

Giving Technical Talks

How to avoid making some of the mistakes that I have made

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Overview

- Why are you Giving a Talk?
- How to Organize a Talk
- Some More Detailed Advice
 - Ten Commandments
 - Seven Deadly Sins
- Conclusions

Acknowledgements:

- Many of these ideas from a paper by Ian Parberry:
 - <http://hercule.csci.unt.edu/ian/guides/speaker.html>
- and a talk by Bill McKeeman
 - <http://www.gorillaman.com/mckeeman/writings/presentation/>

Your Reason for Giving a Talk

- Somebody is making me do it.
- I want to impress the audience with my brilliance.
- I want to get a job.
- I want the audience to understand this piece of research.

A technical talk is great for conveying:

- context
 - What has been done before?
 - Why is the research important?
 - What problems are still open?
- An overview and framework
 - What does this research contribute?
 - What methods were used to solve problems?
- Enthusiasm and excitement

A technical talk is a poor way to convey:

- Nitty-gritty details
- Lots of factual information

The Parts of a Technical Talk

- Introduction
- Body
- Technicalities
- Conclusion

Introduction

- Define the problem
- Motivate the problem and hook audience
- Introduce needed terminology
- Discuss earlier work
- Explain the contributions you will present
- Provide a roadmap for the rest of the talk

Body

- Outline the major results of your work
- Explain the significance of the results
- Sketch a high-level explanation or proof or justification of your results

Technicalities

- Present a key lemma or idea
- Discuss it in detail
- This is where you convince people that what you have done is not trivial and has some depth and difficulty.

Conclusions

- Summarize the key points
- Make observations that would have been confusing to make before the audience heard the talk
- Give open problems
- Indicate that the talk is over

Who is your Audience?

- General public
- CS folks (e.g. colloquium)
- CS folks in your area (e.g. seminar class)
- Experts in the exact area of your research (e.g. research group meeting)

General Public

- Concentrate on Introduction
- Body presented at a high level
- Eliminate Technicalities

CS Folks

- Introduction important
- Substantial Body
- Skimpy Technicalities

CS Folks in your Area

- Can cut back on Introduction
- Meaty Body
- Moderate Technicalities

Experts in your exact area of research

- Skimpy Introduction
- Meaty Body
- Meaty Technicalities
 - May discuss more than one idea or lemma

The Ten Commandments

- | | |
|---|--|
| • Know your material | • Maintain eye contact |
| • Communicate the key ideas | • Maintain ear contact |
| • Use logical order | • Simple visuals |
| • Concrete examples before abstract ideas | • Quality over quantity |
| • Size talk to the time | • Practice your talk in full before people |

Use Logical Order

- You are telling a story. What order will make the best sense to the audience?
- Avoid forward references
- Motivate each step, tie it back to the overall outline
- Remember that the audience is not as familiar with the material as you are!

Concrete Examples before Abstract Ideas

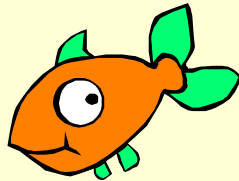
- Compare
 - I will now prove that if $m|a$ and $n|a$ and $\gcd(m,n) = 1$, then $mn|a$.
- To
 - Suppose $3|a$ and $5|a$. Does $15|a$?
 - Suppose $6|a$ and $9|a$. Does $54|a$?
 - Under what circumstances does $m|a$ and $n|a$ imply that $mn|a$?

Size Talk to Time

- Leave time for audience interaction
- Plan to end at least 5 minutes early
- Plan what to leave out if you get behind
- You can't include everything - keep the most important stuff and cut the rest

Maintain Eye Contact

- It is a way to communicate
- It is how you tell if the audience is following, lost, bored, etc.
- Talk to your audience - don't read your talk, talk to your feet, talk to the screen



Maintain Ear Contact

- Speak slowly (but not too slowly)
- Speak clearly
- Project your voice
- Pause after delivering a packet of information or asking a question

Simple Visuals

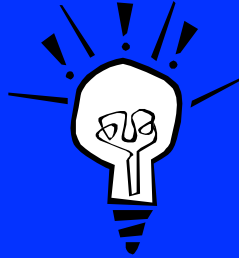
- Make sure that the text is large enough to read
- The purpose of the slide is to give the audience a structure, as something to jog their memory as to the point you are trying to make, or as a concrete expression of a formula, etc. It should not be a verbatim transcript of what you are saying. If you are saying exactly what is on the slide then you are doing something wrong.

Simple Visuals

- One picture (graph, diagram) can be worth 1000 words
- Try out the projection equipment, overhead, or whatever before the talk
- Think about what you will do if the equipment does not work

Simple Visuals

- Too many *special effects, fonts, colors, etc.* make slides hard to read and understand and distract from your talk.



Seven Deadly Sins

- Getting bogged down in details
- Going over your time
- Trying to include too much
- Being boring
- Speaking unintelligibly
- Arrogance
- Losing your audience

Trying to include too much

- Symptom - Time almost up and you are half way through your talk
- Symptom - Tearing through slides faster than the audience can read them
- Symptom - Too many slides. Plan on at least two minutes per slide.
- Disaster - you left the most important stuff to the end, and are out of time

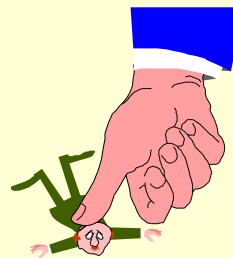
Being boring

- Presentation is a public performance
- You have to be energetic, animated, enthusiastic. (You can overdo this.)
- If you don't seem to be interested, why should your audience be interested?
- If you find the material boring, so will your audience. Pick more interesting material.

Speaking unintelligibly

- Don't mumble
- Don't talk in a monotone
- Don't use jargon or undefined terms
- Don't swallow your words or endin...
- Avoid mannerisms that distract your audience from what you are saying

Arrogance



- The fact that you know more about your talk than the audience does not make you superior to them.
- Don't put down or belittle questioners

Losing your audience

- Over their heads (slow down, back up)
- Beneath their interest (get to the good stuff)
- Too big a step (go back and fill in details)
- Not enough relevant examples
- *Loss detector: eye contact*

Conclusions

- You can learn to give good talks
- Plan and organize your talk
- Think from the audience's point of view
- Follow commandments, avoid sins
- Practice! Get feedback. Get better.