

# **HOW TO REVIEW A PAPER?**

# Reading vs. Reviewing

## Reading

- Information gathering, typically for the benefit of your own research  
(You are a scientist.)

## Reviewing

- Goal is to
  1. Determine a paper's suitability for some conference
  2. Provide feedback to authors to improve paper  
(You are a teacher/evaluator.)

# A review form

- Confidence of the reviewer
  - Multiple choice
  - What is your qualification for reviewing the paper?
- Evaluation
  - Accept, weak accept, can't decide, weak reject, reject
- Summary of the paper
  - Your summary of the paper and its main contributions
- Strengths
- Weaknesses
- Detailed comments
  - Comments to back-up your rating and help authors improve paper
- Confidential comments for the committee

# The Best Reviewers Are Able to Provide One Bit of Information

- Should the paper be accepted or rejected?
- Always arguing to accept or reject papers doesn't provide useful information
  - A middle-of-the-road approach is necessary

# Main Question

- **Does the paper make a significant contribution to the field?**
- Are the results **surprising?**
- Would the paper spark **new research?**
- Are the ideas **clearly expressed?**

# First Step: Read and Re-Read

- Read the paper once to get the main ideas and contributions
  - Try to make the “one bit” decision here
- Read again and take notes (for your review)
- Start to organize a review...

# Evaluation Method

- Motivation and Conclusions
  - Is the problem important?
  - Will a solution advance the state of the art?
  - Is there a single important intellectual contribution?
- Support
  - Are the results sound, and does the evaluation support the conclusion?
- Learning
  - Did you learn anything? Was it worth learning?
  - Will the paper generate discussion?

# Consider the Audience

- Will this generate discussion?
- Is this a paper that's going to send people to the hallway?
- Will the people who commonly read these proceedings benefit from the contributions?
  - Would people who read *other* proceedings benefit more from the paper?

# Consider the Standards

- Workshops are typically more permissive as far as accepting “vision” without completed, supported work
  - More emphasis on “fostering discussion”
- Conference: Depends on quality of papers in the reviewers’ piles and selectivity
- Journals often have the highest standards, especially since the review process is iterative

# Consider the Purpose

- Survey
  - Is the overview complete?
- Tutorial
  - Is the description correct and clearly described?
- Proposal
  - Does the research agenda that is advocated make sense? Is it worthwhile?

# How to Write the Review Itself

- **Start with a summary**
  - Demonstrates to the authors (and to you!) that you understand the main point of the paper
- Discuss how authors do or do not deliver on the claims/contributions of paper
- Discuss positive aspects (if any)...try to find something
- Provide high-level suggestions for improvement
- End with nits (spelling, punctuation, etc.)

# General Tips on Tone and Content

- Be polite and respectful
- Provide suggestions for how to improve the paper
  - You may see the paper again!
  - If the paper is accepted, the flaws should be fixed
- Be positive
- The point is *not* to shoot the paper down

# Common Mistake: Being Too Critical

- Don't miss forest for the trees!
  - Papers are never perfect
  - Your job is to determine whether a paper's flaws invalidate the contributions (and whether the contributions are significant)
- Being too critical can prevent important research results from being published

# Other mistakes and no-nos

- Insulting the authors
  - Criticize the paper, not the authors
  - “The paper did not address...”
- Revealing your own research agenda
- Distributing submitted papers
- Spending too much time reviewing a paper
  - Rule of thumb: Don’t spend more time reviewing a paper than the authors did writing it!
  - If a paper is sloppy or flawed, don’t waste your time
- ...

# Exercise:

## Conference Program Committee

- Bid for submitted papers
- For the paper you are assigned
- Write a review with the following fields
  - Summary
  - Strengths
  - Weaknesses
  - Detailed comments

# Recommended reading

- S. Keshav, “How to read a paper”, *ACM Computer Communication Review*, July 2007.
  - <http://blizzard.cs.uwaterloo.ca/keshav/home/Papers/data/07/paper-reading.pdf>
- T. Roscoe, “Writing reviews for systems conferences”, March 2007.
  - <http://www.inf.ethz.ch/personal/troscoe/pubs/review-writing.pdf>