

Giving a Presentation

15th January 2021

Robot Learning Lab

Albert-Ludwigs-Universität Freiburg



**UNI
FREIBURG**

With Every Presentation...

...you present yourself and your work

Outline

- The slides
 - Content
 - Layout
- The presentation
- Questions

The Slides

- Typically done long before the presentation
- and long enough to practice
- They are used to better convey the message
- Their purpose is not to allow you to read off what you want to say

Choosing a Proper Title is Hard

- The title of a slide often says what is on the slide
- You actually can do better: Use the title to convey a message
- The title should better tell the message of the slide.
- Choosing a Proper Title is hard

The Structure of Scientific Presentations is often Similar

1. Introduction and Motivation
 2. State of the Art
 3. Our Approach
 4. Results
 5. Conclusions and Future Work
- This/such a slide is contained in many presentations
 - Maybe it is better to leave it out if your presentation is short.

Introduction and Motivation

Describe

- the problem
- why it is relevant
- the open question
- in which way the approach you present gives an answer to this question

Why should people care about your work?

State of the Art

- **Mention relevant approaches** presented in the past.
- Tell in which way the approach presented in this paper goes **beyond the previous ones**.
- The art lies in finding the right balance when describing related work
- Say what the approaches do and what they solve (be friendly, make the authors happy!)
- Say in which way your approach is better (do not make the authors unhappy!)

The Approach

- This part of the presentation is **not intended to demonstrate your skills**
- It is intended to **let the audience understand how your approach works**
- Provide the audience with the **technical details** and the **intuition**
- Use **graphics and/or examples** to explain technical details

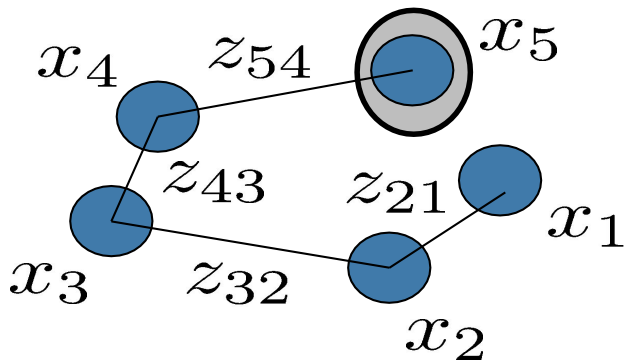
Example: Graph-based SLAM

- Let $\mathcal{G} = (\mathbf{x}, \mathbf{z})$ be a graph where $\mathbf{x} = \{x_1, \dots, x_n\}$ is a set of poses and $\mathbf{z} = \{z_{ji}\}$ is a set of pairwise observations of poses j and i , where Ω_{ji} is the corresponding measurement uncertainty.
- Furthermore let e_{ji} be the errors between the pairwise observations x_{ji} and the relative poses z_{ji} .
- Goal: Find $\mathbf{x}^* = \underset{\mathbf{x}}{\operatorname{argmin}} \sum_{ji} e_{ji}^T \Omega_{ji} e_{ji}$

Maybe Better: Graphical Example

Given:

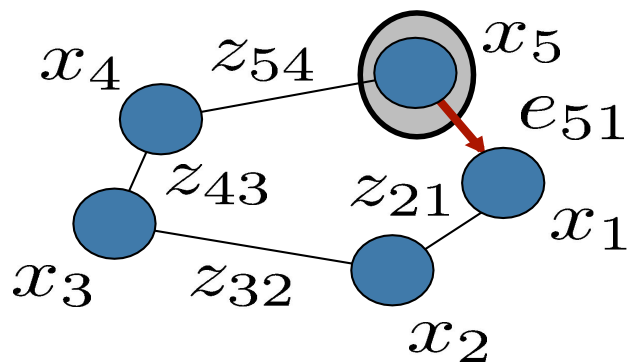
- Poses $\mathbf{x} = \{x_1, \dots, x_n\}$
- Pairwise observations: $\mathbf{z} = \{z_{ji}\}$
- Measurement uncertainty Ω_{ji}



Maybe Better: Graphical Example

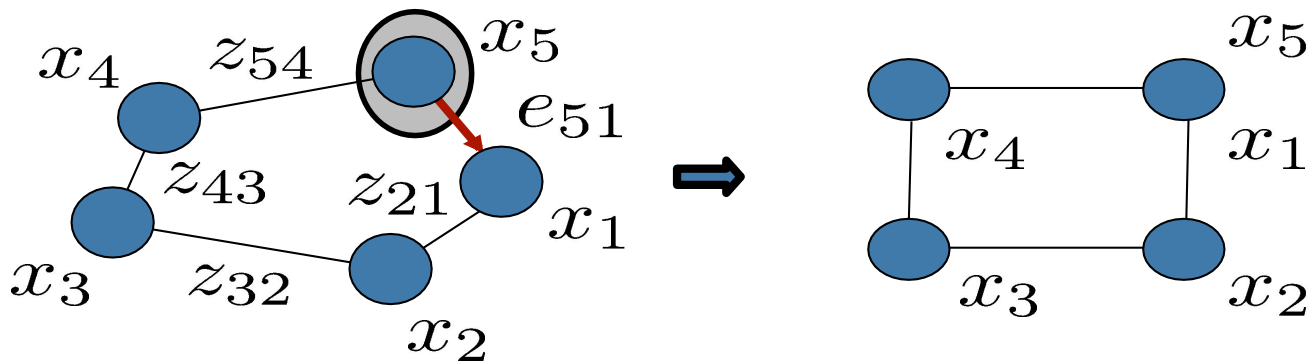
Given:

- Additionally we observe that $x_5 = x_1$
- This introduces the error: e_{51}



Maybe Better: Graphical Example

- More generally, we have an error e_{ji} for every pairwise observation z_{ji} given the positions \mathbf{x} of the nodes
- Goal: Find $\mathbf{x}^* = \operatorname{argmin}_{\mathbf{x}} \sum_{ji} e_{ji}^T \Omega_{ji} e_{ji}$



Algorithms are Hard to Explain

Algorithm 1 Coverage(S)

```
1:  $C \leftarrow S$  //Set the current node to  $S$ 
2:  $\mathcal{P}_{aux} \leftarrow C$ 
3:  $\mathcal{P} \leftarrow \emptyset$ 
4: while 1
5:    $\forall n \in \mathcal{P}_{aux}, m \in \mathcal{N}, \|c_n - c_m\| < M_R \cdot e_{cell}$ 
     visited( $m$ ) = 1
6:    $\forall n \in \mathcal{P}_{aux}, m \in \mathcal{N}, \|c_n - c_m\| < 2M_R \cdot e_{cell}$ 
     overlapped( $m$ ) = 1
7:    $\mathcal{N}_C \leftarrow \{n \in \mathcal{N} \mid \|c_n - c_C\|_\infty = (2M_R + 1) \cdot e_{cell}$ 
     and overlapped( $n$ ) = 0 and  $g(n) < \infty\}$ 
8:   if  $\mathcal{N}_C \neq \emptyset$ 
9:     find  $M \in \mathcal{N}_C$  with minimal  $g$ 
10:  else
11:    D*( $C$ ) and stop at visited( $M$ ) = 0
     or  $\|c_M - c_o\|_\infty = e_{cell}, o \in \mathcal{O}$  and  $\exists n,$ 
     visited( $n$ ) = 0,  $\|c_M - c_n\| < M_R \cdot e_{cell}$ 
12:    if no such node  $M$  exists
13:      return  $\mathcal{P}$ 
14:    end
15:  end
16:   $\mathcal{P}_{aux} \leftarrow \mathcal{P}_{aux}(C, M)$ 
17:   $C \leftarrow M$  //Set the new current node
18:   $\mathcal{P} \leftarrow \mathcal{P} \cup \mathcal{P}_{aux}$ 
19: end
```

Better...

- Describe the idea
- Give examples to describe how it works
- Design the examples so that all (relevant) features of the algorithms can be explained
- Once you are done with the examples, the audience should have an idea how it works

The Results

- The results should **back up your claims**
- With them you **demonstrate** that your approach has the desired **features**.
- They should clearly **demonstrate** that the approach you present is **better than previous ones**.

The Conclusions and Future Work

- Again **describe the contribution** of this this paper
- A good first sentence starts with “We presented a novel approach to ...”
- Tell the **key idea of the work**
- Maybe talk about limitations that might lead to future work

Seminar Talks about Other People's Work

- You might add slides describing your opinion about the paper.
- Tell what you regard as positive aspects
- Tell which potential improvements you see
- What would you have done differently?

Text

- Use sans serif fonts instead of serif fonts
 - Use
 - dark text on light background (easy to read)
 - light text on dark background (not so easy to read)
- Left-aligned text is easier to read
than centered text
- Avoid putting too much onto one slide (avoid clutter)

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Text Color

- Check readability
- Check readability
- Check readability
- Check readability
- Red and green are hard to distinguish for a large fraction of the population
- Check readability, maybe ask others!

Text Size

- Make sure that everyone can read the text (32Pt)
- Make sure that everyone can read the text (28Pt)
- Make sure that everyone can read the text (24Pt)
- Make sure that everyone can read the text (20Pt)
- Make sure that everyone can read the text (18 Pt)
- Make sure that everyone can read the text (16 Pt)
- Make sure that everyone can read the text (14 Pt)
- Make sure that everyone can read the text (12 Pt)
- The caption should not be smaller than the text on the slide

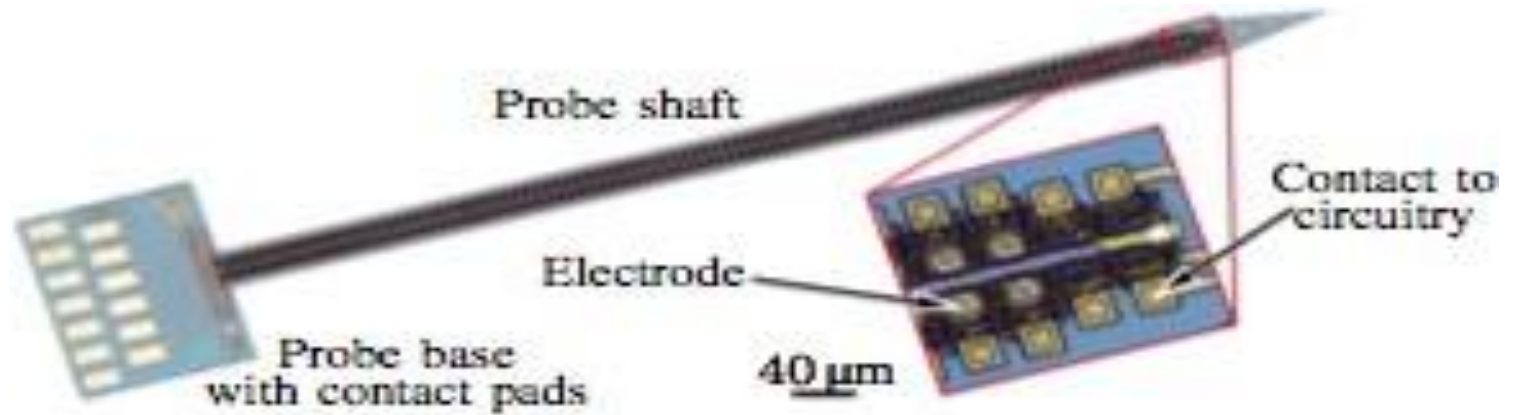
Abbreviations

- Abbreviations reduce the length of the text
- They **make you appear like an insider** while they **likely make other feel like outsiders**
- Avoid abbreviations (unless they are very, very common)
- Especially avoid uncommon abbreviations in titles

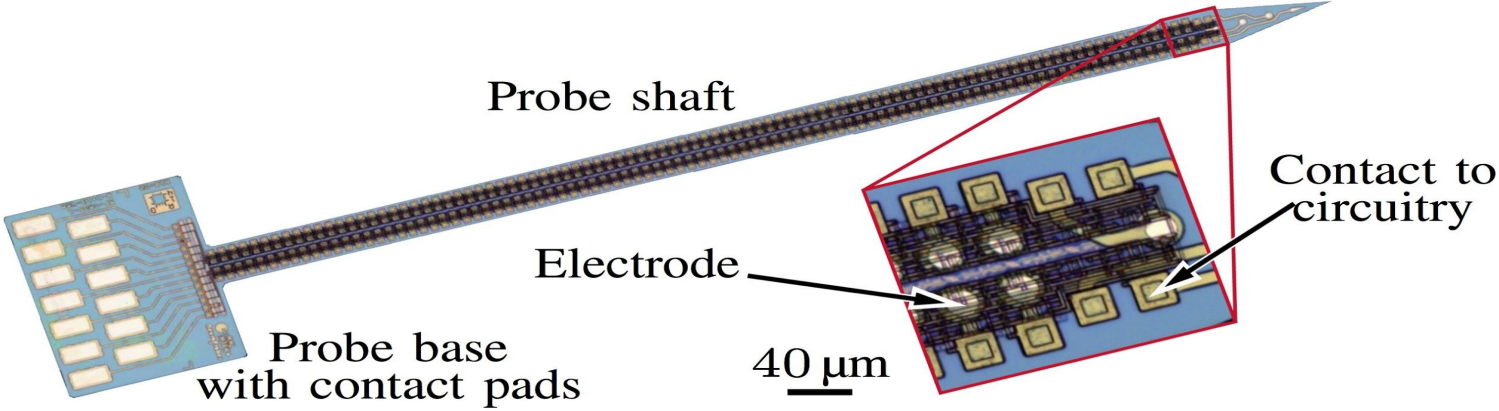
Figures

- Prefer **vector graphics** over images
- When grabbing an image from the source paper, make sure you do this at the highest resolution
- Enlarge the picture as much as possible before grabbing it
- When you can **see the individual pixels,**
think about redrawing the figure!
- To check, attach your computer to an LCD monitor and check the quality by going close to the screen.

A Low Resolution Figure



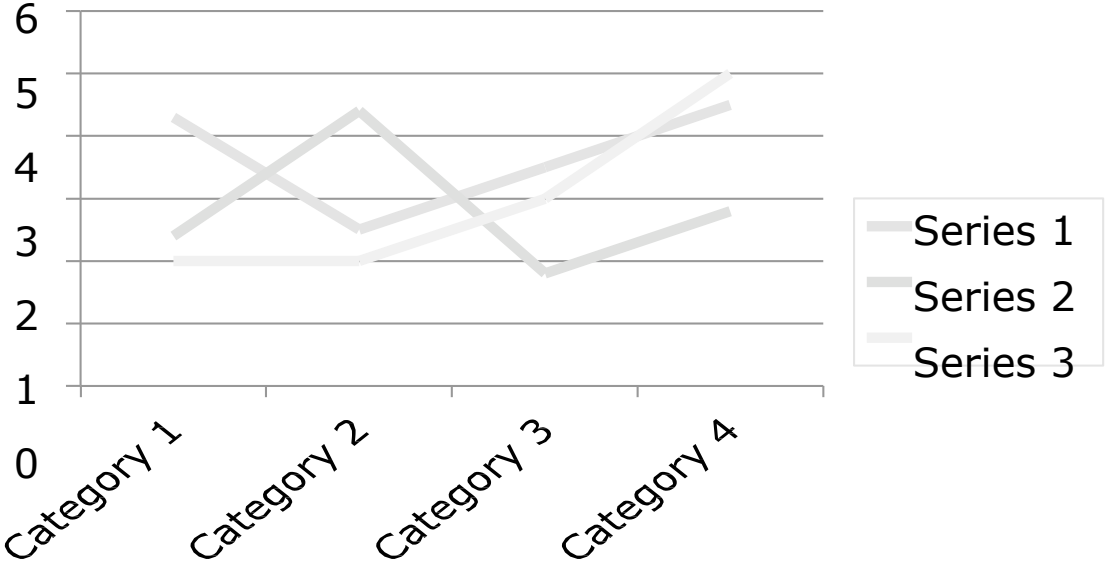
Higher Resolution is better!



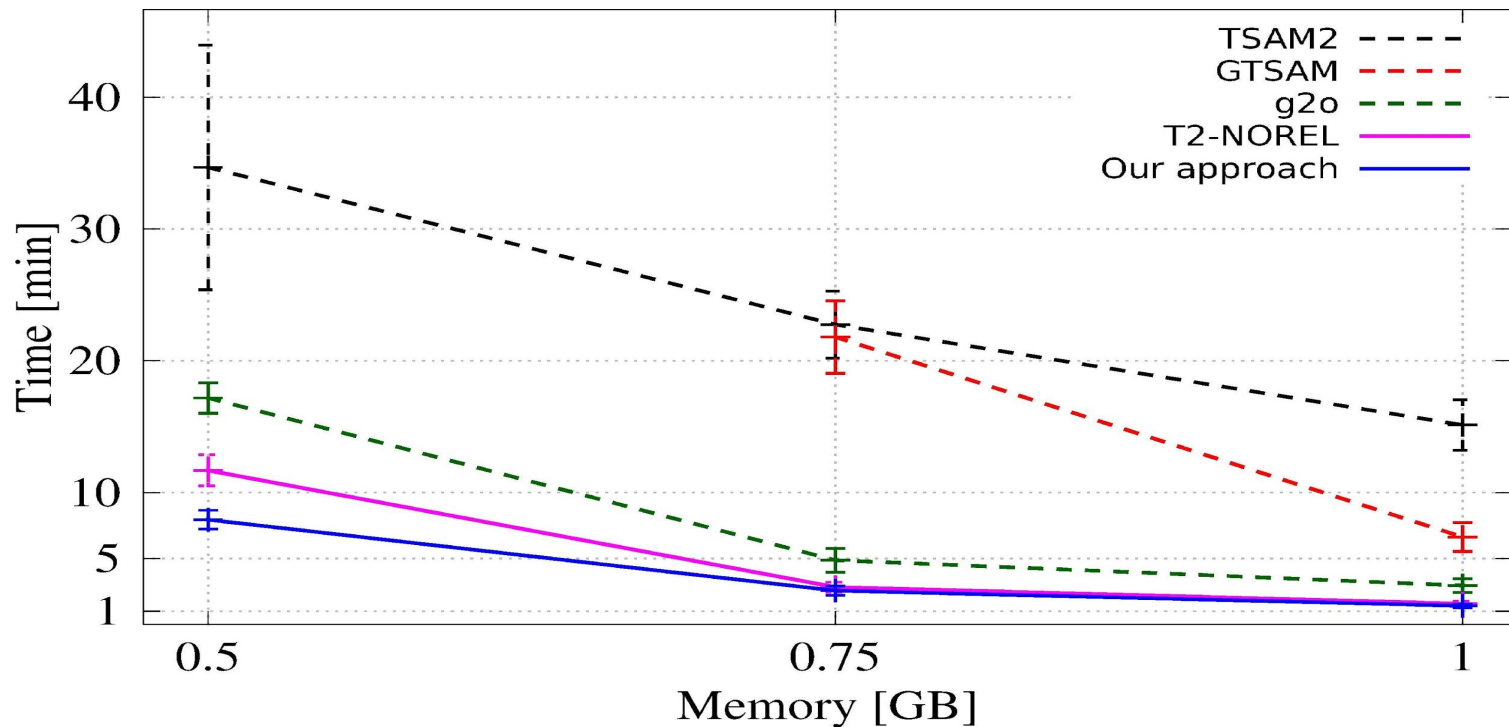
Plots

- Use colors that can easily be distinguished
- Use patterns that can easily be distinguished
- Order the legend according to the functions
- Make them high resolution
- Create your own one if needed

Negative Example Plot



Properly use Line Styles, Colors and Alignments!



Animations

- Useful to **explain content**
- or to **illustrate processes**

- and not to entertain the audience
- Avoid line after line text-animations
- Often animations are even distracting
- Do not demonstrate that you know every feature of the presentation tool!

Line after Line Animations

Every technical presentation has the following outline:

1. Motivation
2. Outline of the talk
3. State of the art
4. The new method
5. Experimental results
6. Conclusions

The Motivation

- What is the problem?
- Why is it relevant?
- What has been done thus far?
- What is the key idea of the approach presented in the paper?
- In which way do the experiments demonstrate that it provides a better solution to the problem?

- Simply avoid custom animations!

Similar Case in LaTeX Beamer

- What is the problem?
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Spell Checking

- Your computer can do spell checking for you:
Use it!
- Always set the language of the slide to the language that you are using

Benutzen Sie die Rechtschreibprüfung!
Benutzen Sie die Rechtschreibprüfung!

$\sum_{i=1 \dots n} i = n * (n + 1) / 2$ Typesetting Formulas

- In-text:
- Equation Editor:

$$\sum i =$$

$$\sum_{i=1}^n \frac{n * (n + 1)}{2}$$

- TeXPoint:

$$\sum_{i=1}^n i = \frac{n * (n + 1)}{2}$$

Inline Equations

- Easy to type
 - Always aligned with text
 - Float with text
-
- Restricted
 - Very few symbols available
 - Hard to align elements (equation symbol)

Equation Editor

- Relatively easy
 - Graphical interface
 - High flexibility
 - Nicer
-
- Each equation is an individual object
 - They do not float with text
 - Nice but not absolutely nice

TeXPoint

- Full LaTeX flexibility
 - Equations can be pasted from LaTeX- sources
 - The nicest equations
-
- Each equation is an individual object
 - They do not float with text
 - Harder to learn
 - Text interface

Important Aspects to Check

- Set the **language of the slides to the language of the presentation**
- **Spell** your slides
- **Check whether videos run** on a different computer
- and when Computer is attached to LCD Display
- Friendly video codecs are
 - MP4 with H.264 standard settings or
 - MS RLE encoding for animations

Use Consistent Colors & Shapes

- Think about the colors and shapes that you want and
- stick with them.

Your Presentation

- Plan it
- Practice it
- Time it
- Think about how to deal with interrupting questions
- Practice transitions between slides

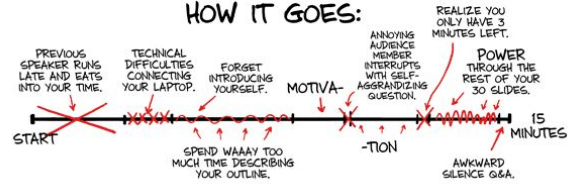
- Keep in mind: This is your show.
- Optimize it!

YOUR CONFERENCE PRESENTATION

HOW YOU PLANNED IT:



HOW IT GOES:



Connecting your Laptop

- Check if your laptop works before the talk
- Are the colors OK?
- Are the videos visible on both screens?
- Do not boot your computer in front of the audience (use suspend to RAM)
- Better do not close the lid before connecting your laptop
- Check the entire presentation (esp. videos) when you have to give it on a computer different from yours

The Presentation Mode

15:56

Swap Displays Tips Exit Show

The screenshot shows a presentation slide titled "The Presentation Mode". The slide content includes a smaller version of the slide on the left and a notes area on the right. The notes area contains the following text: "The Presentation Mode is a Great Tool", "It allows you to", "put something into the notes that is not on the slides but that you want to say, e.g. the first sentence for every slide", "let's you check, where you should be according to the timing", "lets you make a proper transition to the next slide.", and "Position the computer so that you can see its screen and read the notes!". Below the slide content, there is a timer showing "Elapsed 0:00:00" and a "Click to add meeting notes" button. At the bottom of the slide, there are two text boxes: "The presentation mode is a great tool as it allows you to see the content of the slide, elapsed time, notes, and the next slide!" and "Click to add meeting notes".

The Presentation Mode is a Great Tool

It allows you to

- put something into the notes that is not on the slides but that you want to say, e.g. the first sentence for every slide
- let's you check where you should be according to the timing
- lets you make a proper transition to the next slide.

Position the computer so that you can see its screen and read the notes!

Elapsed 0:00:00

The presentation mode is a great tool as it allows you to see the content of the slide, elapsed time, notes, and the next slide!

Click to add meeting notes

The Presentation Mode is a Great Tool

It allows you to

- put **aspects you want to convey** or an introductory sentence **into the notes of each slide**
- lets you **check** where you should be according to the **timing**
- lets you make a **proper transition** to the next slide.

Position the computer so that you can see its screen and read the notes!

Laser Pointer

- Might help you to **point at things**
- or to **emphasize aspects**
- **Hold the laser pointer in both hands** if the laser point **jitters**
- Not everything needs to be pointed at
- **Do not point at the audience,**
- Start and stop the laser properly
- **Familiarize yourself with the buttons**
- and the other features (timer)

Laser Pointer Gestures

- Underline



- Circle



- Point at 

Speaking (1)

- **Speak up** to make sure that everyone can hear you.
- If there is a **microphone, speak into** it!
- **Do not lower your voice** simply because there is a microphone
- If you can **hear your voice from the speakers**, the audience does as well
- If you cannot hear it, the audience will probably also not be able to hear it (and you)

Speaking (2)

- Avoid dialect
- Avoid idioms
- Avoid repetitions (look for alternatives or synonyms if you discover it)
- Avoid hesitation vowels like “ahem”, “uh”, “well”, “yes”, “OK”, ...

How to Move and Behave?

- Establish contact to the audience
- Do not solely focus the computer screen or the screen
- Do not look at the ground or into a corner
- Avoid siding (try to look at everyone)

Questions / Interruptions?

- Think positive!
- Questions are good and show that people are interested
- Try to repeat the question to make clear that you understood it properly
- If you cannot answer a question, be honest about it and do not say random words
- If answering would take too long or would go too far away from the talk, suggest to take the discussion offline
- Do not worry when someone falls asleep

Time Limits

- Test the duration of your presentation beforehand
- Keep a timer running

Virtual Presentations

- Check your camera & positioning beforehand: central, lightning
- Be aware of your background
- Decide if you prefer to sit or stand
- You won't see your audience. Remain confident about your presentation
- Be familiar with the software: how to share the (correct) screen, enter presentation mode
- If expect that you will need to drink, prepare a glass of water

Summary

- A talk is a unique opportunity to present yourself
- Prepare it carefully
- Practice it extensively
- There is no reason to be late with your presentation
- There is no reason not to be prepared

Thank you for your attention!

This slide appears in almost every talk
but actually is superfluous.