Publication Strategies

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New Software Engineering Faculty Symposium

ICSE '03, Portland, May 5, 2003

Publish or Perish:
Variations on a Theme

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Motivation

Share principles & experience accumulated as ...

- researcher
- editor-in chief of top journal (TOSEM)
- program (co-)chair (ICSE, ESEC, ...)
- PC member for many years (10 ICSE's, 5 FSE's, 6 ESEC's)
- "teacher" of tech writing course at UCL

Outline

- Publish… why?
- Publish… where?
- Publish… who? for whom?
- Publish… how?
- Publish… what?
- Publish… when?

Publish… why?

- To communicate new findings
  - publication = ultimate result of scientific research
  - *research work is never finished until it is published*
- To let the community know about your work
  - Þ recognition
  - Þ contacts, fruitful collaborations
- To get useful feedback from peers
  - external, independent, frank (anonymous)
- To embellish your CV (+ CV of colleagues)

Publish… where?

- Int'l journal
  - different quality standards, selectiveness & impact
  - research articles, letters, surveys, "comments on", magazine articles
- Int'l conference proceedings
  - different quality standards, selectiveness & impact (e.g. ICSE vs SEKE)
  - research paper, experience report, (poster)

Publish… where? (2)

- Journal vs. proceedings
  - journal …
    - more impact (especially long-term impact)
    - more highly rated by promotion committees
    - (much) deeper reviews
    - more space
    - wider target audience (usually)
    - fast-track special issues
  - proceedings …
    - faster process
    - direct contacts & discussions + community awareness
    - sometimes more selective
    - selection of best papers for journal

Publish... where? (3)

- Journal vs. Conference: not necessarily exclusive
  - expanded version of conference paper can be submitted to journal (with spec of differences)
- Avoid ...
  - poor-quality journals/conferences (e.g. needing papers, lack serious reviewing process)
  - low-impact journals/proceedings

    check impact factor

Publish… where? (4)

- To decide which conference, check
  - "submission topics" of CFP
  - who is in the PC (appropriate reviewers for your topic?)
- For good, selective conferences make sure the ratio

  NumberOfAcceptedPapers / NumberOfSubmissions

  is mentioned in your pub list (usually available from PC chair's foreword in proceedings)

Publish ... who?

- Each author should have contributed in some way
- Order of authors normally ± reflects weight of contribution...
  - in producing results
  - in writing paper
- Every author must be aware of being an author (!!)
- Set of authors shoud be invariant thoughout the review process (to avoid conflict-of-interest problems)
- Advice: in case of doubt/problem, discuss it with authors/colleagues

Publish … for whom?

- For reader (in particular, the reviewer :-) …

  NOT for you !

  ß

- Paper…

  = pedagogical explanation of *results*

  "you and me together"

Publish ... for whom? (2)

- Golden rules
  - identify what the reader's background is
  - imagine yourself as the reader
  - ask yourself questions ...

    is this interesting?
    is this comprehensible here?
    is this relevant?
    what questions are coming to reader's mind?
  - do not speak highly of yourself / your work ...

    leave it to the reader to do that

    (cf. "democratic republic" syndrom)

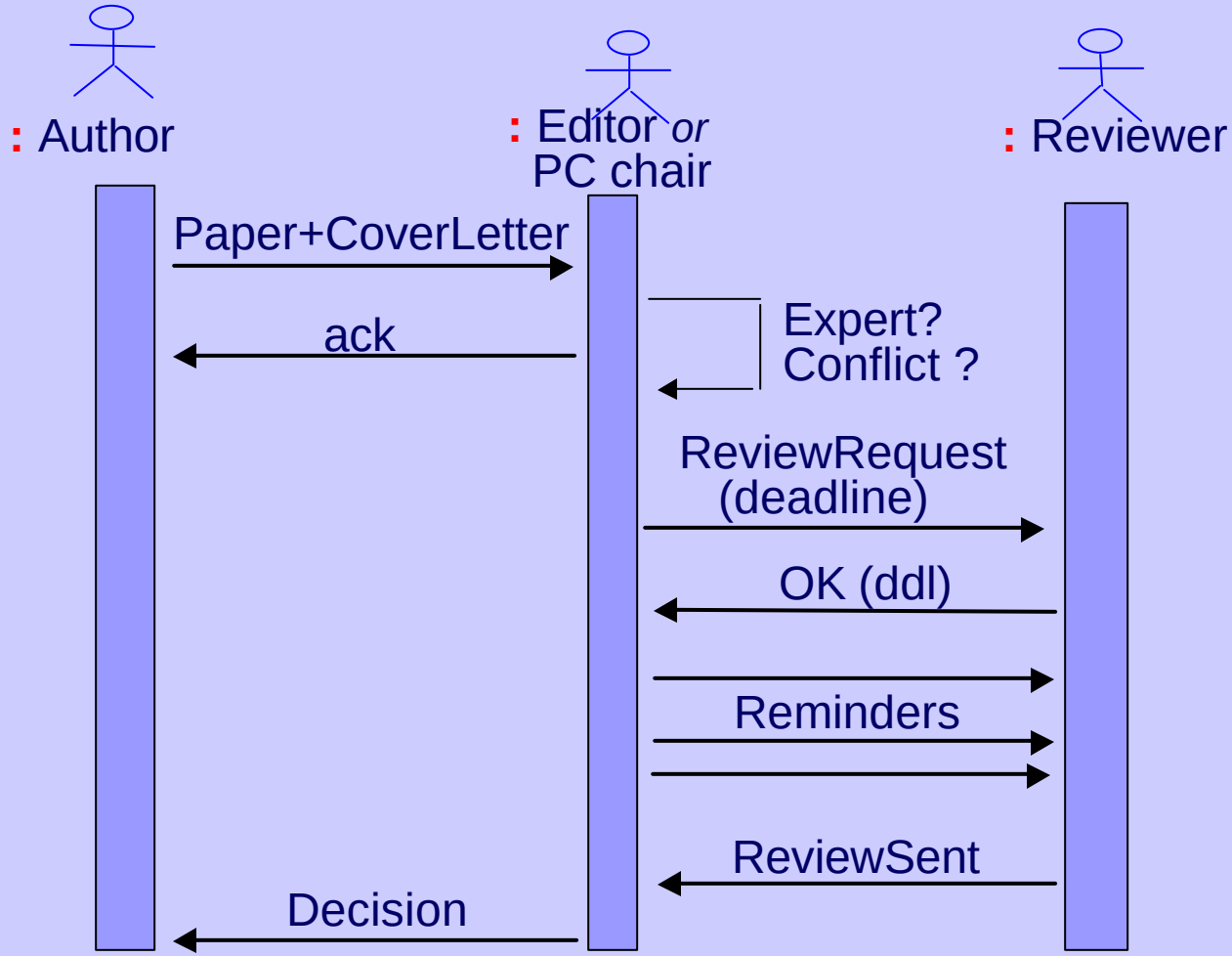
Publish… how?

From your perspective …

- submit + cover letter
  contact info, relation to other papers (if any)
- wait for editorial/PC decision
- study reviews *do not blame reviewers*
- revise accordingly
- resubmit
  + detailed response to reviewers on how revision addresses concerns
- if paper accepted: correct proofs rapidly

Publish… how? - the paper lifecycle

One typical scenario:



repeat
1, 2, 3 times

variant:
editors + EiC

Publish… how? - the paper lifecycle (2)

- Many exception scenarios (e.g., abnormal reviewer behavior)
- 3-4 reviewers (most often disagree)
- Decision: binary for conference; n-ary for journal:
  - accept (never at 1st round)
  - minor revision (most favorable case)
    no second round of reviewing, revision checked by editor
  - major revision (most frequent case)
    new round of reviewing by external reviewers
  - reject = new work to be done to address reviewers' concerns
- Hopefully 1 iteration on major revision, at most 2

Publish… how?

- Don't use reviewers as "debuggers"
- Do NEVER suggest referee names !!
- For journal submission:

  what if… you feel that the process is too slow?
  - ask the editor/EiC for an update BUT do it wisely and NOT too often (e.g., every 3 months)

Publish... how? (2)

- What if... you don't agree with...
  - the editorial/PC decision

    NEVER ask to reconsider unless you have irrefutable evidence of unfair decision

    For journal: you may ask the resubmit a fully revised version of a rejected paper but it's anyway going to be handled as a submission covering new work

  - reviewers comments

    if this may help in your work, ask the editor to forward your (polite) questions to the reviewer --e.g. for clarification of some points she made

Publish... how? (3)

- Corollary:

  As you benefit from a system, you must contribute to it

  ⇒ you should not decline review requests in your area unless very specific/serious reasons

  do reviews as good as those you would like to receive

Publish… what?

- Two types of research contributions:
  - invention of model, method, technique, tool to …
    - develop, structure, restructure, reuse
    - analyze
    - evaluate
    - measure
    - understand …

    software artifact or process
  - experiment-based discovery

    of phenomenon, law, structure, … about software artifact or process

Publish... what? (2)

Evaluation criteria for research papers:

- Original contribution
- Significant... - problem
  - solution
    - + in SE context: useful, scaleable
- Sound results
  - + replicable
- High-quality presentation

Publish... what? (3)

Implications on presentation:

- *to convince reader of originality...*
  - specify objectives & contribution carefully
    [abstract, intro, conclusion]
  - compare with related work carefully
    [paper introduction, special section]
  - implement objectives carefully
    [paper body]

Publish... what? (4)

- *To convince reader of significance ...*
  - discuss *why this problem is significant*

    [abstract, introduction, conclusion]

  - discuss *why your result is significant*

    [introduction, discussion section, conclusion]

    in particular: what it may be useful for,
    why/how it scales up

Publish… what? (5)

- *To convince reader of soundness …*
  - make paper technically readable, verifiable
  - for experiment-based research papers:

    describe the experimental method carefully so that it can be assessed & replayed

    do not mix results (data) & their interpretation

    cf. IMRAD structure of experimental papers (Introduction Method Results And Discussion)

Publish… what? (6)

- *To allow replicability …*
  - provide sufficient technical details (possibly with reference to further details in report available on the web)

Publish... what? (7)

- *to convince reader of good presentation ...*
  - high cohesion: one paper, one result

    don't try to say too much ...

    ... but don't try to say too little

    (cf. LPU problem)
  - self-contained paper

    put anything needed to understand results

    [background section]
  - no "Agatha Christie" sort of writing

Publish... what? (8)

- ***To convince reader of good presentation (cont'd) :***
  - tree-structured presentation (goal-subgoals)
  - clear presentation, good technical style
  - *in particular:*

    - say what you're going to do before doing it

    - avoid mere description of *work* done

      cf. "we-did-this" papers

    - avoid the 7 sins of novice writers:

    omission, inconsistency, inadequacy, ambiguity, uncontrolled redundancy, forward reference, remorse

Check tech writing books/courses

A few typical comment patterns

- "the objectives are unclear"
- "too little beef"
- "the authors seem to ignore ..."
- "... so what?"
- "the paper fails to deliver what is promises"
- "unsubstantiated claims"
- "opinion paper..."
- "premature..."
- "the paper provides little evidence that the results do apply in real settings", "scaleability is questionable", etc
- "evaluation is weak"
- "rambling discusion..."
- [to editor/PC:] "boring", "unexciting", "substance-free"

Submit ... when?

- Not too soon... & not too late
- Not too often (unless you are genious) ?
- Advice:
  - refrain from submitting half-baked ideas --keep them for workshops

(Commonsense) Conclusion

- Publish (& not perish) ...
  - good work
  - in good journals & conferences
  - with good people
  - at good time

  repeated publication of weak papers
  may severely damage your reputation...
- Be a good reviewer
- Good luck, and have fun !

For fruitful bedtime reading

- R.A. Day, *How to Write and Publish a Scientific Paper*. Cambridge University Press, 1989.
- D. Knuth, T. Larrabee, P.M. Roberts, *Mathematical Writing*. Report STAN-CS-88-1193, Department of Computer Science, Stanford University, 1988
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- D. Solow, *How to read and do proofs*, Wiley, 1990.
- M.C. van Leunen, *A Handbook for Scholars*. Knopf, 1978.
- AvL, Tech Writing, Course Notes, UCL