



Presentation Skills

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Making Good Presentations

- Essential for
 - Crystallizing your ideas
 - disseminating important results
 - Ideas don't sell themselves; they will lie on the shelf and gather dust unless you sell them
 - Explaining your work to colleagues
 - Giving talks/seminars in industry or academia
 - Selling your ideas to funding agencies (or venture capital firms)
 - Interviewing for jobs

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Presentation Skills

- Written
- Oral

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Oral Presentation: The Three MUST HAVES

- **Content**: know your material *really* well
- **Design**: Organize the material and create a high-quality presentation (usually, for formal research talks, in the form of slides)
 - Drive home key points
 - Visualize what you are saying
- **Delivery**: plan your oral presentation/what you will say along with each slide
 - practice, practice, practice

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Content: Know Your Material

- Do you have sufficient motivation for the work?
- What is the state of the art?
- What is your contribution/approach? How is it novel?
- Is the work mature enough for presentation/have you ironed out the corner cases?
- How sound are your results and analysis?

Remember: you are the expert (have chosen to become one): now you need to project that image

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Design: Organize Your Material

- What are the key points you want your audience to remember?
 - Keep it simple
 - Repeat them: tell them what you're going to tell them (forecast) and why, tell them, and tell them what you told them (summary)
- Is your presentation at an appropriate level for your audience?
- Start with the outline

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Conference Talks

- Remember
 - There is no way you will cover every detail of a 10 page paper in 25 minutes
 - The main goal is to get the audience interested in your work so they go read the paper
 - The talk is that sales job (but don't overdo the selling)

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A General Talk Outline (25 mins.)

- Title/author/affiliation (1 slide)
- Motivation and problem statement (1-3 slides)
- Related work (0-1 slides)
- Main ideas and methods (7-8 slides)
- Analysis of results and key insights (3-4 slides)
- Summary (1 slide)
- Future work (0-1 slide)

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Outline Slide or No Outline Slide:
To be or not to be

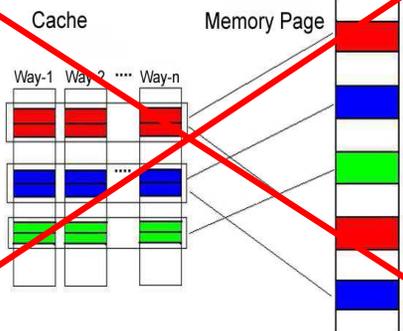
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Roadmap

- Background
- Design
- Evaluation
- Conclusion

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Background:
Brief Introduction of Page Coloring



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Instead ...

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The Multi-Core Challenge

- Multi-core chips
 - Dominant on the market
 - Last level cache is commonly shared by sibling cores, however sharing is not well controlled
- **Challenge:** Performance Isolation
 - Poor performance due to conflicts
 - Unpredictable performance
 - Denial of service attacks

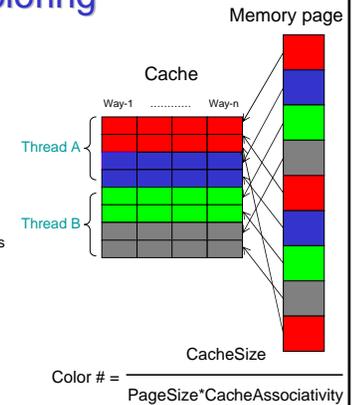


Picture courtesy Intel

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Possible Software Approach: Page Coloring

- Partition cache at coarse granularity
- Page coloring: advocated by many previous works
 - [Bershad'94, Bugnion'96, Cho '06, Tam '07, Lin '08, Soares '08]
- **Challenges:**
 - Expensive page re-coloring
 - Re-coloring is needed due to optimization goal or co-runner change
 - Without extra support, re-coloring means memory copying
 - 3 micro-seconds per page copy, >10K pages to copy, possibly happen every time quantum
 - Artificial memory pressure
 - Cache share restriction also restricts memory share



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Hotness-based Page Coloring

- Basic idea
 - Restrain page coloring to a small group of hot pages
- **Challenge:**
 - How to efficiently determine hot pages

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Roadmap

- Efficient hot page identification
 - locality jumping
- Cache partition policy
 - MRC-based
- Hot page coloring

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How to Give a Bad Talk: The Ten (9) Commandments*

- Thou shalt not waste space
 - Thou shalt not be neat
 - Thou shalt not covet brevity
 - Thou shalt not write large
 - Thou shalt not use color
 - Thou shalt not illustrate
 - Thou shalt not make eye contact
 - Thou shalt not skip slides in a long talk
 - Thou shalt not practice
- *Courtesy David Patterson, circa 1983, via Mark Hill, with appropriate modification to accommodate changes in technology

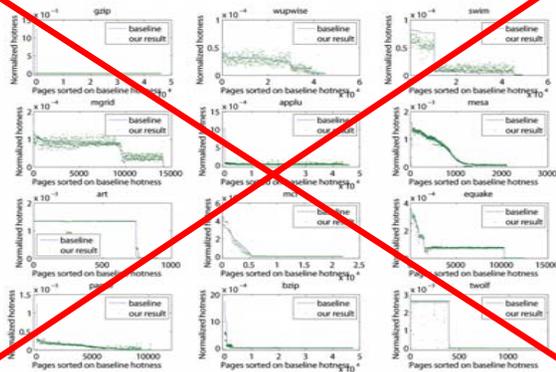
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Slide Design

- 3 is the golden number (almost!); 3-5 bullets or points per slide
 - Don't overcrowd
 - Make sure font is legible even in your figures (test it out in a room of similar size)
 - Spell and grammar check!
 - No need for complete sentences, but be consistent in your style and format

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Accuracy



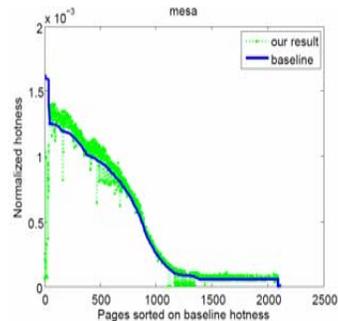
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Hot Page Identification Accuracy

- No major accuracy loss due to jumping as measured by two metrics (Jeffrey divergence & rank error rate)
- Result is fairly accurate



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Illustration and Color

- “A picture speaks a 1000 words”
 - A 1000 words don’t speak, however
 - The picture may need a little help
- Color for emphasis (when appropriate)
- Animation when appropriate

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Re-coloring Procedure

- Quick search for K -th hottest page’s hotness
 - $Bin[i][j]$ indicates # of pages in color i with normalized hotness in $[j, j+1]$ range

```

procedure Recolor
    budget (recoloring budget)
    old-colors (thread's color set under old partition)
    new-colors (thread's color set under new partition)
    if new-colors is a subset of old-colors then
        subtract-colors = old-colors - new-colors.
        Find the hot pages in subtract-colors within the budget
        limit and reallocate to new-colors in a round-robin fashion.
    end if
    if old-colors is a subset of new-colors then
        add-colors = new-colors - old-colors.
        Find the hot pages in old-colors within the
         $\frac{new-colors}{old-colors} \times budget$  limit, and then move a most budget
        (i.e.  $\frac{add-colors}{new-colors}$  proportion) of them to add-colors.
    end if
    
```

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Re-coloring Procedure(I)

hot ■

warm ■

cold ■

Cache share decrease

Budget = 2 pages

Old colors	Subtract colors
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Re-coloring Procedure(II)

hot ■

warm ■

cold ■

Cache share increase

Budget = 2 pages

Old colors	Add colors
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Oral Presentation

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PRACTICE, PRACTICE, PRACTICE!

Build your confidence; get feedback;
form a support group; return the favor

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Helpful Hints

- Tape yourself and watch the tape
- Enroll in a public speaking class
 - Toast masters, community courses
- Memorize first 5 minutes of your talk
 - Helps start out if you are nervous
- Leverage your nervous energy
 - Adrenalin can help you give a good talk

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Plan Your Verbal Presentation

- Work on the flow
- Motivate the work
- What are the main points
- Reiterate the main points
- Summarize – tell them what you told them

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Body Language

- Eye contact
- Fillers
- Gestures
- Enunciation
- Voice modulation and emphasis
- Speed of delivery
 - There's no prize for learning how to fit 20 words in 10 seconds
- Most of all, project your enthusiasm for what you are presenting!

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It Pays To Be Cautious!

- Redundancy/fault tolerance: make copies of your slides on a flash drive
 - Your computer may fail you
- Create versions in multiple formats for just in case
 - E.g., ppt and pdf
- Make sure you check the projection systems prior to your talk or session if at a conference
- Use practice talks to get possible questions
 - Be prepared with backup slides on details

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Poster Presentation

- 1-2 minute presentation that addresses
 - What
 - Why
 - How/what's novel
 - Outcome
- Poster content
 - Once again, pictures speak a 1000 words
 - With some help from text
 - Don't overcrowd
 - Make sure the main points above stand out

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Posters: Follow-Up Questions

- Be prepared to
 - Discuss approach in more detail
 - Discuss validation in more detail
 - Discuss limitations of your work
 - Discuss related work
 - Outline ongoing and future work

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Writing Style

- Clear organization of individual ideas
 - Sections and paragraphs should have a logical flow
 - Define terms before you use them
 - Keep forward references to a minimum
 - Each section represents a high-level topic/organizational unit
 - Each paragraph contains a single idea with supporting details
 - Each sentence expresses a single point/detail
- Pay attention to detail – spelling and grammar

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Good Presentation: The Three MUST HAVES

- **Content:** know your material *really* well
- **Design:** plan what you want to say and how you will say it (both visual and auditory)
- **Delivery:** practice, practice, practice! ... and use feedback you receive to improve

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Useful Resources

- Mark Hill's "Oral Presentation Advice", <http://pages.cs.wisc.edu/~markhill/conference-talk.html>
- CRA-W, <http://www.cra-w.org/gradcohort>
- http://www.randsinrepose.com/archives/2008/02/03/out_loud.html
- <http://www.slideshare.net/selias22/taking-your-slide-deck-to-the-next-level>

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