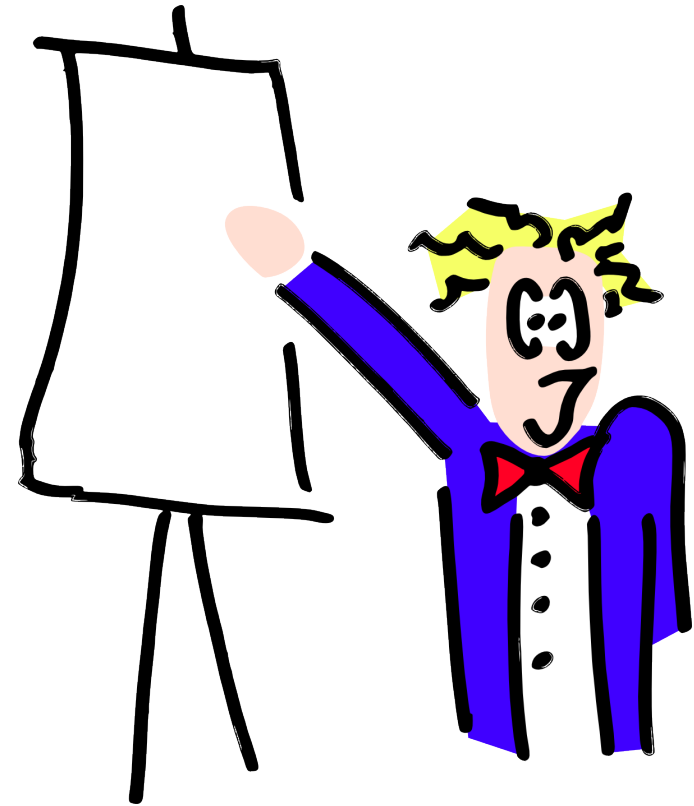


Research Presentation Skills

How to give a (conference) presentation

Hugh Leather



What is a conference presentation?

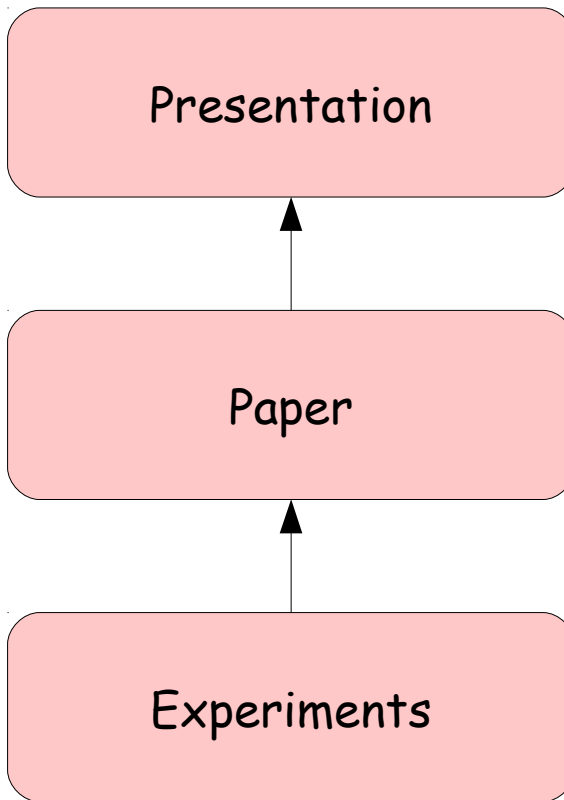
- A chance to promote your research
- Get feedback from others
- Helps with networking
- It is an advert for the paper
- ~~A punishment from the boss~~

An advert for the paper

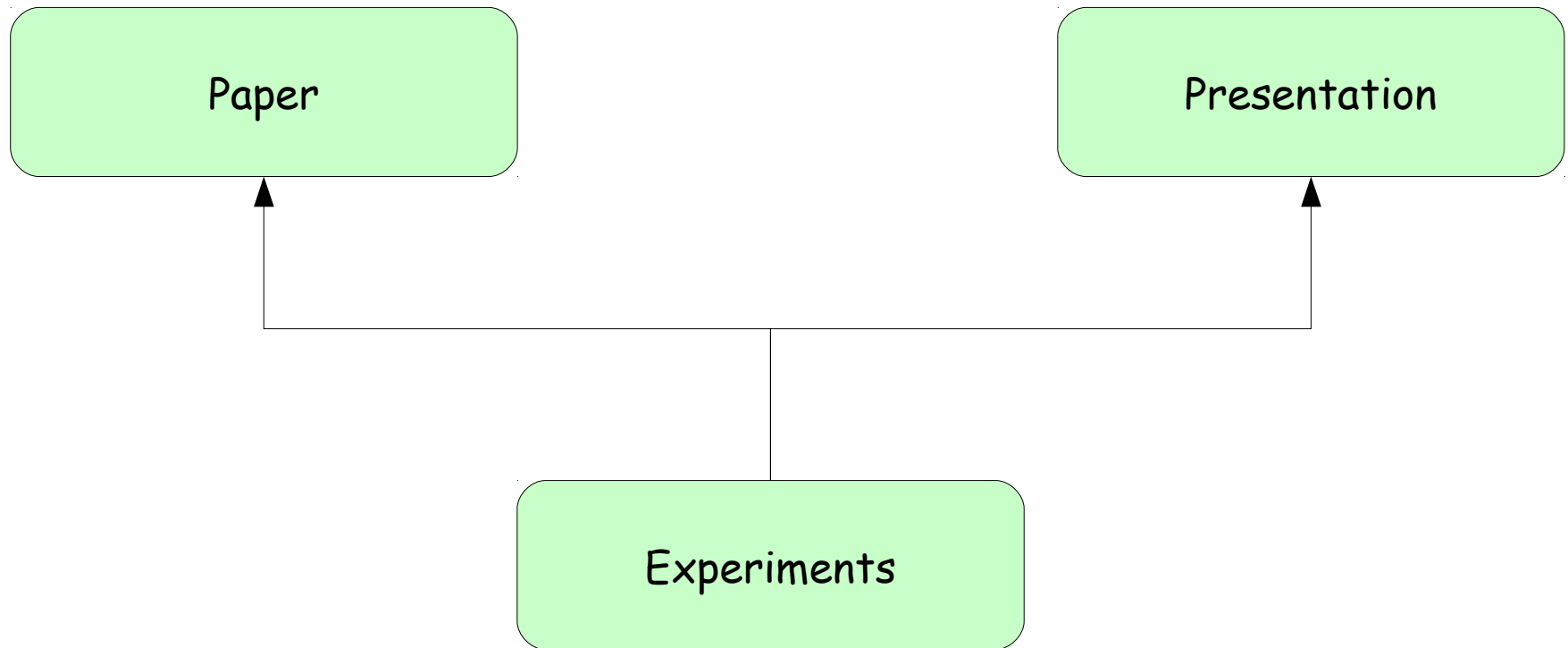
- Get bored conference attendees to read it
- A much simpler message than the paper
- More exciting - just the best bits
- ~~A repeat of everything in your paper~~



Don't think of it as derived from
the paper



But as derived from the work



The story

- Concentrate on the main points
- It should flow like a good story
- Lead people where you want them to go

- People will think you're clever because you can explain complex things simply
- Simply do not show them the complexity

The audience

- Half asleep
- Half reading their email
- Some preparing for their own presentation
- A few nodding politely thinking something else



What they like

- To hear about great ideas
- Technical depth (but not detail)
- Proof that it worked

Structure - If you forget all else

- Tell them what you are going to tell them
- Tell them the story
- Tell them what you have told them

- Make it clear that you have finished!

What is in your presentation?

- Intro - What you are going to do
- Motivation - Why do what you did
- Body - What you did
- Results - How what you did worked
- Conclusion - What you did

Intro

- Summarise what you are going to do
- Sets the context
- If you don't, they won't know what to listen to and what to ignore
- Do not wait until half way through!

“We use genetic programming to search a space of compiler optimisations, finding the best in terms of program performance”

Motivation

- Explain why it's important
- Examples, Examples, Examples!
- ~~General → Specific?~~
- Specific → General

“Look, we exhaustively tried compiler optimisations and found that -O3 was rubbish. But the space is way too big to do that way and isn't flat. GAs looked suitable.”

Body

- Explain your idea and what's sexy about it
- Show them the good stuff
- Ignore the tedious (which has to be in the paper)

“Here is the form of genetic programming we used. It fits so well with the problem. Here's how we drive it.”

Results

- Show them it worked
- Maybe doesn't need all 600 graphs from the paper
 - Can have back up slides for less interesting graphs

“Check out these genetic programs we found. They achieve 50% more performance than -O3 and 30% more than Joe Bloggs, the previous state of the art”

Conclusion

- You want them to remember what you did
- Repeat it! It works for advertisers!

“We used genetic programming to search for compiler optimisations. We beat -O3 by 50% and Bloggs by 30%”

Questions

- Question are good
- No questions means either:
 - ~~Presentation so perfect it covered everything, ever~~
 - ~~You made it, yea!~~
 - Everyone asleep
 - No one understood anything at all



Why do people ask questions?

- Genuine curiosity/clarification
- Politeness from the convener
- To show how clever they are

How not to answer questions

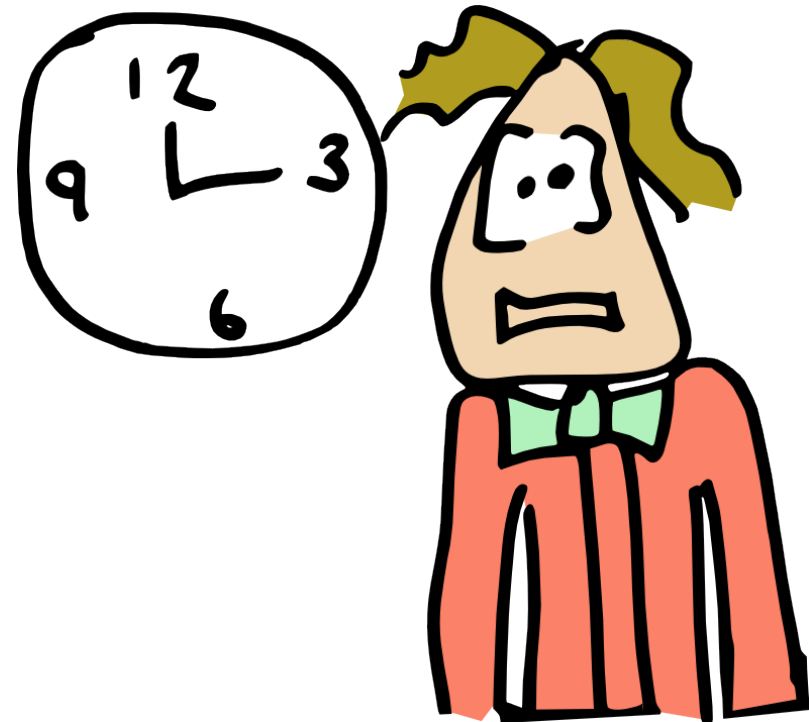
- Tell them it's a stupid question
- Look pained (sigh a lot)
- Never admit weakness

How to answer questions

- "That's a very interesting question..."
 - Even if it's the dumbest thing you've ever heard
- "We hadn't thought of that..."
- Clarify:
 - "Do you mean, 'does the x widget connect to y'?"
 - "Did I answer your question?"
- "I think this answer may take a while, can we talk off-line?"

Timing

- Do not overrun your timing
- The audience gets itchy feet after they expect you to finish
- It's rude
- No one ever got criticised for finishing early



Timing

- More slides than minutes → warning bells
- 2-3 minutes per slide
- Remember question time
- Practice with a stopwatch

Attitude

- It's no good if they fall asleep
- It's no good if they can't hear you
- It's no good if they don't understand you
- It's no good if you talk so fast no one can follow
- *It's no good if they don't remember your points*

Excitement!

- Who should be most excited by your work?

YOU!

- You must engage your audience
- Move around, gesticulate, show it in your voice
- Keep eye contact



Being heard

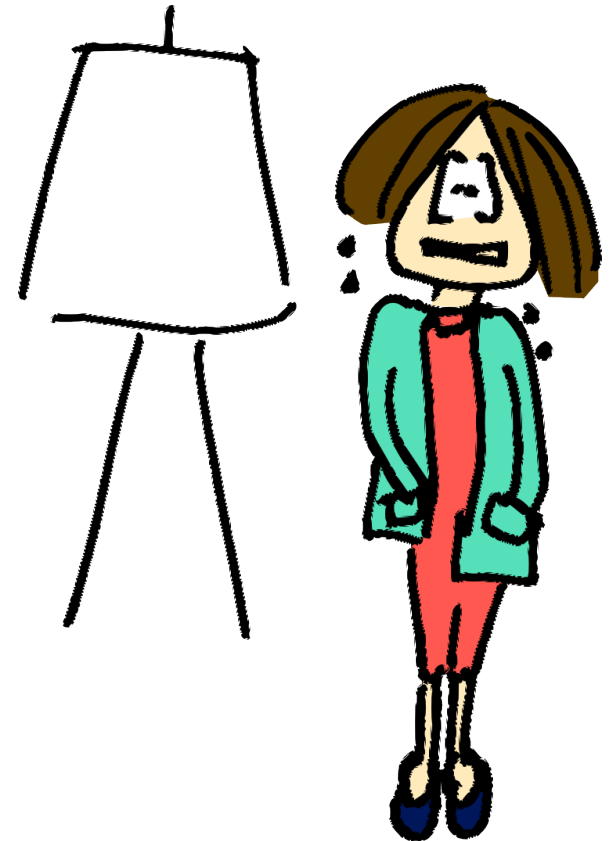
- Speak loudly - Do not mumble
 - Much louder than you're used to
- Speak to the back of the room
 - Even with microphone
- Speak slooowly
 - Stress makes you speed up

The pack smells fear

- Do not sigh like you hate doing this
- Do not apologise
 - "I didn't have time to prepare this"
 - "I didn't get the data I was hoping for"

Nerves

- Everyone gets nervous
- A little nervousness helps you to sound excited
- It gets much, much easier with practice



Bad nerves

- Practice - a lot
- Learn speech for first few slides
- Focus on a couple of 'nodders'
- Remember how bad most presentations are

Practice, Practice, Practice

- Dry run in your hotel room the night before
- Speak out loud and time it
- You will find holes
- Your brain will think on it while you sleep



Getting advice

- Other people will find the gaps more easily than you
- Present to your colleagues
 - Ask them to be brutal
- Fix the holes
- Present to them again
- Remember every presentation you didn't like



Bad things to do

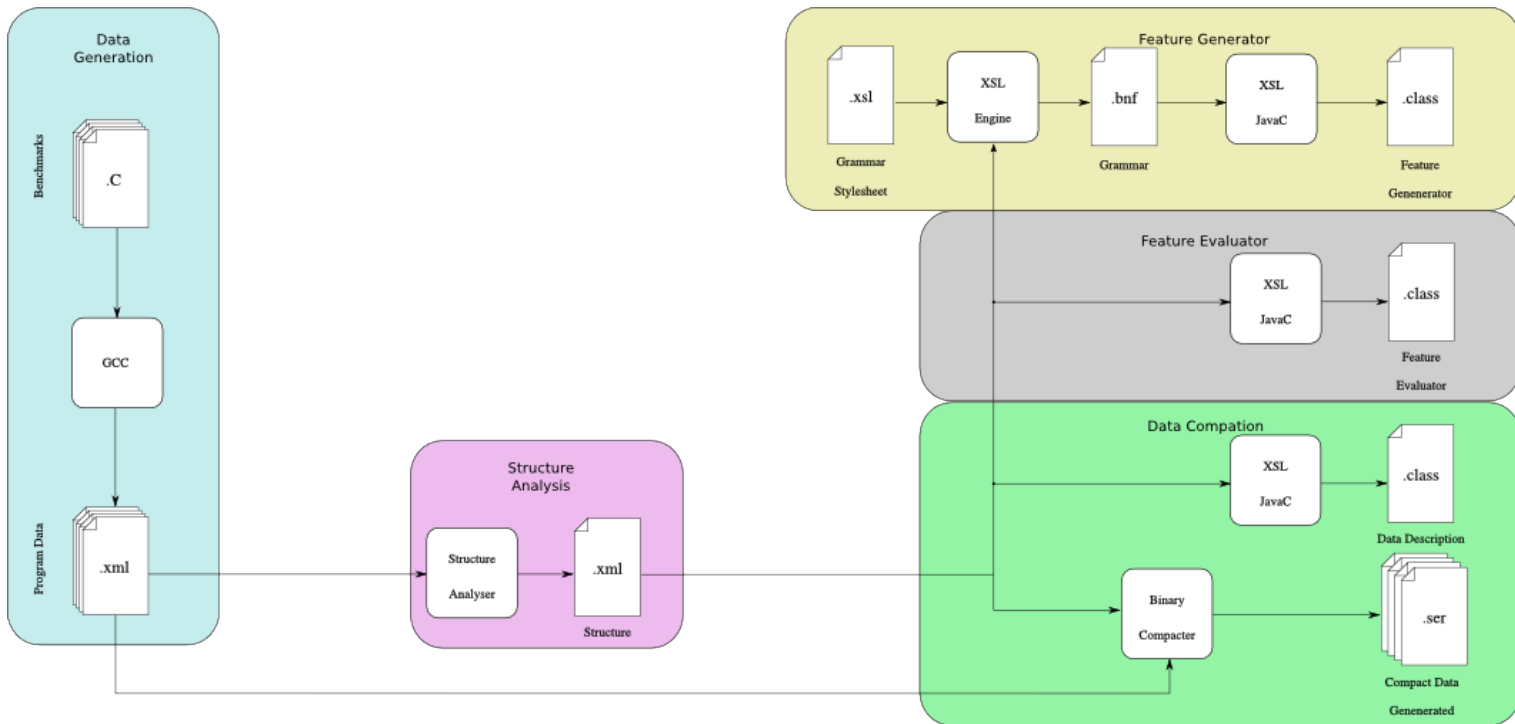
- Some things rarely work
 - But no hard and fast rules

Bad things to do

- It is usually bad if you read out every word of each bullet point of each slide.
- That way the audience doesn't really need you.
- They have probably read well ahead of you and are now bored.

Bad things to do

- Use tiny fonts
- If your audience can read this they're too close
- And if they can read this then they probably have binoculars
- Include illegible diagrams and graphs



Bad things to do

- Cram too much information in one slide
- People get weary reading one bullet point
- After another, forever, ad infinitum
- This is worse with some presentation programs
- That automatically reduce the font size
- When you need to add more which makes you
- Think it's ok.
- It's not ok.

Bad things to do

- Use long quotations

“More software projects have gone awry for lack of calendar time than for all other causes combined. Why is this cause of disaster so common? First, our techniques of estimating are poorly developed. More seriously, they reflect an unvoiced assumption which is quite untrue, i.e., that all will go well. Second, our estimating techniques fallaciously confuse effort with progress, hiding the assumption that men and months are interchangeable. Third, because we are uncertain of our estimates, software managers often lack the courteous stubbornness of Antoine's chef. Fourth, schedule progress is poorly monitored. Techniques proven and routine in other engineering disciplines are considered radical innovations in software engineering. Fifth, when schedule slippage is recognized, the natural (and traditional) response is to add manpower. Like dousing a fire with gasoline, this makes matters worse, much worse. More fire requires more gasoline, and thus begins a regenerative cycle which ends in disaster.”

Fred Brookes – The Mythical Man-Month

Bad things to do

- Use distracting backgrounds

Bad things to do

- Animations
- Just make it hard to follow
- The point of the slide

Bad things to do

- Put in equations

$$\min_{\mathbf{w}, b, \alpha} \left\{ \frac{1}{2} \|\mathbf{w}\|^2 - \sum_{i=1}^n \alpha_i [y_i (\mathbf{w} \cdot \mathbf{x}_i - b) - 1] \right\}$$

$$\tilde{L}(\alpha) = \sum_{i=1}^n \alpha_i - \frac{1}{2} \sum_{i,j} \alpha_i \alpha_j y_i y_j \mathbf{x}_i^T \mathbf{x}_j = \sum_{i=1}^n \alpha_i - \frac{1}{2} \sum_{i,j} \alpha_i \alpha_j y_i y_j k(\mathbf{x}_i, \mathbf{x}_j)$$

Unless this **is** the key result

- Latex users beware!

Bad things to do

- Put in code

```
bool AroundAdvice_init(
    AroundAdvice* self,
    ExtensionPoint* around,
    void ( *destructor )( AroundAdvice* self ),
    void ( *deletor )( AroundAdvice* self ),
    void /*T*/ ( *callback )( /* ... */ ),
    CallbackType callbackType,
    bool isSelfish
) {
    AroundExtensionPoint* point = ( AroundExtensionPoint* )around;
    assert( self != NULL );
    assert( callback );

    if( point && point->head && point->head->selfish ) {
        PluginManager_error( "Extension point %s already extended by se
            return FALSE;
    }

    self->point = around;
    self->destructor = destructor;
    self->deletor = deletor;
    self->callback = callback;
}
```

Unless your talk is about APIs, etc.

Bad things to do

- Put in related work - leave them in the paper

[HJL05] The invention of widgets

[ABC06] Widgets and the Curry-Howard isomorphism

[XYZ08] Widgets cure measles

- Forget to check for typos - distractting!

Bad things to do

- Structure slides telling you nothing

My Presentation

- Introduction
- Motivation
- My Idea
- Results
- Conclusion

Bad things to do

- "Questions?" Slide



- Leave the conclusion on display instead

Conclusion

- It's an advert - tell a story
- Enjoy it, relax
- Practice
- Be enthusiastic