

# How to (not) give a talk

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Ivan Krstić

Harvard University  
Cambridge, MA, USA  
[krstic@hcs.harvard.edu](mailto:krstic@hcs.harvard.edu)



# What is this?

- I've been giving talks for a while
  - Academia
  - Industry
  - Press conferences
  - Debates



Years of my mistakes, and some common wisdom from other people.



# Agenda

- Talk mechanics – the simple stuff
- Full anatomy of a talk – fits on one slide!
- Rehearsal
- Audience
- Distractions
- Q&A segments



# Talk mechanics

- Your throat doesn't like being dry
- Your bladder doesn't like being full
- Hence, three mistakes:
  - Not drinking anything – dry throat
  - Drinking too much – must take toilet break
  - Taking a toilet break and forgetting to turn off your wireless microphone.
- If not using a microphone, be ready to project your voice



# Anatomy of a talk

- Punctuality
- Voice
- Body language
- Sentences
- Jargon
- Detail level
- Conclusion



# Punctuality, voice

## ■ Punctuality

- Always start on time
- And absolutely **always**, always end on time!
- Going over time is the **#1 sin** of giving a talk!

## ■ Voice

- Monotone puts people to sleep
- Vary pitch and speaking speed, but don't overdo it



# Body language

- It's normal to be nervous during a talk...
- ... but you don't want your audience to know
- Common offenses
  - Shifting body from side to side
  - Flailing around with your arms
  - Playing with something in your hands
- If you don't have good control over your body...
  - Plant your feet firmly on the ground
  - And put your hands behind your back



# Sentences, jargon

- Run-on sentences are a sure way to lose your audience.
  - If a sentence takes longer than a few seconds to say, break it up.
- Jargon
  - Only if and when appropriate!
  - Go easy with it even if you think your audience can handle it



# Detail level, conclusion

## ■ Detail level

- Imperative to know your audience
- You can't give a PhD-level talk to middle schoolers, nor vice versa
- We'll talk about your audience in a second

## ■ Conclusion

- Don't walk away without it!
- Even if you have to cut some parts from your talk, always conclude at the end!



# Sometimes hard to grasp...

- If presented badly, your ideas are **worthless.**
- If you abuse your audience, your ideas are **worthless.**



# Generally...

- Listening is not easy
- Paying attention is even harder
- You need audience's full attention to get your ideas across
- So...



# DO

- talk
- stand
- move
- vary voice
- be loud, clear
- finish on time
- conclude

# DO NOT

- read
- sit
- stand still
- drone on
- be quiet, mumble
- start or end late
- just end and leave



# Q&A

- Talks almost always end in Q&A
- **Always** repeat question loudly
- Short answers, begin with “yes”/”no”
- Never interrupt questioner
- Never argue with (hostile) questioner
- Confess to ignorance where necessary



# For prepared talks...

- Always rehearse, at least once!
- Rehearsal
  - Identifies and fixes timing
  - Finds illogical transitions
  - Puts you at ease
  - Is easy for you to do



# For unprepared talks...

## ■ Smile

- A lot.
- People are good at sniffing out unprepared talks, so it's better to have...
- ... big happy smiles and be unprepared than to be looking unfriendly *and* unprepared

## ■ Have cute pictures

- No, really. They can save you.

See? A cute picture.





# Audience

- Ideally, should be as involved in your talk as you are (very hard in practice)
- Ask about them beforehand
- Tell them about you in the beginning
- Determine level of knowledge
- Respond to them during your talk
- If possible, tell them what you expect of them beforehand

# Bad slide to show to 6<sup>th</sup> graders

## Theoretical Background for Balanced Approximation

Consider a set of points  $Z = \{z_i\}$  ( $i = 0, 1, 2, \dots, r$ ) in  $[a, b]$  that are arranged in ascending order:  $z_i < z_{i+1}$  ( $z_0 = a, z_r = b$ ) If the function  $f(x)$  is approximated on each subinterval  $(z_{i-1}, z_i)$ ,  $i=1, \dots, r$  by the best Chebyshev approximation of the form  $V_{k, l}(x)$  with different numerical values of parameters then this function is approximated on the whole interval  $[a, b]$  by Chebyshev spline :

$$S(F, x) = \sum_{i=1}^r F(A_i, x) H((x - z_{i-1})(z_i - x)) ,$$

where  $H(x)$  is the Heavyside function.

If for all  $i = 1, 2, \dots, r$  links of spline  $S(F, x)$  the error  $\mu = \frac{f(x) - S(F, x)}{w(x)}$ , where weight function  $w(x) > 0$  for all  $x$  in  $[a, b]$ ,

then the approximation of  $f(x)$  by spline  $S(F, x)$  for  $x$  in  $[a, b]$  is called a balanced approximation with weight  $w(x)$ .

**Theorem** [2,3]. Suppose that  $\mu = \frac{f(x) - S(F, x)}{w(x)}$   $f(x) \in C^{(m+2)}[a, b]$ ,  $\eta_{k, l}(f) \in C[a, b]$ ,  $w(x) \in$

$C^{(1)}[a, b]$ ,  $0 \leq \eta_{k, l}(f)$  for  $x \in [a, b]$ ,  $0 < w(x)$  for  $x \in [a, b]$ , then for  $r \rightarrow \infty$  the minimum error  $\mu$

$$\mu = \frac{\left( \int_a^b \left| \frac{\eta(f, P)}{w(x)} \right|^{\frac{1}{m+1}} dx \right)^{(m+1)}}{2^{(2m+1)} (m+1)! r^{(m+1)}} \left( 1 + O\left(\frac{b-a}{r}\right) \right)$$



# More audience

- Keep their interest!

- Anecdotes
- Examples
- Props
- Humor and funny stories
- References to pop culture
- Neat quotations if applicable



# Even more audience...

- Are you figuring out this is important yet?
- Make **sure** they can see you and hear you clearly, even in the back of the room
- They have an attention span – be very mindful of it!
  - Usually, you'll lose your audience after about 45 minutes



# On PowerPoint

- Often detracts from talk – minimize use!
- Learn to love to hate it
- If you're not experienced in preparing slides, always show them to someone before the talk
- Your slides **are not your talk**
  - I can read your slides much faster than you can read them out loud



One more time, people

Your slides **ARE NOT** your talk!



# Minutiae: laser pointers

- Abusing them is the **#2 sin** of talks
- If you want to use them, learn how
  - Avoid overuse
  - Control your hands
  - Put the pointer in your pocket when not in use
  - Always use your shadow instead if possible
  - Touching the screen adds nice tactility



# Conclusion

- Talks are **hard**
  - On the speaker
  - And on the audience
- Getting these basics down helps a lot
- But to get really good...
  - Give lots of talks!
  
- Questions?