Reading, Analyzing, and Presenting Scientific Papers (in DADS and beyond)

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Classifying the type of contribution

- Elegant formalization of a new problem that captures the reality
- New or improved solution to an important and interesting problem
- New generic technique (for analysis, solution, or evaluation)
- New analysis
- Better evaluation
- Survey

Other important questions to consider

- Target application domain
  - What makes the work so suitable for this type of applications?
  - How general or easy to extend?
- Is the solution practical?
  - Example: the solution requires system engineer to define an exponential number of...
- Is the evaluation comprehensive and adequate?
  - Example: dependable system in failure-free settings or adaptive system with most parameters fixed

And yet other important questions to consider

- What is the motivation for this work?
  - The authors certainly claim that it is important. What makes you believe it?
- Does the contribution and results correspond to the motivation? Do all pieces fit together?
- Where did the work fall short of your wild imagination? What extension would you like to see the most?
- Asking questions is always an option
  - Teachers, supervisors, colleagues
  - Even if you do a presentation alone

Guidelines for student presentations

- Present authors' claim regarding the work
  - The problem studied
  - The Contributions of the Paper.
  - Relation to the Literature (SotA)
  - Definitions, Requirements, Design, Algorithms, Implementations, Experiments, Evaluation, Etc. (depending on type of contribution and research method)
  - Main Results
  - Conclusions
  - http://www.stanford.edu/~jacksonm/present.pdf
- Criticism
  - Asking and concluding on the important questions
  - Guidelines: The Task of the Referee, Alan J Smith, UCB
- Questions and discussion
- Summary and conclusion of criticism

You will be better off skipping

- Formal parts (unless it is a work on new proof techniques or formal methods)
  - Formal notation and definitions
    - Important for written papers
    - Replace with intuition and examples in oral presentations
  - Theorem proofs and mathematical derivations
    - Focus on the result and intuition behind the proof instead
- Lengthy lists of related work
  - Present categories and perhaps one representative for each
- Fine-grain implementation details
  - Present the central part or implementation idea; skip optimizations
  - If there is 1 page of pseudocode, present a few central lines or an overview in your own words
- Overly detailed architectural schemes with dozens of entities and arrows, and annotations in a tiny font