TECHNISCHE UNIVERSITÄT DRESDEN

Fakulty of Computer Science Institute for Software and Multimedia Technology, Software Technology Group

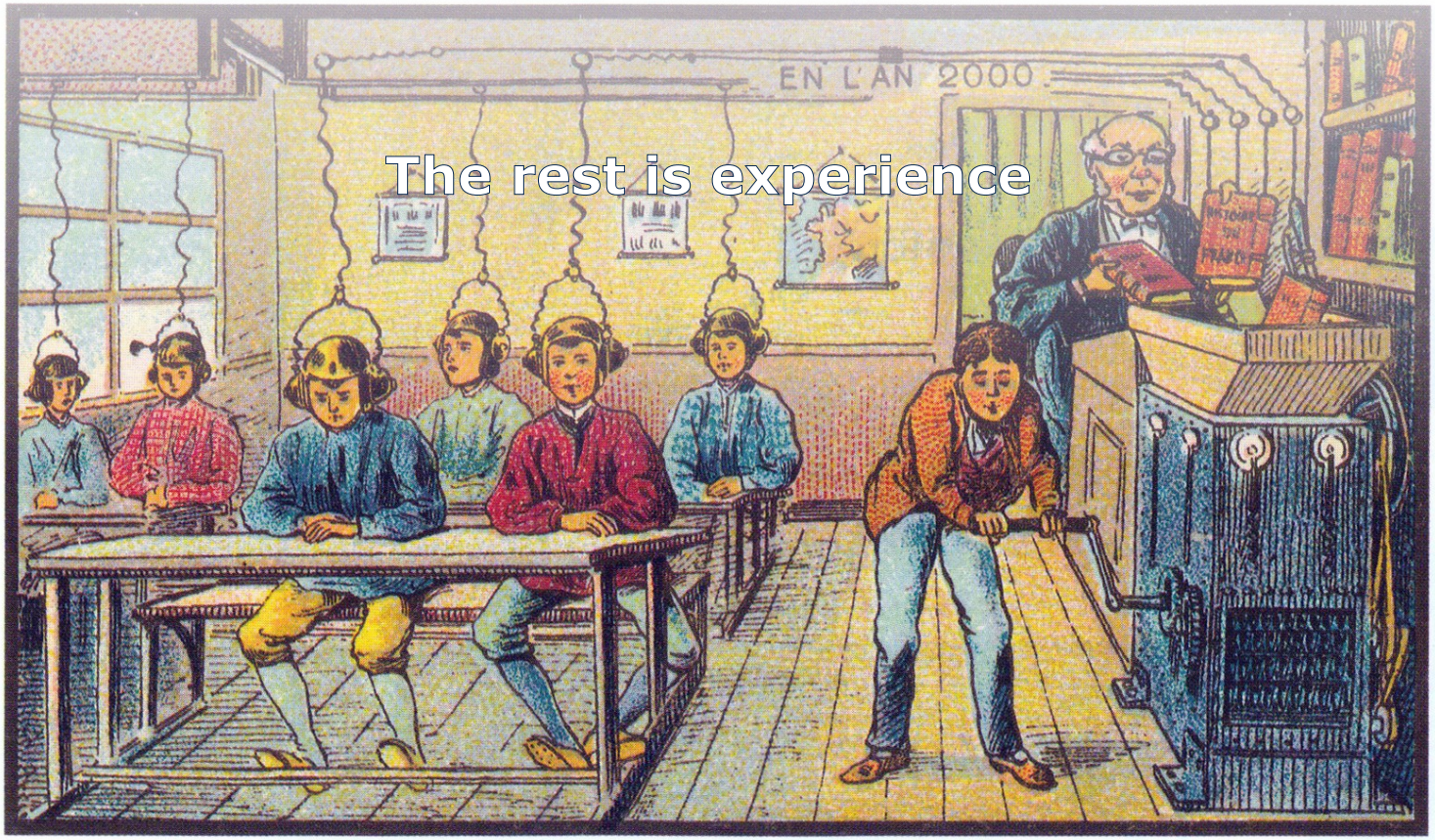
Petri Nets in Software Technologie

Scientific Presentations

Hauptseminar (SS 19)
Wednesday, 2. DS, APB/3105
Thomas Kühn (thomas.kuehn3@tu-dresden.de)

We learn … **by …**

painting — examining paintings
writing — reading articles
presenting — watching presentations



At School **France in XXI Century 19 Jhd.**, Wikimedia Commons, (Public Domain)

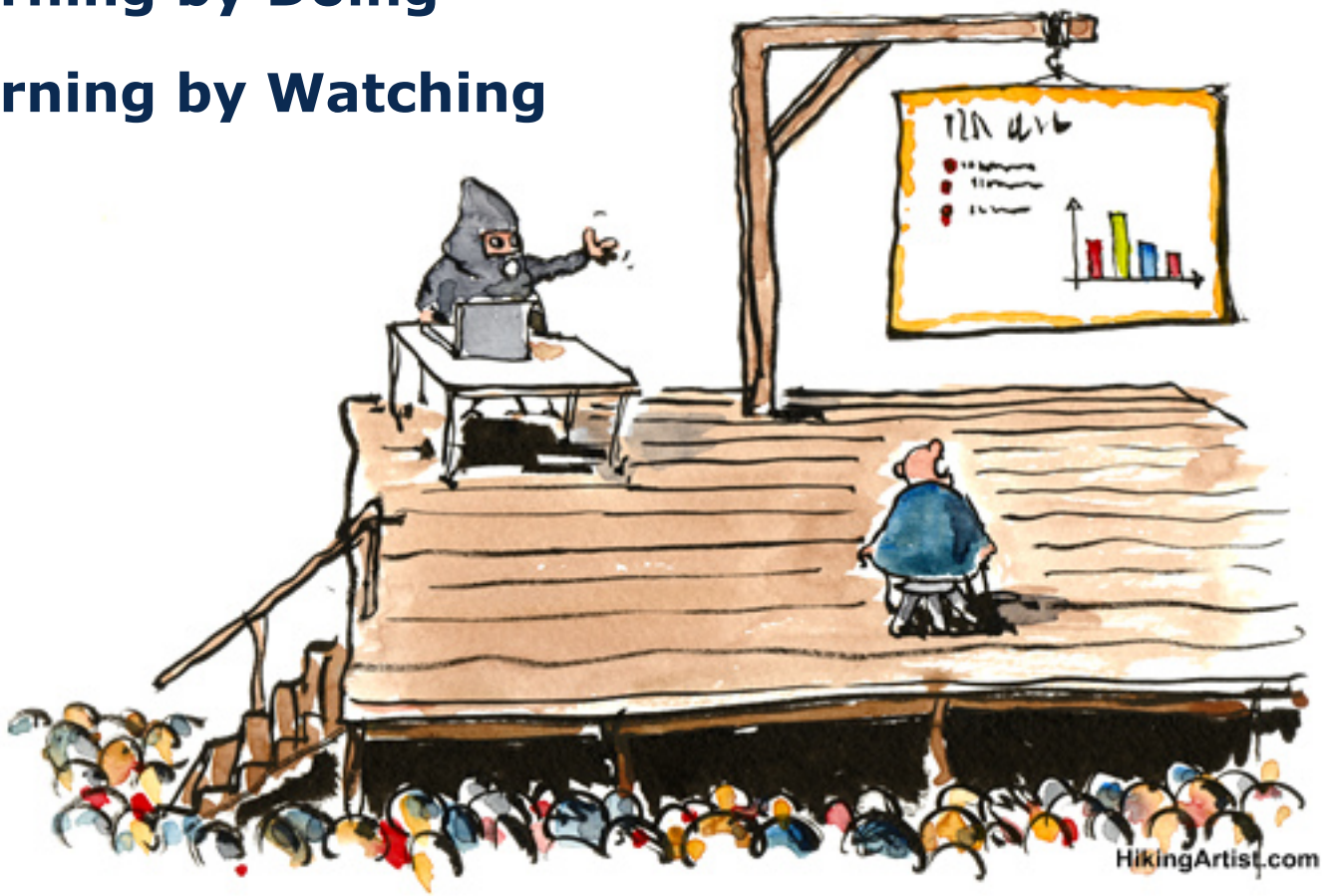
Outline

Beginners Guide

Scientific Presentations

Learning by Doing

Learning by Watching



Death-by-Presentation by Frits Ahlefeldt-Laurvig (http://www.flickr.com/photos/hikingartist/3515471358/)

Beginners Guide
Preparation

What is the goal of the presentation?

Why are you giving the presentation?

When will your presentation be held?

How will you support your statements?

Where will your presentation be held?

Who will be your audience?

– Rudyard Kipling, *I Keep Six Honest Serving Men ...*

Beginners Guide
Structuring

20% Motivation	80% Core Statements

- Every Presentation tells a story
- Continuous use of **one** running example
- Conclude by summarizing core statements
- Prefer a linear narrative

Rough Outline

- Introduction *(outline, motivation, example)*
- Background *(context, problems, history)*
- Core statement *(idea, solution, results)*
- End *(conclusion, outlook)*

"Story Grammar" *[Piesk1997]*

1. Problem / Importance	**Motivation**
• *Hero has unsolvable problem*	
2. Needs:	**Problems**
• *Hero lacks a "slice of heaven"*	
3. Wish:	**Goals**
• *Hero has a goal to strive for*	
4. Antagonist:	**State of the Art**
• *Antagonists pursue the same goal*	
5. Plan / weapon / tool:	**Solution**
• *Hero uses it to reach the goal*	
6. Battle:	**Evaluation**
• *Battle between hero and antagonists*	
7. Insight:	**Results**
• *Insight is gained after battle is won*	

DO NOT

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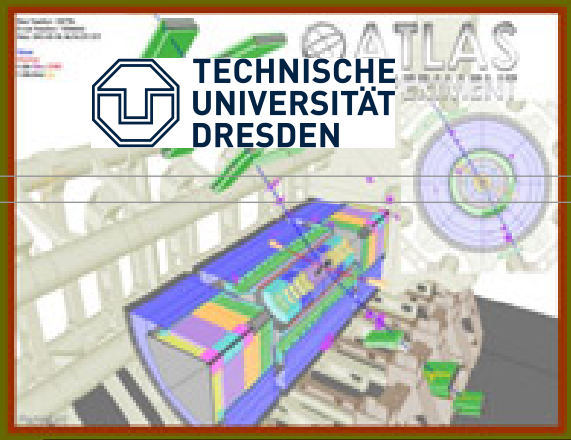
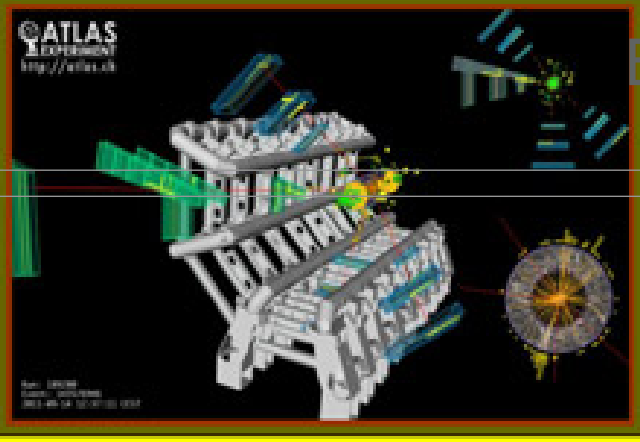
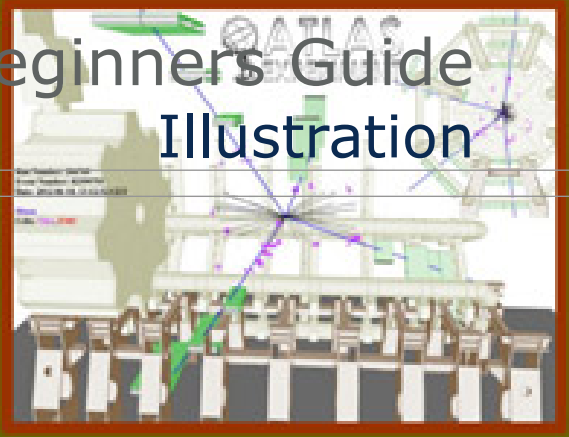


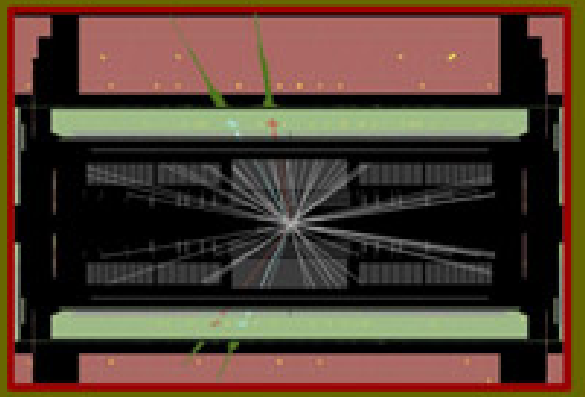


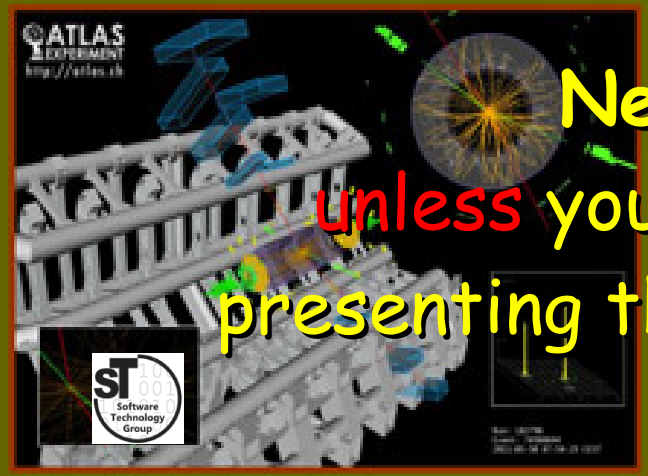


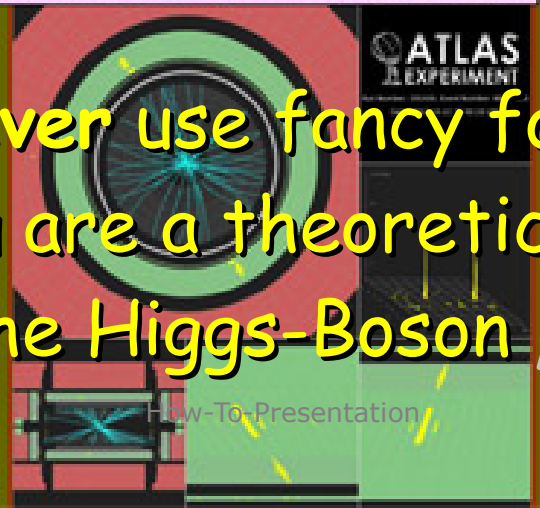
Status of Standard Model Higgs searches in ATLAS

Using the full datasets recorded in 2011 at $\sqrt{s}$= 7 TeV and 2012 at $\sqrt{s}$=8 TeV: up to 10.7 fb^{-1}

Fabiola Gianotti (CERN), representing the ATLAS Collaboration







Never use fancy fonts,
unless you are a theoretical physicist
presenting the Higgs-Boson *[Gianotti2012]*

Beginners Guide
Obvious Outline

1) Motivation
2) Concept
3) Implementation
4) Evaluation
5) Conclusion

DO

Beginners Guide
Illustration

- Short lists (max. 7 words)
- Use short, precise formulations
- Use clean templates (without decorations)
- Commit to one (sans serif) font
- Use (few) colors consistently

Beginners Guide
Illustration

- Sharp (high-resolution) images
- Use **bold**, *italic*, underline for highlighting
- Use figures to illustrate complex processes
- Use *animations/transition effects* only to explain complex relationships
- Present only significant information

- Practice, practice, practice
- Conceive precise formulations, metaphors, examples
- Especially, practice slide transitions
- Train self-control
  (facial expression, gestures, intonation, ...)
- Avoid useless filler words *(ehm, so, also, yes...)*
- Avoid long anecdotes, stick to the point
- Find ways to calm yourself

Beginners Guide
Summary

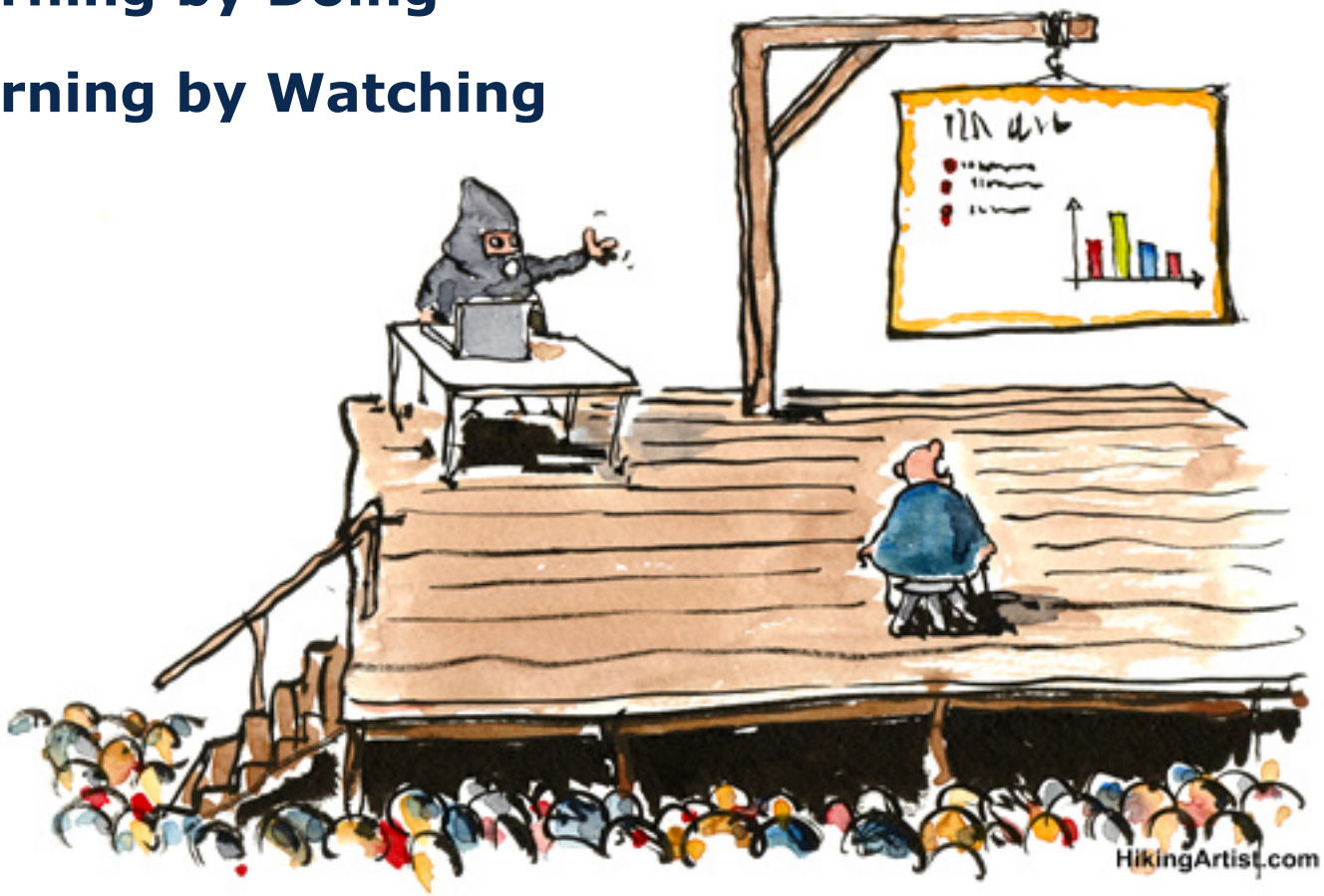
- In which context will you give your presentation?
  - Knowledge of your audience
  - Type of event
  - Goals of the event / your presentation
- What is the core statement of your presentation?
- What story do you tell?
- Which example do you use?
- Which illustrations will you choose?

Beginners Guide

Scientific Presentations

Learning by Doing

Learning by Watching



Death-by-Presentation by Frits Ahlefeldt-Laurvig (http://www.flickr.com/photos/hikingartist/3515471358/)

Figure 1: Alexander von Humboldt, Wikimedia Commons (Public Domain)

High Standards for Scientific Presentations

- Complex topics
- Fixed structure (outline)
- More information in less time
- Requires correct citations
- Depiction of
  - Tables,
  - Statistics, and
  - Mathematical formulae
- Professional audience

Scientific Presentations
Structure

- Introduction
  Motivation, scientific scope
- Problem Definition
  Problems, goals, success criteria
- Concept
  Idea, hypothesis, core statement, method
- Evaluation
  Qualitative or quantitative evaluation
- Related work
- Conclusion
  Scientific contributions, future work

Scientific Presentations
Use Templates

- Use a *Corporate Design*[1] templates, if available
  - *Predefined slide backgrounds*
  - *Predefined slide layout (may customize)*
  - *Predefined color scheme*
- Create your **own** prototypes
  - Refine the templates towards
    - Space-saving layout
    - Modified background (watermark)
    - Include slide numbers
  - Reuse of typical slides

    Title, author information, references, ...

1) http://tu-dresden.de/service/publizieren/cd/

Scientific Presentations
Correct Referencing

- List referenced literature at presentation's end
- Quotation:

  "Software is getting slower more rapidly than hardware becomes faster." – Niklaus Wirth [Wirth1995]
- Citation:

  Role-Object-Pattern [Bäumer1998]
- Footnote for web links:

  Eclipse[1] is a widely used Development Environment

  1) www.eclipse.org
- Subtitle for figures, tables, diagrams:
  - Pay attention to copyright licenses (Creative Commons)

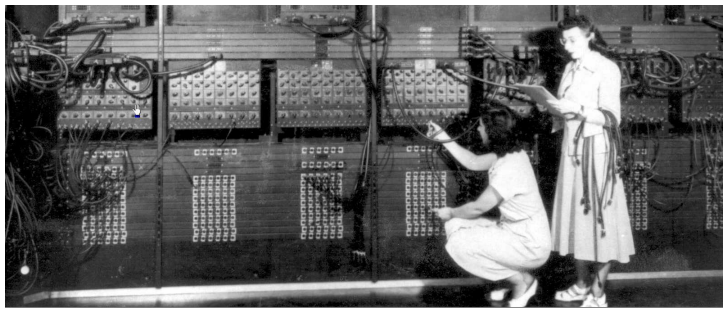


Figure 2: Programming of ENIAC [U. S. Army Photo]

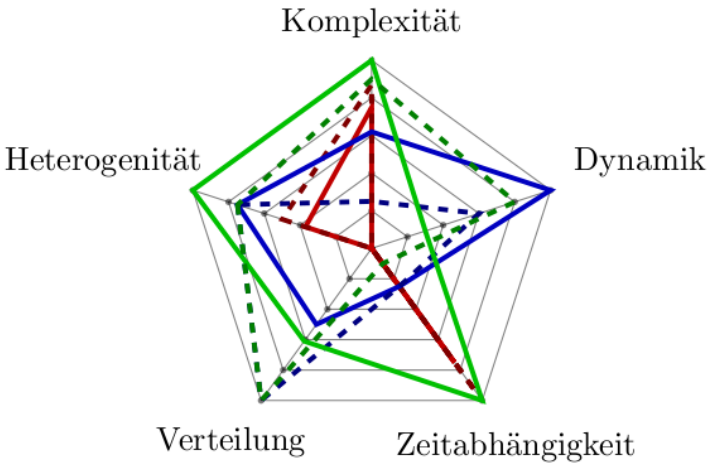


Figure 3: Radar chart *[Kühn2013]*

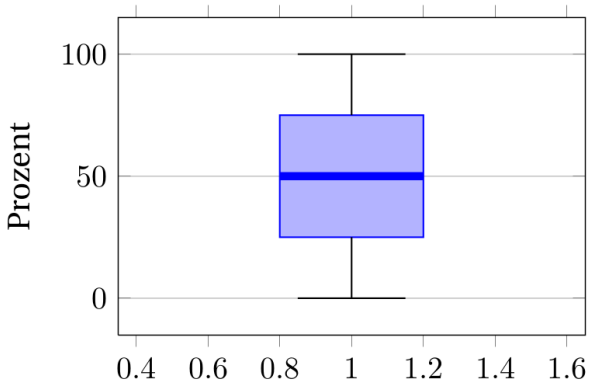


Figure 4: Example box plot

Qualitative Evaluation

- Tables unsuitable
- Focus on interesting details
- Derivation of analysis diagrams
  - Pie charts
  - Radar charts
  - …

Quantitative Evaluation

- Tables for small analyses
- Plots for larger analyses
  - Line chart
  - Box plots
  - …

Few Mathematical Formulae

- Simply use special characters

  card: (R → $N \times N$) ∪ (Rel → $N \times N \times N \times N$)

- Integrated formal editor

$$\sum_{m=3}^{n/2} \frac{1}{\ln m} \frac{1}{\ln(n-m)} \approx \frac{n}{2\ln^2 n}$$

Many Mathematical Formulae and Definitions

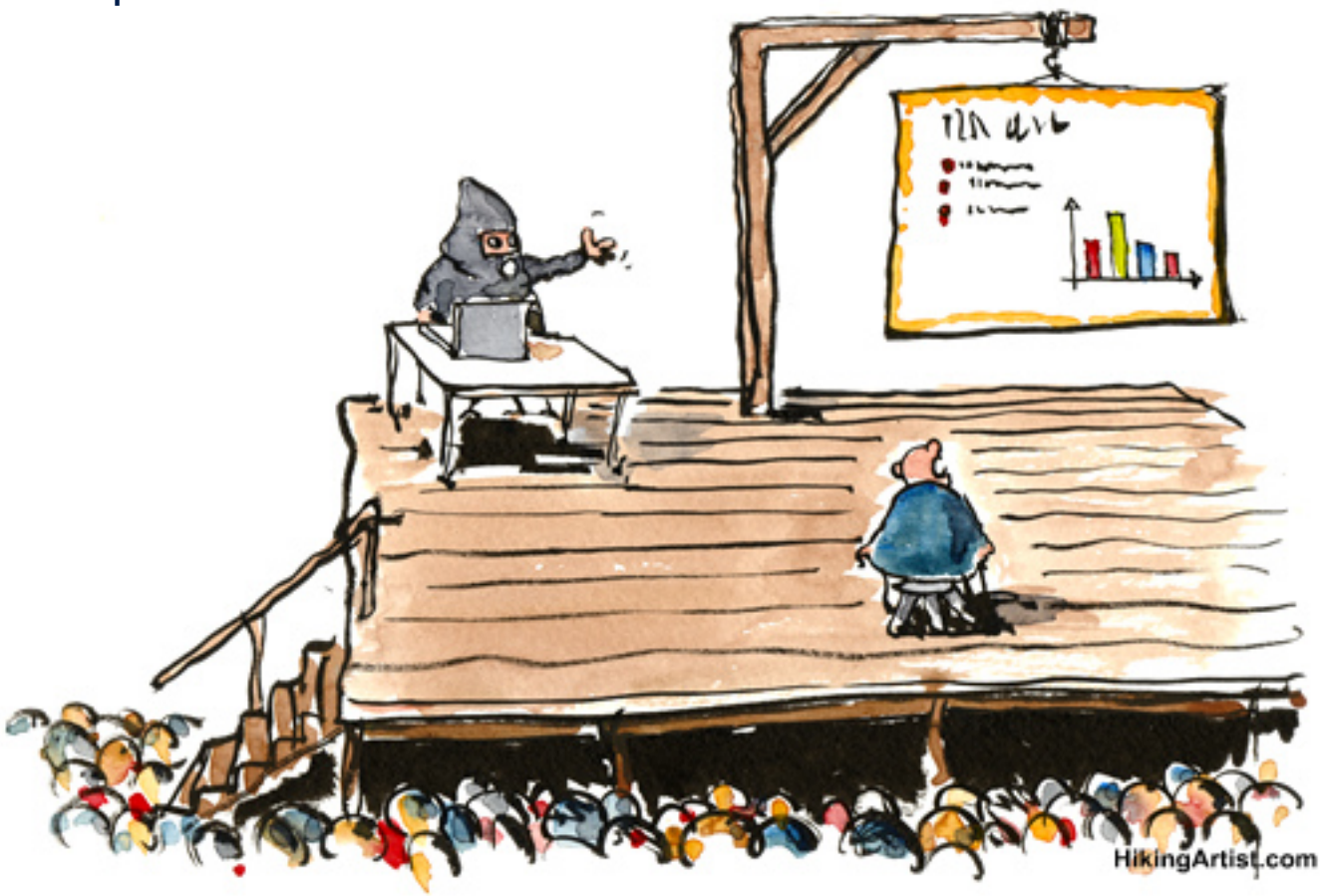
- Better use *LaTeX/Beamer* instead

Scientific Presentations
Summary

- Take knowledge of audience/type of event into account
- A good story and example is crucial
- Avoid overloading your presentation
- Focus only on important information/facts
- Every slide must answer a question
  (Who?, What?, Why?, How?, ...)
- Follow scientific practices and standards
  (Citations, Bibliography, List of references)
- Use suitable illustrations for complex statements

Task:

- Present 2-3 *unknown* slides
- Convince your audience
- Cope with the stress



Death-by-Presentation from Frits Ahlefeldt-Laurvig (http://www.flickr.com/photos/hikingartist/3515471358/)

Learning by Doing

Toyogeki Movie in Toyooka, Wikimedia Commons (GNU Free Documentation License)

Learning by Watching
The Good, the Bad, and the Ugly

Task:

- Why is a certain presenter good/bad?
- Who tells a story?
- Who designed the best slides?

Death-by-Presentation by Frits Ahlefeldt-Laurvig (http://www.flickr.com/photos/hikingartist/3515471358/)

TECHNISCHE UNIVERSITÄT DRESDEN

Lernen durch Betrachten
The Good, the Bad, and the Ugly

http://www.youtube.com/watch?v=xWFsdbP71ZA

https://www.youtube.com/watch?v=ucBssR7RFJc (My 2nd worst presentation)

http://cdn.media.ccc.de/congress/2013/mp4/30c3-5304-en-**CounterStrike**_h264-hq.mp4

http://cdn.media.ccc.de/congress/2013/mp4/30c3-5537-en-**Glass_Hacks**_h264-hq.mp4

Toyogeki Movie in Toyooka, Wikimedia Commons (GNU Free Documentation License)

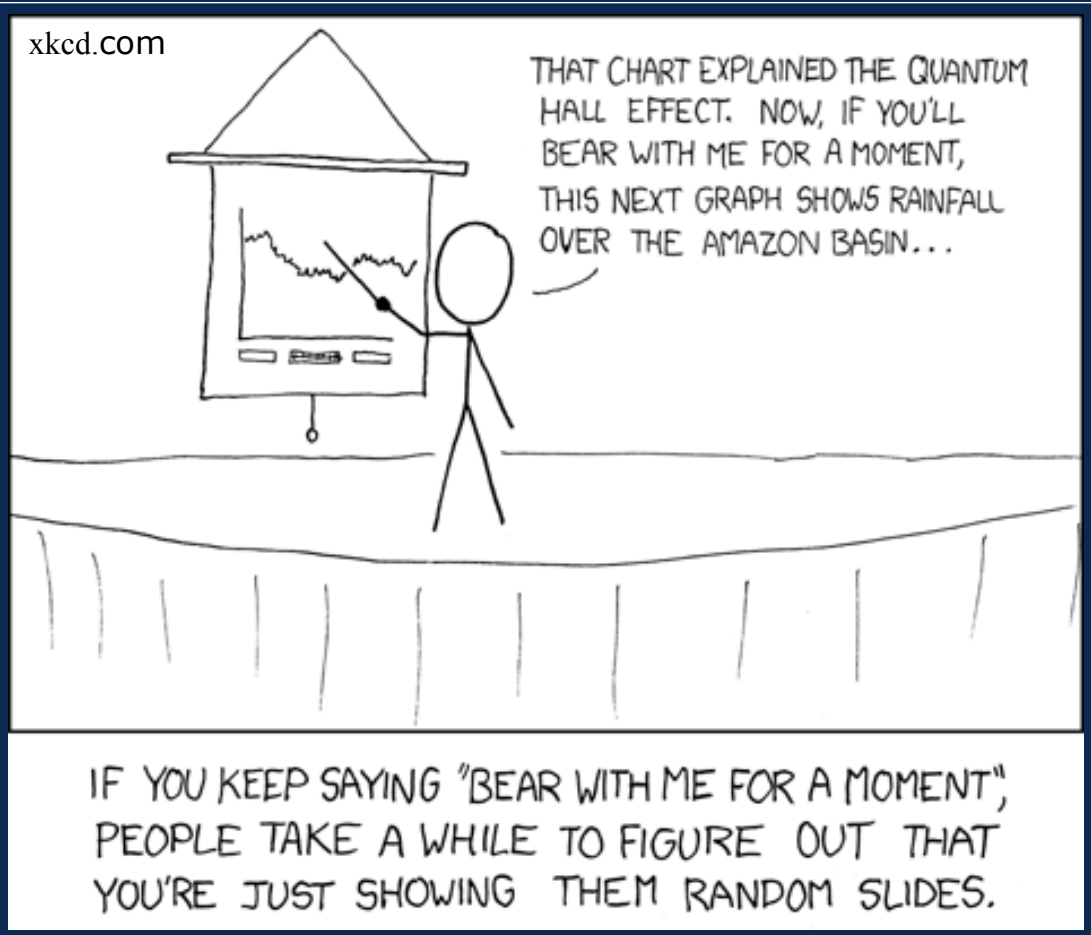
Disclaimer

This presentation is based on:

- **Academic Skills in Computer Science (AsiCS)**
  Sebastian Götz and Thomas Kühn
  Lecture in summer semester

- **Wissenschaftliches Arbeiten und Lerntechniken. Erfolgreich studieren – gewusst wie!**
  Christine Stickel-Wolf und Joachim Wolf
  Updated and revised edition (2009)

How To Do Scientific Presentations



End

References

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