paper
• But the most important ones
• Content
  – Do not only summarise others work
  – Clear distinction from own work
• Location
  – Explicit section (or "Related work is cited where appropriate.")
  – After introduction or before conclusions
Structure: Evaluation

• Validation of your contribution
• Depends on problem and contribution
• Types
  – Proof-of-concept
  – Case study
  – Experiment
  – Field study
• Repeatable results (benchmarks, test environment)
• Ideally: web site with tools and data for download
Structure: Conclusions

- Bridge to introduction
- Newly motivate
- Problem statement
- Description how the contribution solves the problem (partly)
- Major results
- Conclusions (can be speculative)
- Future work
The Reader

- The paper explains the research for someone who does not know it.
- Keep background of reader in mind
- Put yourself in the place of the reader
- Ask yourself questions
  - Is this interesting?
  - Is this comprehensible?
  - Is this relevant?
  - What questions the reader might have here?
- Keep your reader interested
Style

- **Consistency**
  - Central thread, leitmotif
  - Use standard terminology

- **Easy to understand**
  - Correct grammar and syntax
  - Choose good, simple words
  - Avoid passive and wordy phrases
  - Describe intuition for equations and formulas
  - Have a lot of examples
  - Use figures for illustration

- **Scientific**
  - Write defensively and factually
  - No storytelling

- **Polish, polish, polish**
Coherence

Goals

Global Coherence

Structure Plan

Text Chunk 1

Text Chunk 2

Text Chunk 3

Local Coherence

Thermal Coherence

Inter-Textual Coherence

Other Texts

Hedges and Boosters

• Use hedges and boosters rarely and with care

• Hedge: „it could seem useful to consider“

• Booster: „and clearly this is an important factor“
Part II: Publishing

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Why should I publish?

• Main task of a researcher
• Extending the scientific knowledge
• Performance record
  – Promotion
  – Grants
• Goals
  – Feedback from the community
  – Discussions on the topic
  – Documentation and archiving of important result
  – Dissemination in the community
  – Substantiation of thesis

Research is not finished until it is published!
Planning

• Already during research
• Where do I publish what?
  – Workshop vs. journal
  – Project report vs. significant, broad study
• Types of results
  – Empirical
  – Methodical
  – Theoretical
• Avoid LPU (least publishable unit)
The Research Results Life Cycle

- Technical Report
- Conference Paper
- Journal Article
- Workshop Paper
- Book / Thesis
- Magazine Article
- Book Chapter
- Doctoral Symposium
- Tutorial
Where to Publish?

- Publisher
  - ACM Press
  - IEEE Computer Society
  - Springer-Verlag (v.a. LNCS)
  - Elsevier
  - Wiley

- Editorial Board/Organiser/Program Committee
  - Well-known scientists
  - Scientists cited by myself
  - If applicable: practitioners
  - Well known authors
  - Low acceptance rate (rule of thumb <30%)
Write-Only Publications

- Never publish at dubious venues
- No rarely read and cited venues
- No unknown publishers
- No publishers without a digital library
- No local venues
- Local venues only
  - if there are interesting participants
  - to become known in a local community
Subjective Selection of Journals and Conferences

• Journals and Magazines
  – IEEE Transactions on Software Engineering (TSE)
  – ACM Transactions on Software Engineering and Methodology (TOSEM)
  – Journal of Systems and Software (JSS)
  – Information and Software Technology (IST)
  – Empirical Software Engineering (EMSE)
  – IEEE Software

• Conference proceedings
  – International Conference on Software Engineering (ICSE)
  – Foundations of Software Engineering (FSE)
  – Empirical Software Engineering and Measurement (ESEM)
  – International Symposium on Software Testing and Analysis (ISSTA)
  – International Conference on Software Maintenance (ICSM)
  – International Conference on Software Testing, Verif., and Valid. (ICST)
Publishing Process: Workshop/Conference

1. Call for Papers (CFP)
2. Submission
3. Distribution to PC Members
4. Reviewing
5. (Virtual) PC Meeting
6. Notification, Review
7. SE-World mailing list
8. Publication
9. Rework, Resubmission
Publishing Process: Journal

- Open Call
- Submission
- Assignment of Reviewers
- Reviewing
- Editor's Decision
- Notification, Reviews
- Publication
- Editor's Decision
- Reviewing
- Rework, Response, Submission
Author List

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Submission

• Usually via web-based submission system (EasyChair, CyberChair, ...)
• Journal paper needs cover letter
• Any author needs to know
• Respect page limits and layout guidelines
• Check editorial board or PC for related work
• Never submit to two venues at the same time!
Page Limits

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?

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Review

• Usage
  – Learn from it and improve
  – Any review has a value
  – Ignore tone of the review

• Questions
  – Where is the paper misleading?
  – Did I ignore important work?
  – Is this the right community?
  – Is the contribution enough for the venue?
  – Where can I extend the contribution?
  – What are my writing strength and weaknesses?

• If you are rejected: Improve and submit again!
Reviewer Comments

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Summary

- As most things you learn writing by writing…
- Important:
  - Clear, substantial, and significant problem statement
  - Clear, distinct contribution
  - Leitmotif
  - Technically and linguistically correct
  - Suitable, high-quality conference/journal
- Do not be discouraged by rejection but learn!

Now go and publish!

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