Scientific Writing, Integrity and Ethics III

Scientific Presentation in CS

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References

Simon Peyton Jones. How to give a great research talk.
https://www.microsoft.com/en-us/research/academic-program/give-great-research-talk/

Research is communication.

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- Crystalise your ideas

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- Crystalise your ideas
- Communicate them to others

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- Crystalise your ideas
- Communicate them to others
- Get feedback

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- Get feedback
- Build relationships

Research is communication.

- Crystalise your ideas
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- Get feedback
- Build relationships
- Gather research brownie points

Research is communication.

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Scientific presentation is a part of research!

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How often have you said "I'm really glad I went to that talk".

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Some simple, actionable ideas that can make your talks much better.

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You will have more fun.

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A research talk gives you access to the world's most priceless commodity: the time and attention of other people. Don't waste it!

Purpose

To impress your audience with your brainpower.

To impress your audience with your brainpower.

To tell them everything you know about your topic.

To impress your audience with your brainpower.

To tell them everything you know about your topic.

To present all the technical details.

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To give your audience an intuitive feel for your idea.

To give your audience an intuitive feel for your idea.

To make them foam at the mouth with eagerness to read your paper.

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To make them foam at the mouth with eagerness to read your paper.

To engage, excite, provoke them.

To give your audience an intuitive feel for your idea.

To make them foam at the mouth with eagerness to read your paper.

To engage, excite, provoke them.

To make them glad they came.

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Have read all your earlier papers.

Have read all your earlier papers.

Thoroughly understand all the relevant theory, application, background.

Have read all your earlier papers.

Thoroughly understand all the relevant theory, application, background.

Are all agog to hear about the latest developments in your work.

Have read all your earlier papers.

Thoroughly understand all the relevant theory, application, background.

Are all agog to hear about the latest developments in your work.

Are fresh, alert, and ready for action.

Have never heard of you.

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Have never heard of you.

Have heard of the theory, but wish they hadn't.

Have never heard of you.

Have heard of the theory, but wish they hadn't.

Have just had lunch and are ready for a doze.

Have never heard of you.

Have heard of the theory, but wish they hadn't.

Have just had lunch and are ready for a doze.

Your mission is to **wake them up** and make them glad they did.

Content

Usually,

Usually,

Motivation (0%-10%) $\implies$ Key Idea (0%-10%) $\implies$ Technical Details (80%-100%)

Usually,

Motivation (0%-10%) $\implies$ Key Idea (0%-10%) $\implies$ Technical Details (80%-100%)

Suggested,

Usually,

Motivation (0%-10%) $\implies$ Key Idea (0%-10%) $\implies$ Technical Details (80%-100%)

Suggested,

Motivation (20%) $\implies$ Key Idea (80%) $\implies$

Usually,

Motivation (0%-10%) $\Longrightarrow$ Key Idea (0%-10%) $\Longrightarrow$ Technical Details (80%-100%)

Suggested,

Motivation (20%) $\Longrightarrow$ Key Idea (80%) $\Longrightarrow$ **There is no further step**

You have only two minutes to engage your audience before they start to doze.

You have only two minutes to engage your audience before they start to doze.

What do they think?

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Why should I tune into this talk?

Why should I tune into this talk?

What is the problem?

Why should I tune into this talk?

What is the problem?

Why is it an interesting problem?

Why should I tune into this talk?

What is the problem?

Why is it an interesting problem?

Does this talk describe a worthwhile advance?

You have 2 minutes to answer these questions.

You have 2 minutes to answer these questions.

Don't waste!

Example 1

Java class files are large [brief figures], and get sent over the network. Can we use language-aware compression to shrink them? Yes, and I'm going to show you how we can do 50% better than the best generic zipping technology.

Example 2

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Synchronisation errors in concurrent programs are a nightmare to find. I'm going to show you a type system that finds many such errors at compile time.

If the audience remembers only one thing from your talk, what should it be?

You must identify a key idea.

The Key Idea

You must identify a key idea.

- "What I did last year" is not a good choice.

You must identify a key idea.

- "What I did last year" is not a good choice.

Be specific.

You must identify a key idea.

- "What I did last year" is not a good choice.

Be specific.

- Don't leave your audience to figure it out for themselves.

You must identify a key idea.

- "What I did last year" is not a good choice.

Be specific.

- Don't leave your audience to figure it out for themselves.

Be absolutely specific.

The Key Idea

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Be specific.

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Be absolutely specific.

- If you remember nothing else, remember this.

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- Don't leave your audience to figure it out for themselves.

Be absolutely specific.

- If you remember nothing else, remember this.

Organize your talk around this specific goal.

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Organize your talk around this specific goal.
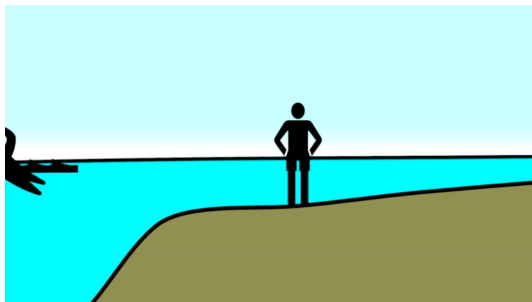
- Ruthlessly prune material that is irrelevant to this goal.

Avoid shallow overviews at all costs.

Cut to the chase: the technical "meat".

It's ok to cover only part of your paper.

When time is short, omit the general case, not the example.

Your Weapon

To motivate the work...

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To motivate the work...

To convey the basic intuition...

To motivate the work...

To convey the basic intuition...

To illustrate The Idea in action...

To motivate the work...

To convey the basic intuition...

To illustrate The Idea in action...

To show extreme cases...

To motivate the work...

To convey the basic intuition...

To illustrate The Idea in action...

To show extreme cases...

To highlight shortcomings...

What Suggested to Leave Out

This paper

- We propose a translational-based temporal KG embedding to first deal with multi-relations and time simultaneously.

- Experiments show significant improvements over both translation-based and neural network approaches regarding temporal link prediction.

Do not put too much words within one page.

Not Too Much

Do not put too much words within one page.

Remove subjects, words that can be explain orally.

Not Too Much

Do not put too much words within one page.

Remove subjects, words that can be explain orally.

Make the page elegant.

Outline of my talk

- Background
- The FLUGOL system
- Shortcomings of FLUGOL
- Overview of synthetic epimorphisms
- π-reducible decidability of the pseudo-curried fragment under the Snezkovwski invariant in FLUGOL
- Benchmark results
- Related work
- Conclusions and further work

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"Outline of my talk": conveys near zero information at the start of your talk.

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Worse, since your audience only gives you 2 minutes before dozing, you've just lost them.

No Outline at the Beginning

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You can put up an outline for orientation after your motivation.

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You can put up an outline for orientation after your motivation.

As signposts at pause points during the talk.

Related work

[PMW83] The seminal paper

[SPZ88]   First use of epimorphisms

[PN93]   Application of epimorphisms to wibblification

[BXX98]   Lacks full abstraction

[XXB99]   Only runs on Sparc, no integration with GUI

But You Should

Absolutely must know the related work.

Absolutely must know the related work.

respond readily to questions.

Absolutely must know the related work.

respond readily to questions.

Praise the opposition.

Absolutely must know the related work.

respond readily to questions.

Praise the opposition.

Put the really necessary reference at the footnote, provided you will share your slides.

Technical detail

$$\frac{}{\Gamma \vdash k : \tau_k} \qquad \frac{\Gamma \cup \{x : \tau\} \vdash e : \tau'}{\Gamma \vdash \lambda x.e : \tau \to \tau'} \qquad \frac{\Gamma \vdash e_1 : \mathtt{ST}\ \tau^\circ\ \tau \quad \Gamma \vdash e_2 : \tau \to \mathtt{ST}\ \tau^\circ\ \tau'}{\Gamma \vdash e_1 \mathbin{>\!\!>=} e_2 : \mathtt{ST}\ \tau^\circ\ \tau'}$$

$$\frac{\Gamma \vdash e : \tau}{\Gamma \vdash \mathtt{returnST}\ e : \mathtt{ST}\ \tau^\circ\ \tau} \qquad \frac{\Gamma \vdash e : \tau}{\Gamma \vdash \mathtt{newVar}\ e : \mathtt{ST}\ \tau^\circ\ (\mathtt{MutVar}\ \tau^\circ\ \tau)} \qquad \frac{\Gamma \vdash e : \mathtt{MutVar}\ \tau^\circ\ \tau}{\Gamma \vdash \mathtt{readVar}\ e : \mathtt{ST}\ \tau^\circ\ \tau}$$

$$\frac{\Gamma \vdash e_1 : \mathtt{MutVar}\ \tau^\circ\ \tau \quad \Gamma \vdash e_2 : \tau}{\Gamma \vdash \mathtt{writeVar}\ e_1\ e_2 : \mathtt{ST}\ \tau^\circ\ \mathtt{Unit}} \qquad \frac{}{\Gamma \cup \{x : \forall \alpha_i.\tau\} \vdash x : \tau[\tau_i/\alpha_i]}$$

$$\frac{\Gamma \vdash e : \tau' \to \tau \quad \Gamma \vdash e' : \tau'}{\Gamma \vdash e\ e' : \tau} \qquad \frac{\Gamma \vdash e : \mathtt{ST}\ \alpha^\circ\ \tau}{\Gamma \vdash \mathtt{runST}\ e : \tau}\ \alpha^\circ \notin FV(\Gamma, \tau)$$

$$\frac{\forall j.\Gamma \cup \{x_i : \tau_i\}_i \vdash e_j : \tau_j \quad \Gamma \cup \{x_i : \forall \alpha_{j_i}.\tau_i\}_i \vdash e' : \tau'}{\Gamma \vdash \mathtt{let}\ \{x_i = e_i\}_i\ \mathtt{in}\ e' : \tau'}\ \alpha_{j_i} \in FV(\tau_i) - FV(\Gamma)$$

Figure 1. Typing Rules

Even though every line is drenched in your blood and sweat, dense clouds of notation will send your audience to sleep.

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Present specific aspects only; refer to the paper for the details.

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By all means have backup slides to use in response to questions.

enthusiasm!

If you do not seem excited by your idea, why should the audience be?

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Enthusiasm makes people dramatically more receptive.

If you do not seem excited by your idea, why should the audience be?

Enthusiasm makes people dramatically more receptive.

It gets you loosened up, breathing, moving around.

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Write your slides the night before...

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Write your slides the night before...

or at least, polish it then.

Your talk absolutely must be fresh in your mind.

Your talk absolutely must be fresh in your mind.

Ideas will occur to you during the conference, as you obsess on your talk during other people's presentations.

No Apology

"I didn't have time to prepare this talk properly"

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"My computer broke down, so I don't have the results I expected"

"I didn't have time to prepare this talk properly"

"My computer broke down, so I don't have the results I expected"

"I don't have time to tell you about this"

No Apology

"I didn't have time to prepare this talk properly"

"My computer broke down, so I don't have the results I expected"

"I don't have time to tell you about this"

"I don't feel qualified to address this audience"

Pre-Presentation Symptoms

Inability to breathe

Inability to stand up (legs give way)

Inability to operate brain

Increase of heart rate

You are not a wimp. Everyone feels this way.

Deep breathing during previous talk.

Deep breathing during previous talk.

Script your first few sentences precisely,

Deep breathing during previous talk.

Script your first few sentences precisely, since no brain required.

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Deep breathing during previous talk.

Script your first few sentences precisely, since no brain required.

Move around a lot, use large gestures, wave your arms, stand on chairs.

Deep breathing during previous talk.

Script your first few sentences precisely, since no brain required.

Move around a lot, use large gestures, wave your arms, stand on chairs.

Go to the loo first.

Presentation Matters

Be Seen

Face the audience, not the screen.

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Face the audience, not the screen.

Know your material.

Be Seen

Face the audience, not the screen.

Know your material.

Put your laptop in front of you, screen towards you.

Be Seen

Face the audience, not the screen.

Know your material.

Put your laptop in front of you, screen towards you.

Don't point much, but when you do, point at the screen, not at your laptop.

Speak to someone at the back of the room, even if you have a microphone on.

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Make eye contact; identify a nodder, and speak to him or her (better still, more than one)

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Watch audience for questions. . .

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Specifically encourage questions during your talk: pause briefly now and then, ask for questions.

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Specifically encourage questions during your talk: pause briefly now and then, ask for questions.

Be prepared to truncate your talk if you run out of time. Better to connect, and not to present all your material.

Other Matters

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Use a wireless presenter gizmo

Use a wireless presenter gizmo

Test that your laptop works with the projector, in advance

Other Matters

Use a wireless presenter gizmo

Test that your laptop works with the projector, in advance

Laptops break: leave a backup copy on the web; bring a backup copy on a USB.

Audiences get restive and essentially stop listening when your time is up. Continuing is very counter productive.

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Simply truncate and conclude.

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Do not say "would you like me to go on?" (it's hard to say "no thanks")

Audiences get restive and essentially stop listening when your time is up. Continuing is very counter productive.

Simply truncate and conclude.

Do not say "would you like me to go on?" (it's hard to say "no thanks")

Absolutely without fail, finish on time.

Be An Audience

You will attend 50+ as many talks as you give. Watch other people's talks intelligently, and pick up ideas for what to do and what to avoid.

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The general standard is often low. You don't have to be outstanding to stand out.

Eye contact with speaker

Be a Good Audience

Eye contact with speaker

Nod frequently

Be a Good Audience

Eye contact with speaker

Nod frequently

Ask questions

Don't wait for the speaker to invite questions; just ask.

Don't wait for the speaker to invite questions; just ask.

Start doing so the moment you lose contact with the talk. The rest of the audience will thank you for it.

Don't wait for the speaker to invite questions; just ask.

Start doing so the moment you lose contact with the talk. The rest of the audience will thank you for it.

Stop when you sense that you are beginning to de-rail the entire talk.

Good papers and talks are a fundamental part of research excellence

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- Invest time
- Learn skills
- Practice