



## How to do a good paper presentation

- Roughly follow the flow of the paper
  - It is probably there for a reason
- Summary each paragraph with 1 or more slides
- Utilize graphics and tables
- Emphasize the main idea and motivation
- Highlight the result and and lesson learned
- Out-of-the-paper research
  - Google for author's homepage
  - Through California Digital Library

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## Individual Projects

- 45% of the Grade
- Projects are done individually
- Propose your own!
  - Related to your Ph.D., M.S., or B.S. senior project work...
  - Content should fall somewhere in the broad confine of the course
  - Talk to me NOW!
- Depth
  - +1 more quarter of independent study
    - Or same project in CS220 (SPR04)!
  - Submission to a workshop
    - Or a chapter in your thesis!

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## Potential Projects

- Eblock projects
  - Extending eBlock Java Simulator
    - save configuration
    - adding environment stimuli
    - compute power/delay/state
  - Programmable eBlock
    - Start with programming language (LEGO?), reduce the number of eBlocks needed.
    - Study the impact of programmable eblocks on the necessary set of library, the protocol, and the delay/power characteristics.
  - Protocol Exploration for eBlock systems
    - packet length, transmission frequency, error detection
    - power/delay

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## Potential Projects

- Metropolis projects
  - Abstraction/Refinement operator in Metropolis
    - Assigned to Xi Chen
  - Abstraction/Refinement case study for simulation checking
    - Through PIP simulation checking, find a safe method for abstraction to reduce simulation time needed, given a set of properties
  - Formally Verifying Metropolis Design using SMART
    - MMM->PN->SMART for property verification.
    - Compare efficiency with SPIN path.
    - Show usefulness for stochastic architecture verification.

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## Potential Projects

- Logic of Constraints projects
  - A Practical Language for LOC
    - Design a reasonable language (and compiler) for using LOC as off-line trace checker and on-line simulation monitor
    - Inspire by popular PSL (with underlying logic of LTL)
  - Integrating LOC Checker into PSL Framework
    - C++ code to allow PSL for trace checking (vs. monitoring)
    - Integrate LOC as a special object in PSL
    - Generate complete/combined trace checker

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## Projects presentations

- Finalized assignment
  - 1/15
- Progress presentations
  - 1/27-29
- First Report
  - 2/3
- Second Report
  - 2/24
- Final presentations & report
  - 3/9-11 (in class)

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## Project Meetings

- Weekly
- 1-to-1
- 30 minutes
- Show me what you have done...
- Starting next week
  - More information over the weekend...



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## Simple rules for good project presentation

- Have at least one major message per slide
  - Meaningful slide title
- An outline slides may be a good idea for 20+ slides presentation
- Emphasize primary idea
  - Give a “flavor” of the detail, not all the details
    - Only to support the main idea
  - Start with “high level”, then go down
- Make backup slides
  - For related work
  - For things that may be too detail



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## Other “technical” pointers

- No more than ~12 lines of text
- Avoid long sentence, use bullets
  - Having grammatically correct long sentence written down tend to encourage reading the slides by both the presenter and the audience, which will distract from the actual presentation.
  - In principle, avoid multiple-line “bullets”
- Graphics and animation are good
  - Gratuitous graphics and animation are not
  - Google for them, or get clip arts (microsoft...)



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## Acknowledgement

- Be generous, acknowledge
  - All authors
  - All direct quotes
  - All copied graphics
  - All “borrowed” slides
  - All “inspired” ideas
- Does not take away from your accomplishment
  - Better to be good, than to be original
  - Avoid suspicion of plagiarism
- Large portion of the following slides are inspired by Faloutsos



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## Suggestion for structure of a 30 minutes talk

- |   |            |
|---|------------|
| • Title                                     | 1 slide    |
| • Problem addressed                         | 1-2 slide  |
| • The solution/contribution                 | 1-3 slide  |
| • Motivation/Importance                     | 1-3 slide  |
| • Procedure                                 | 1-3 slide  |
| • Background/Model/Definition/Previous work | 2-5 slides |
| • Your innovation and contribution          | 3-5 slides |
| – Higher level idea first                   |            |
| – Some example of detail                    |            |
| • Results (experimental or otherwise)       | 3-5 slides |
| • Conclusion and summary                    | 1 slide    |
| • Future Directions                         | 1 slide    |



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## Simple rule for writing papers

- Recursive
  - The title should summarize the paper
  - The section title should “summarize” the section
  - In every section, first paragraph should summarize the section
    - For short section, the first part of the first paragraph
  - In every paragraph, first sentence should summarize the paragraph



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## Simple rule for paper writing

- Always have a good story to tell
  - Explain to your mom in 60 seconds
  - Make sure the story is crystal clear
    - Then expand the story...
- Always give the goods first
  - Don't hide it from the reader
  - Don't leave it till the end

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## Structure of an 8-page paper/report

- Abstract ~1 paragraph
- Introduction ~1 page
- Background/Model ~1 page
- Our idea ~0.5 page
- Procedure ~2 pages
- (Experimental) Result ~2 pages
- Discussion ~0.5 page
- Conclusion ~0.5 page
- Bibliography ~0.5 page

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## Abstract

- 200-300 words
- Executive summary
- Attract attention
- Give your colleagues a reason to keep reading
- Possible breakdown
  - 2 lines: goals
  - 2 lines: motivation and importance
  - 2 lines: how the work is done
  - 2 lines: result and contribution
    - Hopefully with number (I.e. 50% faster!!!)

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## Introduction

- What is
  - the problem (high level)
  - motivation
  - importance
  - main contribution
- What is the work (briefly)
- How is the work place among related work (briefly)
- List of result and contribution (briefly)
- In the next section, we... In section 3, ...
- Important!!!
  - Most reviewers made up their minds by this time!!!

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## Background

- Definition and models required
- Previous work
  - Provide only enough detail to compare to your work
    - Hopefully not better or the same as your work
  - What don't they do?
    - Not just a few dirty words about it...
- Assumption and limitation of your work
  - Be honest
    - you can't fool all the people all the time
- Introduction + Background
  - Should be less than 25%
- Otherwise, you are being too detail about other's work
  - Summarize and put down pointers and references

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## Our Idea

- What's new
- New Definition
- New points
- New clarification
- May be last paragraph of Background, or first paragraph of Procedure

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## Procedure

- What did you do?
- It may contain
  - Methodology
  - Algorithm
  - Design procedure
    - If it is a case study
  - Code ideas
    - Pseudo code, if necessary
  - Problems encountered, and how you solve them...
  - Proofs
    - Outline only, if necessary
  - More definition
    - And how you decide on such a definition
- For code/proof/algorithm/methodology/definition
  - Always give intuition on how and why first...

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## Experimental Result

- Overview of the experiment
  - What are we measuring and why
    - The design
    - The parameter
    - The environment
- Use different section if there are
  - More than one experiment (design/parameter/environment)
  - More than one things learned from the experiment
- IMPORTANT
  - What have we learn from the experiment?
    - Supported by plots, figures, graphs, and tables
  - Drive home the points

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## Graphs, figures, plots, tables

- Must have a reason to be there, not just to look good!
- Explain each in reasonable detail
  - What is the axis, what we see, what is the trend, and why...
- Use good caption
  - “Delay vs. area graph showing more area leads to shorter delay”
  - Not: “the 2nd plot for experiment 1”
- May consider the use of color
  - But make sure gray scale still o.k.

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## Discussion

- What have we learned
- What is the contribution
- Why is it important
- May be last paragraph of the experiment section

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## Conclusion

- Now the reader have understand your work, you can give:
  - Overview in more technical terms
  - Main result and contribution in more technical terms
  - Comments and importance supported by results
  - Place the work in bigger, more practical context
  - Future work
    - To reinforce the importance (I.e. not a dead end)
    - Not an apology for shortcoming (too late for that)
    - Give hints on possible extension (do them yourself quickly if they are good!)

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## Reference and Appendix

- Reference
  - 12~15 is a good number for an 8 pager
  - Avoid excessive self-reference
  - Avoid excessive over reference the same authors
- Appendix
  - Not part of the paper, may not get read
  - A place to
    - Additional result (not crucial)
    - Additional experiment
    - Additional codes
    - Additional proofs or detail proofs

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## Final words

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- These are helpful hints and guides
- Not LAWS or RULES you must follow
- Your topic varies.... Your mileage varies
- Have fun!!!

