

Guidelines for Presentations

for the International Workshop FOMI 2008

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Acknowledgment

This document was originally part of the User's Guide to the *Beamer Class*¹ – a L^AT_EX package to build presentations – by Till Tantau.²

The original document (released under the GNU Public License³) has been modified to provide a quick reference for building presentations. Most details about *Beamer* have been accordingly removed, as the document is no longer concerned with the *Beamer Class*. Rather, modifications were introduced in order to provide a common ground to the FOMI 2008 International Workshop⁴ authors and audience, composed of both industry and academic researchers.

1 Structuring a Presentation

These guidelines either arise out of experience, out of common sense, or out of recommendations by other people or books. These rules are certainly not intended as commandments that, if not followed, will result in catastrophe. The central rule of typography also applies to creating presentations: *every rule can be broken, but no rule may be ignored.*

1.1 Know the Time Constraints

When you start to create a presentation, the very first thing you should worry about is the amount of time you have for your presentation. Depending on the occasion, this can be anything between 2 minutes and two hours.

- A simple rule for the number of frames is that you should have *at most one frame per minute*.
- In most situations, you will have less time for your presentation that you would like.
- Do not try to squeeze more into a presentation than time allows for. No matter how important some detail seems to you, *it is better to leave it out, but get the main message across*, than getting neither the main message nor the detail across. In many situations, a quick appraisal of how much time you have will show that you won't be able to mention certain details. Knowing this can save you hours of work on preparing slides that you would have to remove later anyway.

1.2 Global Structure

To create the “global structure” of a presentation, with the time constraints in mind, proceed as follows:

- Make a mental inventory of the things you can reasonably talk about within the time available.
- Categorize the inventory into sections and subsections.
- You might also divide your talk into parts, like a “review of the existing approaches”, and a “innovative part”. Note that in *Beamer* you can benefit from an *ad hoc* command, (`\part`), and each part has its own table of contents; however, the same can be done with other tools for preparing slides.
- Do not feel afraid to change the structure later on as you work on the talk.

¹ <http://latex-beamer.sourceforge.net>.

² tantau@users.sourceforge.net.

³ Like the current one. Available at <http://www.gnu.org/copyleft/gpl.html>

⁴ <http://www.fomi2008.di.unito.it/>.

Parts, Sections, and Subsections

- Do not use more than four sections and not less than two per part. Even four sections are usually too much, unless they follow a very easy pattern. Five and more sections are simply too hard to remember for the audience.
- When you present the table of contents, the audience will not yet really be able to grasp the importance and relevance of the different sections and will most likely have forgotten them by the time you reach them.
- Ideally, a table of contents should be understandable by itself. In particular, it should be comprehensible before someone has heard your talk.
- Keep section and subsection titles self-explaining.
- Both the sections and the subsections should follow a logical pattern.
- Begin with an explanation of what your talk is all about. Do not assume that everyone knows this. The Ignorant Audience Law states: *someone important in the audience always knows less than you think everyone should know*, even if you take the Ignorant Audience Law into account.
- Always conclude your talk with a summary that repeats the main message of the talk in a short and simple way. People pay most attention at the beginning and at the end of talks. The summary is your second chance to get across a message.

Abstract

In papers, the abstract gives a short summary of the whole paper in about 100 words. This summary is intended to help readers appraise whether they should read the whole paper or not.

- Since your audience is unlikely to flee after the first slide, in a presentation you usually do not need to present an abstract.
- However, if you can give a nice, succinct statement of your talk, you might wish to include an abstract. If you include an abstract, be sure that it is not some long text but just a very short message.
- Never, ever reuse a paper abstract for a presentation, except if the abstract is “We show $P = NP$ ” or “We show $P \neq NP$ ”.
- If your abstract is one of the above two, double-check whether your proof is correct.

Bibliographies

You may also wish to present a bibliography at the end of your talk, so that people can see what kind of “further reading” is possible. When adding a bibliography to a presentation, keep the following in mind:

- It is a bad idea to present a long bibliography in a presentation. Present only very few references: with too many references, you can be almost sure that none of them will be remembered.
- Present references only if they are intended as “further reading.” Do not present a list of all things you used like in a paper.
- You should not present a long list of all your other great papers except if you are giving an application talk.
- How to refer to literature works: always cite with full author name and year like “[Tantau, 2003]”, instead of something like “[2,4]” or “[Tan01,NT02]” (please, no copy and paste from the paper!).

1.3 Frame (Slide) Structure

‘Frame’ is the word –for *Beamer* users– for ‘slide’.

Just like your whole presentation, each frame should also be structured. A frame that is solely filled with some long text is very hard to follow. It is your job to structure the contents of each frame such that, ideally, the audience immediately gets which information is important, which information is just a detail, how the presented information is related, and so on.

The Frame Title

- Put a title on each frame. The title explains the contents of the frame to people who did not follow all details on the slide.

- The title should really explain things, not just give a cryptic summary that cannot be understood unless one has understood the whole slide. For example, a title like “The Poset” will have everyone puzzled what this slide might be about. Titles like “Review of the Definition of Partially Ordered Sets (Posets)” or “A Partial Ordering on the Columns of the Genotype Matrix” are much more informative.
- Ideally, titles on consecutive frames should “tell a story” all by themselves.
- In English, you should either always capitalize all words in a frame title except for words like “a” or “the” (as in a title), or you always use the normal lowercase letters. Do not mix this; stick to one rule. The same is true for block titles. For example, do not use titles like “A short Review of Turing machines.” Either use “A Short Review of Turing Machines.” or “A short review of Turing machines.” (Turing is still spelled with a capital letter, since it is a name).
- In English, the title of the whole document should be capitalized, regardless of whether you capitalize anything else.

How Much Can I Put On a Frame?

- A usual frame should have between 20 and 40 words. The maximum should be at about 80 words.
- Do not assume that everyone in the audience is an expert on the subject matter. Even if the people listening to you should be experts, they may have heard about things you consider obvious several years ago. You should always have the time for a quick reminder of what exactly a “semantical complexity class” or an “ ω -complete partial ordering” is.
- Never put anything on a slide that you are not going to explain during the talk, not even to impress anyone with how complicated your subject matter really is. However, you may explain things that are not on a slide.
- Keep it simple. Typically, your audience will see a slide for less than 50 seconds. They will not have the time to puzzle through long sentences or complicated formulas.
- Some people claim: PowerPoint users give better talks. The reason: since PowerPoint is so bad at typesetting math, they use less math, making their talks easier to understand. There is some truth in this, perhaps. Should you use *Beamer*, keep in mind that the great math-typesetting capabilities of L^AT_EX can easily lure you into using many more formulas than is necessary and healthy.

Structuring a Frame

- Use block environments like block, theorem, proof, example, and so on.
- Prefer enumerations and itemize environments over plain text.
- Do not use more than two levels of “subitemizing”.
- Never put more than five items in an itemize or an enumerate.
- *Emphasis* is important in creating structure. Emphasize and highlight important things. This can be a single word or a whole sentence. However, do not overuse highlighting, since this will negate the effect.
- Use columns.
- Never use footnotes. They needlessly disrupt the flow of reading. Either what is said in the footnote is important and should be put in the normal text; or it is not important, and should be omitted (especially in a presentation).

Writing the Text

- Use short sentences.
- Prefer noun phrases over complete sentences. For example, instead of “The figure on the left shows a Turing machine, the figure on the right shows a finite automaton” try “Left: A Turing machine. Right: A finite automaton”. Even better, turn this into an itemize or a description.
- Punctuate correctly: no punctuation after phrases, complete punctuation in and after complete sentences.
- Never use a smaller font size to “fit more on a frame.” Never ever use the evil option shrink.
- Text and numbers in figures should have the same size as normal text. Illegible numbers on axes usually ruin a chart and its message.

Interactive Elements

Ideally, during a presentation you would like to present your slides in a perfectly linear fashion, presumably by pressing the page-down-key once for each slide. However, there are different reasons why you might have to deviate from this linear order:

- Your presentation may contain “different levels of detail” that may or may not be skipped or expanded, depending on the audience’s reaction.
- You are asked questions, and wish to show supplementary slides.
- You present a complicated picture and you have to “zoom” in/out different parts to jump back and forth between details and main ideas.
- You are asked questions about an earlier slide, which forces you to find and then jump to that slide.

You cannot really prepare against the last kind of questions. In this case, you can use the navigation bars and symbols to find the slide you are interested in. Concerning the first three kinds of deviations, there are several things you can do to prepare “planned detours” or “planned short cuts”.

2 Using Graphics

Use graphics: graphics often convey concepts or ideas much more efficiently than text: a picture can say more than a thousand words (although, sometimes a word can say more than a thousand pictures).

- Put (at least) one graphic on each slide, whenever possible. Visualizations help an audience enormously.
- Usually, place graphics to the left of the text. Use the columns environment, in a left-to-right reading culture, we look at the left first.
- Graphics should have the same typographic parameters as the text: so, use the same fonts (with same size) in graphics as in the main text.
- While bitmap graphics, like photos, can be much more colorful than the rest of the text, vector graphics should follow the same “color logic” as the main text (like black = normal lines, red = highlighted parts, green = examples, blue = structure).
- Like text, you should explain everything that is shown on a graphic. Unexplained details make the audience puzzle whether this was something important that they have missed. Be careful when importing graphics from a paper or some other source. They usually have much more detail than you will be able to explain, and should be radically simplified.
- Sometimes the complexity of a graphic is intentional, and you are willing to spend much time explaining the graphic in great detail. In this case, you will often run into the problem that fine details of the graphic are hard to discern for the audience.

3 Using Animations and Transitions

- Use animations to explain the dynamics of systems, algorithms, etc.
- Do not use animations just to attract the attention of your audience. This often distracts attention away from the main topic of the slide. No matter how cute a rotating, flying theorem seems to look and no matter how badly you feel your audience needs some action to keep it happy, most people in the audience will typically feel you are making fun of them.
- Do not use distracting special effects like “dissolving” slides, unless you have a good reason for using them. If you use them, use them sparsely. They can be useful in some situations: for example, you might show a young boy on a slide and might wish to dissolve this slide into the next one, showing a grown man instead. In this case, the dissolving gives the audience visual feedback that the young boy “slowly becomes” the man.

4 Choosing Appropriate Colors

- Use colors sparsely. The prepared themes are already quite colorful (blue = structure, red = alert, green = example). If you add more colors for things like code, math text, etc., you should have a very good reason.

- Be careful when using bright colors on white background, especially when using green. What looks good on your monitor may look bad during a presentation due to the different ways monitors, beamers, and printers reproduce colors. Add lots of black to pure colors when you use them on bright backgrounds.
- Maximize contrast. Normal text should be black on white or at least something very dark on something very bright. Never do things like “light green text on not-so-light green background.”
- Background shadings decrease the legibility without increasing the information content. Do not add a background shading just because it “somehow looks nicer.”
- Inverse video (bright text on dark background) can be a problem during presentations in bright environments, since only a small percentage of the presentation area is light up by the beamer. Inverse video is harder to reproduce on printouts and on transparencies.