

# How to Read and Critique Technical Papers

# Why do we read papers?

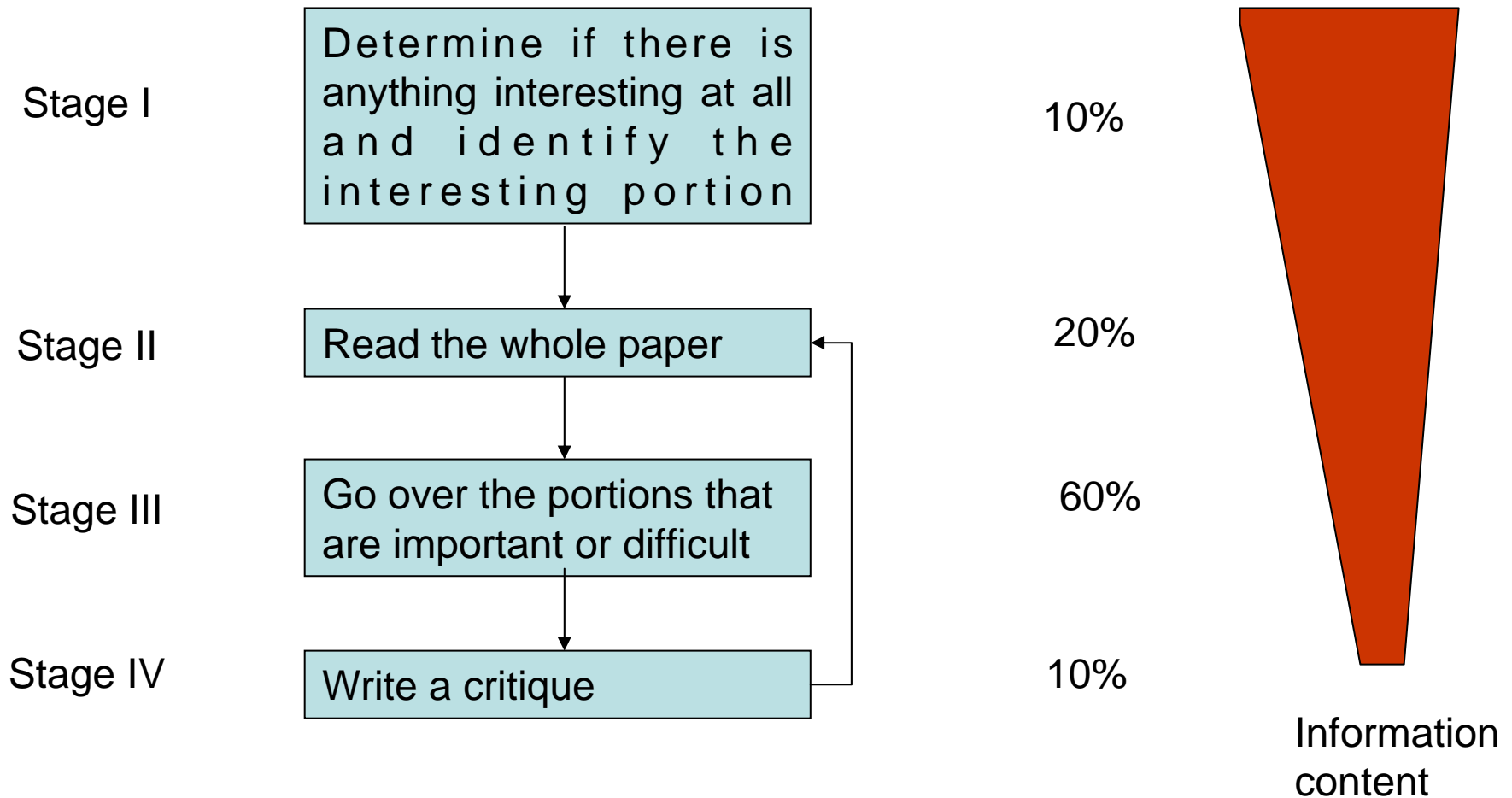
- Your instructors/advisors ask you to
- You are trying to pick up some cool new techniques not available in textbooks
- You are surveying an area of research
- You are reading papers loosely related to your field and try to identify new research problems

# What papers to read?

- Your instructors/advisors ask you to
- You are trying to pick up some cool new techniques not available in textbooks
- You are surveying an area of research
  - Start with a survey paper or some well-cited papers  
→ their references
- You are reading papers loosely related to your field and try to identify new research problems
  - Top conferences/journals/authors always a good starting point

# How to read papers

- 4 phases to reading



# Stage I

- What is interesting?
  - Ideally the abstract should tell you this, but frequently it does not.
  - Need to jump about
    - Read conclusion
    - Read introduction
    - Look at the bibliography
    - Glance at the TOC (if any)

# Stage II

- Read with the following questions in mind
  - How can I use this stuff?
  - Does this really do what the author claims to do?
  - What if the assumptions and choices that the author made are discarded (or made invalid)?

# Stage III

- Understand what is proposed in more details
  - Architecture
  - Algorithm
  - Mechanism
  - Methodology
- Understand how the proposed idea is evaluated

# Stage IV Critiques

- Short summary of the paper
  - What problems does it address and how?
- Evaluation of the significance of its technical contribution
  - What is new?
    - New problem, new methodology to an established problem, marginal improvement to existing solutions
  - How well does it work?
    - Are assumptions made valid?
    - Is the evaluation adequate?
    - Does the evaluation support the conclusion drawn?
    - How does it compare to competing solutions?
    - What new insights can be gained?
- Suggestions on aspects that can be improved
  - Support your arguments!



- What is not
  - Lengthy copy & paste of parts of the paper

**\*Familiarity:** Rate your familiarity with the topic of the paper.

- Expert
- Familiar
- Some knowledge
- Novice

**\*Recommendation:** Your overall rating.

- Definite accept (top 10%, excellent paper)
- Likely accept (top 20% but not top 10%, significant contribution)
- Accept if room (top 30% but not top 20%, borderline for Networking)
- Likely Reject (top 50% but not in top 30%, needs more work)
- Definite Reject (bottom 50%, not up to Networking standard)

**\*Contributions:** What are the major issues addressed in the paper? Do you consider them important? Comment on the degree of novelty, creativity, impact, and technical depth in the paper.

**\*Strengths:** What are the major reasons to accept the paper? [Be brief.]

**\*Weaknesses: What are the most important reasons NOT to accept the paper? [Be brief.]**

**\*Detailed Comments: Please provide detailed comments that will be helpful to the TPC for assessing the paper. Also provide feedback to the authors.**

**TPC comments: Write any comments for TPC members only. The authors will not see these comments.**