Research Seminar

session 2

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https://www.lri.fr/~anab/teaching/CareerSeminar/

Today   session 2

Homework:
  Research Notebooks
  Best Paper

Practice:
  Reading the literature

Process:
  Writing a review

Homework
Review

Assignment #2: Start a research notebook

Due: today

Create your personal research notebook
Choose paper, electronic or hybrid

Continue for the rest of the semester …
Keep track of what you read
Sketch and record ideas
DATE every entry
Add KEYWORDS to every entry

Upload a new entry every week (see Assignment 1)

Research Notebooks Reminder

READ   References, Abstracts, Keywords
            Quotable quotes … with page numbers

THINK   Ideas, Observations, Problems, Surprises
            Course insights, Research meetings

DO   Details of: Experiments, Analyses, Procedures
            Create: Keywords, Highlights, Index

REREAD   Mark Keywords, Highlight, Question
            Create an index

Always include the date

Homework Review

Assignment #2: Report on a 'best paper'

Due: today

1. Choose a 'best paper' in HCI (at least five years old)

2. Provide the full reference, using ACM format:

    Eric A. Bier, Maureen C. Stone, Ken Pier, William Buxton, and Tony D. DeRose. 1993. Toolglass and magic lenses: the see-through interface. In *Proceedings of the 20th annual conference on Computer graphics and interactive techniques (SIGGRAPH '93).* ACM, New York, NY, USA, 73-80.

3. First skim, then read the paper carefully
    Take notes in your notebook

4. Summarize the paper (factual)
    What is the key contribution?
    What was the impact of the paper?

5. What do you think about the paper? (opinion)
    What surprised you?
    What did you like best?
    What did you not like?

Which papers did you find?

How did you find your paper?

Where was it published?

What kind of paper is it?

Describe it in one sentence

What did you learn?

Which papers did you find?

How did you find your paper?

Where was it published?

What kind of paper is it?

Describe it in one sentence

What did you learn?

} suggest you add these in your notebook
why?

Finding Good Papers to Read

You'll need to read and discuss multiple papers as a student,
   in your career and in your internship

Analyze the literature
   Do NOT make a 'laundry list' of past work !!

Choose relevant references (to your problem):
   Include related problems, not just your specific problem
   Did they try but fail to solve this problem? solve a similar problem?

Critique the articles … but do it carefully
   Remember: You are critiquing your reviewers !
   Avoid 'straw men' and over-generalizations
   Brief description of what they did
   How will you cite this paper in one sentence?

Exercise (optional, not for the class)

Take your favorite paper

Go to google scholar

Look up all the references   - refer to the past

Look up all the citations   - refer to the future
    How many times?   - measure of influence

Class Exercise: Writing Walkthrough

Exercise: Writing Walkthrough

Structured Walkthroughs   (Yourdon, 1979)

Goal: Find bugs in code

Technique: Systematic step-by-step analysis
                 of a document by a small group

Principles: Line-by-line analysis
                 Constructive criticism
                 Limited time

Writing Walkthrough: Roles

Author explains:

> Document state: early draft, almost done?
>
> Publication: audience? deadlines?
>
> Criticism level: structure? style? grammar?

Moderator manages session:

> Timing: 5 min. to read, 15 min. to analyze
>
> Keep comments constructive, avoid debates

Participants (including author!):

> Read through document once
>
> Write comments (on a side paper, a file, on the pdf)
>
> Offer constructive comments out loud

Writing Walkthrough: Procedure

Create a group of authors:
    4 people, 20 minutes each = 1 hour 20 minutes

Preparation:
    Copy selected document parts (max. 1 page)

Procedure per author
    05 min: Everyone reads and annotates text
    15 min: Start with sentence one:
                  proceed line by line: identify problems

Writing Walkthrough: Rules

Constructive criticism:

Be positive

Grammatical errors

Logic errors

"I did not understand this"

Do not debate: it wastes time!

Participants identify problems

and suggest solutions

Authors can accept solutions

… or not!

Writing Walkthrough: Groups

We'll create and assign you to random groups of 4

(20min per document)

First person is the author, second is the moderator.

You read line by line the doc and critique (provide positive comments and/or constructive criticism).

The author takes notes and can improve (or not) the doc based on feedback.

At the end of 20min shift roles (2nd is author, 3rd moderator) and repeat ….

until you have reviewed everyone's work

Writing Walkthrough: Let's go !

Constructive criticism:

    Be positive

    Grammatical errors

    Logic errors

    "I did not understand this"

Do not debate: it wastes time!

    Participants identify problems

       and suggest solutions

    Authors can accept solutions

       … or not!

Procedure per author

05 min: Everyone reads and
    annotates text

15 min: Start with sentence one:
    proceed line by line: identify
    problems

Assignment #2
1. Choose a 'best paper' (at least five years old)

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   Eric A. Bier, Maureen C. Stone, Ken Pier, William Buxton, and Tony D. DeRose. 1993. Toolglass and magic lenses: the see-through interface. In *Proceedings of the 20th annual conference on Computer graphics and interactive techniques (SIGGRAPH '93)*. ACM, New York, NY, USA, 73-80.

3. Summarize the paper (factual)
   What is the key contribution? What was the impact of the paper?

4. What do you think about the paper? (opinion)
   What surprised you? What did you like best? What did you not like?

Publishing Strategy

Hierarchy of Publications

NON-PUBLICATIONS   (but do establish authorship)
    Online archives (arXiv.org, HAL)
    Workshop position papers, invited papers
    Conference short papers, posters, demos
    Company or lab technical reports
***   Books & Book chapters

REFEREED PUBLICATIONS   (in order)
    Long paper in peer-reviewed 'real' conference: French
    Article in peer-reviewed journal: French
    Long paper in peer-reviewed 'real' conference: International
    Article in peer-reviewed journal: International

Order of 'republication': 25% rule

First: Workshop position papers, invited papers
Conference short papers, posters, demos
Company or lab technical reports

Next: Variable length papers (CHI, UIST) or
Conference Long papers
(proceedings of some conferences appear in journals,
IEEE VIS => IEEE TVCG, ACM SIGMOD => SIGMOD RECORD)

Next: French Refereed journals or
International Refereed journals

Last: Book chapter
Book

Hierarchies: Conferences

Specific to each domain:

Value of journals vs. premier conferences

Sometimes conferences are the top venue (CHI, NeurIPS)

Type of journal:

public: ACM, IEEE, some societies

private: Springer, Ehlbaum, Elsevier

Classifications:

A, B, C, D … (e.g., http://portal.core.edu.au/conf-ranks/)

Note: Acceptance rate is a key metric, but <u>not</u> the only one.

The best conferences and journals are 'self-selecting';

authors only send their best work

Hierarchies: Conferences

HCI/VIS conferences
ACM CHI,
ACM UIST (technology), ACM CSCW (collaboration),
ACM ISS (surfaces), ACM Ubicomp
IEEE VIS (visualization, used to be InfoVis, VAST, SciVis),
IEEE VR, IEEE ISMAR (mixed reality)
…

DS conferences
AAAI, IJCAI (artificial intelligence)
NeurIPS, ICML, COLT (machine learning)
ICCV, CVPR (vision, pattern recognition)
VLDB, SIGMOD, KDD, ICDM (data mining)
…

Hierarchies: Journals

HCI/Vis Journals
    TOCHI   ACM/Transactions on Human-Computer Interaction
    TVCG   IEEE Transactions on Visualization & Computer Graphics
    (IJHCS   International Journal of Human-Computer Studies)
    (HCI   Human-Computer Interaction)

British   Interacting with Computers
French   Interaction Personne-Système

Specialist   Pervasive Computing

Hierarchies: Journals

DS Journals
(from an outsider's perspective, there are undoubtedly many more)

> AIJ, JAIR: artificial intelligence
> JMLR, TPAMI: machine learning
> IPL, TKDE, VLDB, KAIS, SIGKDD, CS&DA, IDA: data mining

Review
Process

Research Literature … is not 'literature'

Technical, not literary, writing

Focus on making an argument:
    Introduce a problem
    Identify who else has done related work
    Perform an activity that adds to the field
    Provide a clear, replicable description
    Justify the results

But how are papers accepted for publication?

Review process

Peer-review is the key to our research system
  BUT it is not perfect

YOU SHOULD REVIEW PAPERS !!!
  Imitate the best authors
  (learn what not to do from poor authors)

Essential for learning how to write (and read) research papers

Review process

Submitted to

"Generalist"
(appropriate reviewers)

"Specialist"
(peers)

Journal

Editor in chief

↓

Editors / Editorial Board members

↓

Referees

↓

Conference

Program chair / Paper chair

↓ Subcommittee/Area chairs

Program committee (meta reviewers)

↓

Referees

↓

Recommendations

Assigning papers

Editors or Program Committee* (or meta reviewers, senior PC)
 assign papers to expert reviewers*

Their goal: Find a balance of perspectives
 Expertise in the area?
 Seniority in the field? (not more than 1 PhD student)
 General perspective?
 If multi-disciplinary work, are all relevant disciplines represented?

Review process: Short papers, workshops, etc.

a.   Assigned to reviewers (2-3)
         Sometimes randomly…

b.   Chair evaluates reviews and decides:
     Good reasons:
         This author will contribute to the event
         This research area is interesting
     Ok reasons (!):
         This author is my friend
         We need more people to fill the space

c.   These papers do not 'count' on your CV
         Very useful for meeting people, but not
         considered 'real' publications

Review process: Journal articles

a. Assigned to reviewers (usually 2-3)
     Varied expertise in area (none -> expert)
     Varied experience (Ph.D. students = toughest)

b. Reviews sent to author
     Usually accept with revisions (minor/major) or reject
     A 'conversation' between reviewers and author
          Authors respond with a letter and new paper version
     This cycle may be repeated several times
     Goal is to improve paper

c. If reviewers and editor agree: accept
     Else: reject

d. In our field, journal articles more easily accepted, BUT take longer

Review process: Conference papers

a. Assigned to reviewers
   that rate paper on a scale (often 3, max 5, can have halves)
      Varied expertise in area (none -> expert)
      Varied experience (Ph.D. students = toughest)

b. Reviews returned to meta-reviewer (or program chair)
      Senior person in field, maybe not expert

c. Meta-review evaluated at program committee (live or offline)
      Articles ranked & discussed (conflicts out of room)
      Sometimes additional reviews needed

d. Program committee (as a group) or Program Chair decides
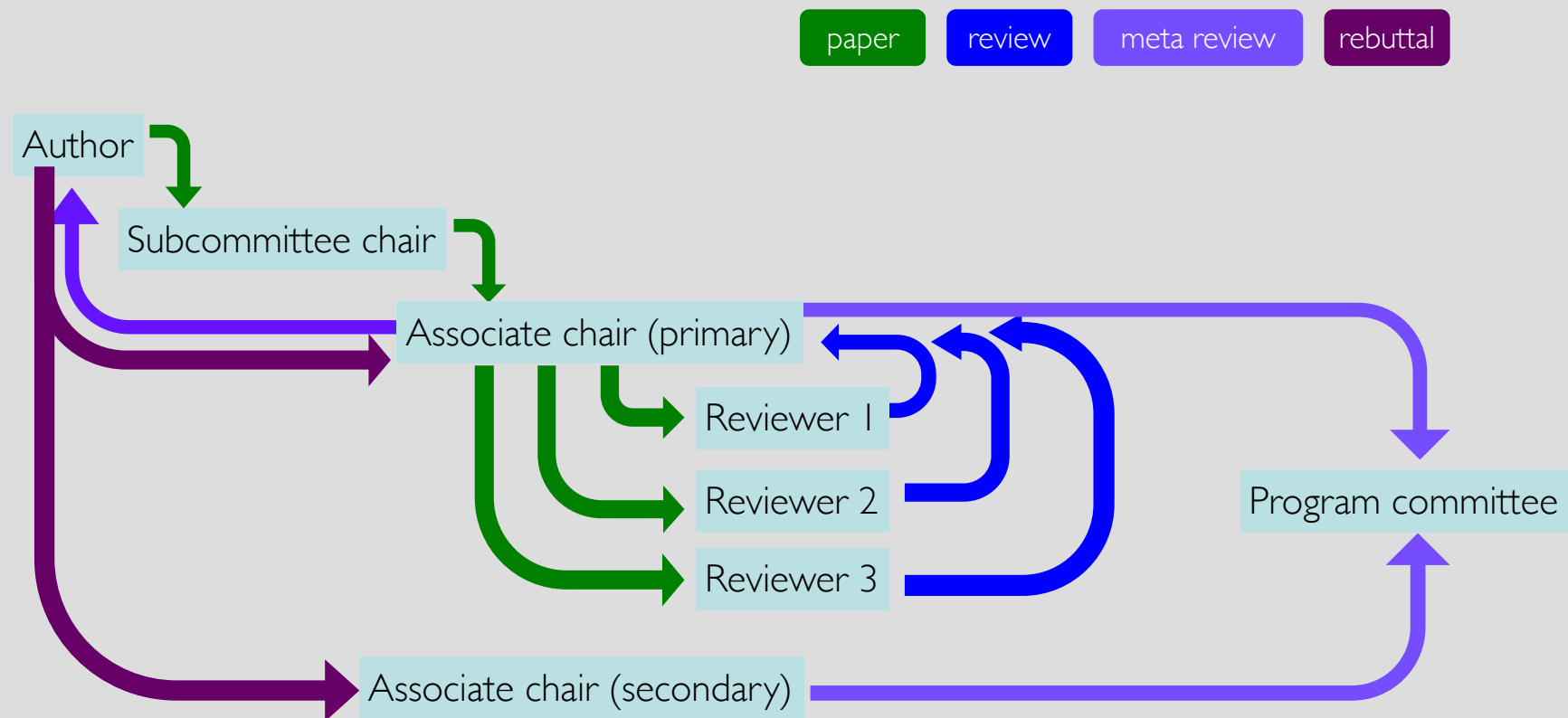   Rates vary: 3+ out of 5 are usually candidates for acceptance

Review process: Conference papers

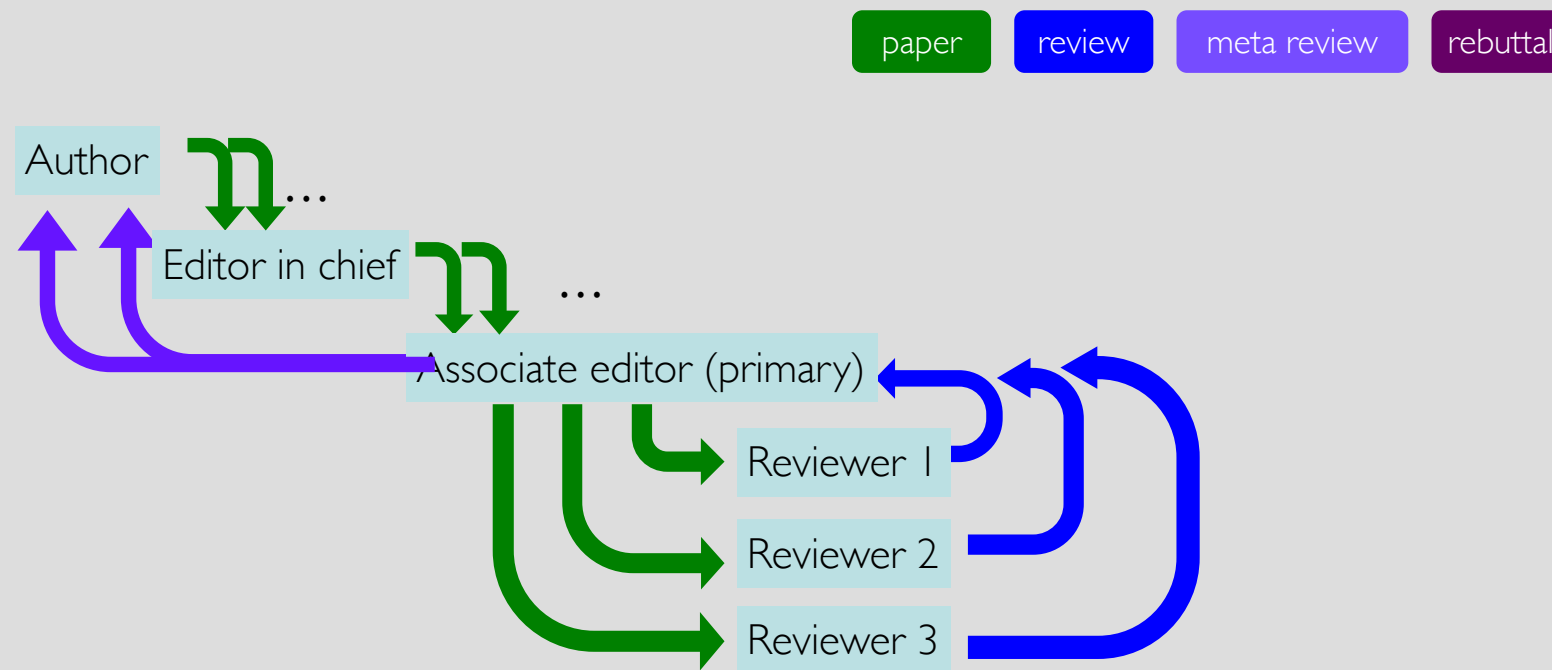In some cases (e.g., CHI, UIST, AAAI) there may be extra steps:

a.　Assigned to reviewers (scale usually 3, max 5, can have halves)

b.　Reviews sent to meta-reviewer

    b.1   Authors get their reviews

    b.2   Authors wright a rebuttal, 1 page where they answer concretely to reviewers' comments and explain how they will improve the paper

c. Meta-review evaluated at program committee

d. Program committee decides accept or reject, or …

    d.1 The committee feels the paper has problems but can be fixed before the camera-ready deadline

    d.2 A committee member volunteers to « shepherd » the paper (i.e., work closely with authors and monitor changes)

(Some conferences like IEEE VIS are published as journals, so instead of a rebuttal they submit revised version)

What happens to a review?

paper | review | meta review | rebuttal

Author
Subcommittee chair
Associate chair (primary)
Reviewer 1
Reviewer 2
Reviewer 3
Program committee
Associate chair (secondary)

What happens to a journal review?

paper | review | meta review | rebuttal

Author

Editor in chief …

Associate editor (primary) …

Reviewer 1

Reviewer 2

Reviewer 3

more a dialogue (reject, revise & resubmit, major revision, minor revision)
… but most journals have constraints on how many times

Who does what?

Paper author	Communicates research contribution
Program committee chair	Finds qualified subcommittee/area chairs
	Ensures process follows ACM rules
Subcommittee/Area chair SC	Finds qualified associate chairs
(editor in chief)	Runs program committee meeting
Primary Associate chair AC	Finds 3 qualified reviewers
(associate editor)	Explains critiques, actions to author
	Communicates with author
	Shepards the paper, if needed
Reviewer	Evaluates paper's contribution
Rebuttal author	Answers associate chair's critiques
(revised version by author)	*Revise paper to address critiques*
Secondary associate chair	Checks fairness, acts as 2° advocate
Program committee	PC Discussion, additional reviews
	Makes final decision (or SC does)

Reviewing for a Conference or Journal

Before you agree to review:

Have you got the resources to do it?

    Time?   Don't take on a review if you do not have enough time

    Expertise?   Be honest about what you can comment on and what you cannot

Do you have a conflict of interest?

    Do you know the authors?

    Are you in a competitive relationship with the authors?

    When in doubt, ask the editor.

    Be prepared to say no (but recommend someone else!)

Review confidentiality

Reviewing requires trust: it is an honor system

Some reviewing processes are anonymous or 'blind'
1. Hide authors and affiliations from reviewers
* 2. Hide all self-references from reviewers

Do not tell others whose papers you have reviewed
(or what rating they got)

Do not report program committee discussions

Conflicts of interest

You may not review papers by your:
    Thesis advisor (and later on your PhD student)
    Close research colleagues
    Members of your own organization

If you have a conflict of interest,
tell the program chair/editor and change papers

Writing a review

Plan to read the paper 3 times
> To get a feel for it
> Read the paper in depth
> Read the paper and annotate it

Fill out the review right after the 3rd reading,
> while things are still fresh in memory

What is a good review?

Your first audience is the program committee
   Either to support the author (accept)
   or argue against (reject)

Short, vague reviews are USELESS
   and will be ignored

Avoid middle ratings (3 out of 5)
   Program committees prefer positive or negative ratings,
   not neutral ones.

Balancing two roles

Critic: Evaluate the article:
          What are the good and bad points
          about this submission?

Coach: Help the author:
          Suggest improvements

Considerations (1) :

Interesting: Well motivated?
Relevant?

Timely: Of current interest?

Succinct: Clear and to the point?

Accessible: Appropriate audience?
Well written?
People do not have the time to read badly written papers

Considerations (2):

Correctness
    Of argument/method/algorithm/proof

Significance
    Valid problem
    Significance to area/journal

Innovation
    Original, novel
    Not trivial extension or combination of old work

What to avoid

Do not
- Begin with negative criticism
- Insult the author (!)
- Give an exhaustive list of every problem
- Give a vague, short or general review
- Attack another style of research

ESRC Workshops for Qualitative Research in Management

ABezerianos - Career Seminar - Lecture 2 - 14 September 2021

Reasons to reject a paper

Automatic reject:

Late

Wrong format

Already published

Plagiarism

Too long

Wrong topic area

More than 25% overlap with another paper submitted or published at same level

NEVER DO THIS!

Reasons to reject a paper

Probable reject:

Writing	Poor English, Poor structure
Claims	Not justified
	Overstated
Missing elements	e.g., Relevant References
Key error	e.g., Misanalysis
Originality	Incremental
Quality	Sloppy, errors

How I review a paper

Title & Abstract:	Is claim clear? Do I believe it?
Introduction:	Understand problem space?
Conclusion:	Linked to intro/abstract?
References:	High quality? Right quantity?
	Long papers, not just workshops/URLs, /books,
	Not too many self-references
Lit Review:	Anyone missing? Critiques?
Body:	Sound work? Clear?
Conclusion (again):	Claims justified by work?

Ethical considerations:

Objectivity:	Judge the paper as written Be aware of your own biases
Fairness:	Perspectives differ Judge from their school …
Speed:	Spend enough time for a fair review
Professional:	Keep critiques specific, not vague Consider both author and journal/conf.
Confidential:	Do not circulate papers Do not use without permission
Conflicts of interest:	Discuss if necessary

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Ethics of refereeing

Objectivity

    Judge paper on its own merits

    Remove prejudice

    If you are not able to review it, return it

Fairness

    Author may have different point of view/methodology/arguments

    Judge from their school of thought not yours

Speed

    Be fast, but do not rush. Author deserves a fair hearing

Ethics of refereeing

Professional treatment
>   Act in the best interest of the author and conference/journal
>   Specific rather than vague criticism

Confidentiality
>   Cannot circulate paper
>   Cannot use without permission

Conflict of interest
>   Discuss with editor/meta reviewer/program committee

Ethics of refereeing

Honesty
   About your expertise and confidence in appraisal

Courtesy
   Constructive criticism
   Non-inflammatory language
   Suggest improvements

Reviewing the reviewer

Editors or Meta-Reviewers also review their reviewers:

Do they re-explain the main point(s) of the paper?

Are the criticisms specific?

Do they contribute additional references if that is a complaint?

Do they articulate the contribution of the paper and related it to past work?

Do they state what the value of the contribution is to an attendee of the conference or reader of the proceedings?

Do they have some clear ideas about how the paper can be improved or extended to increase its value?

Review
Forms

Review form

Forms might look quite different
but basically ask the same things

Poorly designed ones just have yes/no answers,
good ones prompt the referee to elaborate

Make sure you read and understand it well

a Review: General comments

Usually starts with 1-3 sentences summarizing the paper to show that you understood it

Consider the author's assumptions, motivations, technical approach, analysis, results, conclusions, references

Be constructive, suggest improvements

a Review: Specific comments

Comments on style, figure, grammar, spelling mistakes, etc.

You can mark the paper directly (for some journals)
  or list items on the form
      with reference to the page, section, etc.

Decide the level of detail of your specific comments
  but do not rewrite the paper!

Confidential note

Comments to the editor that are not intended for the author

Not required:
 Try to give the author as much feedback as possible

Sample review forms

Conference X   Very quantitative

Conference Y   Mix quantitative & qualitative

Conference Z   Omits neutral option

Review form X:

5 quantitative questions:
Appropriateness:
Originality:
Technical strength:
Presentation:
Overall:

1 qualitative question:
Comments

5 possible ratings:
5	Strong accept
4	Weak accept
3	Undecided
2	Weak reject
1	Strong reject

Review form Y:

2 quantitative questions:

Overall rating: Possible ratings:

Overall rating: 1, 2, 3, 4, 5

Reviewer expertise: 1, 2, 3, 4, 5

6 qualitative questions:

Contribution to the field?

Review

Areas for improvement

Additional comments

Additional comments for the program committee (hidden)

Other expertise comments (hidden)

Review form Z:

3 quantitative questions: Possible ratings:

     Confidence in review: 0, 1, 2

     Best paper award?:   yes, probably, doubtful, no

     Accept paper?:   yes, probably, doubtful, no

4 qualitative questions:

     Why should we accept this paper?

     Is the paper well written?

     Additional comments for authors

     Additional comments for the program committee

Review
Examples

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Negative: Summary

Confidence 3/3 (lots)
Accept?   1/3 (reject)

The paper describes XXX, which examines personal calendars for the likelihood that someone will attend a particular meeting and makes this information available to selected colleagues. This is potentially useful idea, but not a major contribution.

Negative: Scaling problem

The authors' stated goal is to solve a problem that arises in large corporate settings, i.e. that people cannot reliably interpret each other's on-line calendars when scheduling time to see each other.

Unfortunately, this system has been created for and tested by a small set of researchers at the authors' university and it is not clear that the system scales well.

Negative: Poor justification

The authors describe the different types of errors they found
when predicting event attendance in their lab, but do not
identify the consequences of these errors.

The paper does not show that their system is in fact better than
simply guessing, when the user looks at their colleagues on-
line calendars themselves.

They authors do not demonstrate that their system is actually
useful.

Negative: Missing element

It is not clear how to verify that someone has actually attended a particular meeting.

For example, most people do not mark their calendars to indicate that they missed a meeting. This makes it difficult to verify (or improve) the accuracy of the system.

Negative: Specific suggestion

Using bright red to indicate that someone is not likely to attend a meeting seems overly strong, since it usually warns of a serious problem. Consider testing other colors or highlighting methods with users.

Negative: Questioning claims

The **author paper** claims that the calendar could support 25 people (based on the graphics used), but does not discuss how the system would work with overlapping workgroups in a large organization.

For example, can person A track B, C, D, & E, while person B tracks A, E, F & G? What are the consequences for one-way tracking? What about people who have to track many people, such as secretaries?

Negative: Summary

Confidence   3/3 (lots)
Accept?   2/5 (reject)

The basic concept, to provide an interactive tool for creating
    task models, is reasonable given the interest in creating task
    models and the cumbersome nature of creating them by
    hand. However, the actual system is very limited, both in
    terms of its user interface and in its approach to managing an
    interactive data hierarchy.

Negative: Contribution

The authors describe their main contribution as providing support for an interactive analysis of the model once it has been created and the corresponding ability to compare task models. Yet the description of those comparisons is very vague and abstract. I would have liked to see at least one example of a comparison.

Negative: Writing

The writing is reasonably clear although the grammar should be checked and the paper should be copy edited. The introduction and related work sections are redundant. The paper would have been easier to follow if the authors had introduced a scenario that explained how a developer actually uses the XXX tool. The figures are too small to read and the captions for figures 3 and 4 appear to be reversed.

Negative: Missing reference

The authors do not cite fundamental work by XXX (conference'02) nor do they mention related work by YYY (conference'04) and ZZZ (conference'05).

Negative: Comment to authors

Please explain how this system is built and how it is used. The paper does not provide enough information for an experienced practitioner to duplicate this work.

Negative: Comment to committee

I do not believe that paper is appropriate for conference'07. It offers very little in terms of description or images to show the system in action and we cannot evaluate whether or not the system does what it claims to do, nor how well.

Positive: Summary

Confidence   3/3 (lots)
Accept?   3/3 (Yes)

This paper presents an innovative approach to augmenting email systems, which have evolved into complex work management tools. The XXX system provides users with YYYY functionality. Because it works with existing email systems, users gain added functionality without being forced to switch email systems.

Reviewer position/recommendation could be stronger

Positive: Justification

The authors discuss the different possible technical strategies for augmenting email systems, and explain why they have chosen to change how email is exchanged (the email transition system), rather than the endpoints of the communication system.

The advantage of this approach is that it accommodates changes in transmission protocols and enables users to maintain a secure system.

Positive: Suggestion

The security issues in such a system are complex. The authors have considered some of the issues in this implementation, but would clearly need to provide a greater level of security if this were implemented as a commercial system.

Positive: Good justification

Overall, the paper provides a useful addition to an area that is extremely important to users but has been neglected by the research community, i.e. improving email systems.

The paper is well written and provides enough detail that an experienced practitioner could duplicate the results.

Positive: Writing quality

The paper is well written and easy to follow.

I would have liked to see an example of what the users actually see and do when sending and receiving messages.

The authors have tried variations of several approaches in their user tests. I would like to see the final choice that was tested over several months.

Positive: Structure

I liked the approach of providing a list of possible applications at the beginning of the paper, to motivate the work, and ending with a set of worked-out solutions based on these applications, at the end of the paper. However, I think the related work section belongs earlier in the paper and should be expanded to include a brief discussion of the work mentioned below.

Homework Assignment

Assignment #3: Review a paper

Review the paper as if you are a reviewer assigned by the the program committee or editor

This means:
    You DO know where it was submitted
    You DO NOT know who the authors are
    You DO NOT know the impact the paper will have in the future

You must summarize the paper
    BUT ALSO give your opinion

Assignment #3: Write a paper review

Due: **23 Sep** (23:59)

1. Reread the paper from Assignment #1
   or <u>better</u>: choose a new article (but not literature reviews)
2. Read the paper and take notes in your notebook
3. Fill out the review form
   https://www.lri.fr/~anab/teaching/CareerSeminar/
4. Upload your assignment in ecampus
   (or email if you do not have an account
   carreer.seminar@gmail.com)
   name your file **LASTNAME_Firstname-A3-Review.pdf**
5. Also bring your pdf in class to share with your colleagues,
   ideally put it in the shared folder https://drive.google.com/drive/folders/1OWkkhHrr5QHLvpuBw6X1H9SXFHGB3Dyc?usp=sharing

Assignment #3: Review form (available online)

1. Rank the paper:
   - [   ]   Overall rating   (1=poor, 5=excellent)
   - [   ]   Reviewer expertise   (1= no knowledge, 5=expert)

2. Summarize the contribution to the field (1-2 sentences)
3. Provide a detailed review (2-5 paragraphs)
4. Indicate specific suggestions for improvement
5. Include the ACM-style paper reference:

   Eric A. Bier, Maureen C. Stone, Ken Pier, William Buxton, and Tony D. DeRose. 1993. Toolglass and magic lenses: the see-through interface. In Proceedings of the 20th annual conference on Computer graphics and interactive techniques (SIGGRAPH '93). ACM, New York, NY, USA, 73-80.