

Seminar

Current Works in Computer Vision

Blockseminar

Deep Learning for Biomedical Image Analysis

About this seminar
Paper assignments
How to give a good presentation
Good scientific behavior

- What will you learn in this course?
 - Reading and understanding current research papers
 - Exploring the literature
 - Giving a good oral presentation
 - Discussing a research work or a research problem
 - Latest stuff on computer vision and deep learning
- Requirements:
 - First experience in giving a presentation (e.g. Proseminar, Bachelor defense)
 - Recommended: at least one related course (e.g. Kursvorlesung)
 - Scientific interest in Computer Vision
- Your duties:
 1. Read all the presented research papers and answer some questions
 2. Dig into one particular research paper and present it in the class
 3. Take part in a lively discussion about each paper

1. Written summary of each paper

- Goal: make sure that everyone has read the paper
- We will ask some general questions about the paper
- You give some concise answers in a written summary
- Length: less than half a page
- Must be sent to the advisor responsible for this paper at least one day before the talk
- Bad summaries will be rejected
- 1 missing/late summary or rejection at maximum or you won't pass

2. The paper you present

- Choose one paper that you will present
- Read this paper **and understand it**
- All papers are very recent research papers
 - they assume that you know the background
 - you are responsible for finding additional information
- Prepare the outline of your talk as a written document (~2 pages)
 - What you will present and in which order
 - Make sure you present the background as well!
 - What tools could be beneficial to make your audience understand better (images, videos, demos)
 - Document must be submitted **at least 2 weeks before your presentation**
 - Meeting with your advisor

- Prepare the slides of your talk
 - Fill your developed structure with actual slides
 - Make sure your talk will be comprehensible
 - Make sure you understand what you are talking about (otherwise skip details)
 - Prepare some text what you will say in each slide
 - Make sure you will stay within the time limit (35-40 minutes)
 - Submit your slides **at least one week before your talk**
 - Meeting with your advisor
- Make changes to your slides (as discussed with your advisor)
- Practice your talk (important!)
- Present
- Submit your final slides and get feedback from your advisor

- We want a nice scientific discussion about each paper
 - Requires active participation, not just listening
- What's to be discussed (examples):
 - What is still unclear? (might not be the fault of the presenter but the paper)
 - What are the highlights of the paper?
 - What are (possibly hidden) shortcomings of the approach?
 - Are there better alternatives?
 - Which successive work could make sense?

1. 7 places for the seminar within the semester
 2. 8 places for the blockseminar
- Fill in your preferences in the list
 - Register for the seminar(s) this week
 - Decide for or against a seminar next week
 - Be fair: only take a place if you really take the course.
No jumping off after next week!
 - Presentation dates will be fixed after we assigned the papers
 - Blockseminar will be after the lecturing period

Questions about
the seminars?

Communication is hard work.

The work can be done either on the side of the sender or on the side of the receiver.

- Why it is important:
 - You will have to present all the time in the future (academia and industry)
 - Quality of your presentation decisive for achieving your goals:
 - Can I convince them to fund my favorite project
 - ...to give me the additional resources I need
 - ...to build upon my scientific work
 - ...to give me the job
- What is important:
 - The key message(s) should be transported to everybody
 - Your audience must understand
 - Your arguments should be convincing
- 7 rules to achieve this...

- Never lose the audience
→ Present coarse-to-fine
- First the background and the main message must be clear
 - What is the problem?
 - What is the key idea?
 - What is different from previous works?
- Mixed audience:
Go into detail only step by step
- Have a clear thread
 - Transitions are critical: will the audience be able to follow your thoughts?
 - If there are natural breaks, clearly mark them as such
 - Don't forget a concise conclusion/summary; end with "Thank you"
- Choose meaningful titles on all your slides



- Slides with a lot of text are hard to follow
- Try to remove as much text as possible, use images and examples instead

Image
Processing

Ambiguities resolved by context

- Ambiguities appear because the resolution in images is not good enough to distinguish small objects.
- To resolve ambiguities, the context in an image is very important.
- The context can increase the probability that the structure is indeed a certain object.
- This can of course be wrong, but by optimizing the global context of all structures in a scene, the overall scene interpretation is usually correct.
- It is much better than independent decisions purely based on the insufficient data.
- This should not be confused with replacing the data by prior assumptions if there is enough data to do the job.

© 2007-2010 Thomas Brox

30

Image
Processing

Ambiguities resolved by context

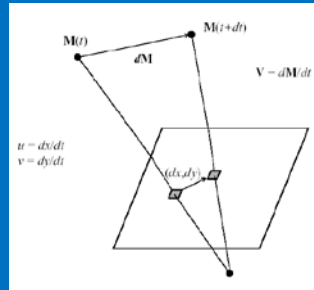


© 2007-2010 Thomas Brox

22

- Can you read this text?
- Also from the back? Remember, the contrast and resolution of your laptop is usually much better than that of the projector

- Sometimes the font size is too tiny



- Sans-serif fonts are easier to read from the back than serif-fonts

Also still quite common is yellow text on white ground

You see this even more often in graphs

Mak sure their are no typos in you slides; it's so unprofessional und unnecessary

Size up figures to use the whole area of the slide. A slide does not need a frame.

- Prepare the text that you want to say, do not try to improvise!
- Speak your talk loudly without reading your prepared text (multiple times)
- Always getting stuck at the same point?
→ change this point
- Watch your timing
 - Slowly read the text you prepared (loudly)
→ good estimate of your timing
 - Practice until you stay within your time limit
- Control your voice
 - Do not speak too fast
 - Emphasize words or parts of sentences with your voice
 - Speak loud enough
 - Use silence to emphasize things



- Prepare and test your equipment before the talk (if possible)
- Checklist:
 - Does your laptop work properly with the projector?
 - Do you have the right adapter?
 - Do all videos show properly?
 - Internet connection switched off?
 - Desktop free of too personal items?
 - Enough battery or laptop plugged in?
- Proper use of a laser pointer



"For God's sake, Edwards. Put the laser pointer away."

- Keep eye contact with your audience; don't turn your back
- But do not wonder what they might think of your presentation!
(now it's too late)
- Breathe normally
- Answering questions:
 - First listen to the whole question carefully; don't interrupt
 - Think about how you can best answer this question before you answer it
 - Give short and precise answers

- You cannot follow someone's talk?
 - You are totally bored?
 - You are irritated by a certain behavior of the presenter?
-
- Analyze what the presenter is doing wrong
 - Make sure you do not make the same mistakes

Questions about
presenting?

1. Never present other people's work as your own
 - Never copy-paste without quotation marks
(can be critical even when copying from your own work → self-plagiarism)
 - Cite the original author whenever one could think it was your work
(e.g. illustrations, ideas, code)
 - Clearly mention the material you used for your work
(e.g. code, data, papers; if unpublished material, ask before you use it)
 - Say explicitly what is your contribution
2. Never report false scientific results
 - Do not fake data to get the results you want (of course!)
 - Avoid situations that could easily lead to false results
 - Document what you did
 - Make sure comparisons are fair
 - Double check if there is a mistake particularly when results are surprisingly good
 - This holds for this seminar, but also for reports, theses, papers, grant proposals, interviews, personal communication



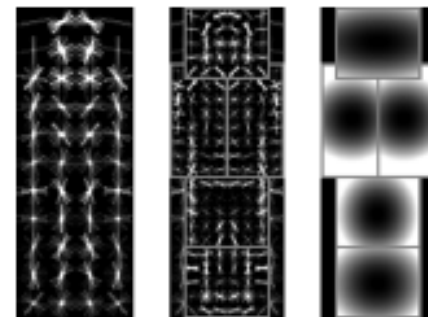
- If you quote from some other work, use quotation marks:

In their original work [12], Wang and Adelson say:

“It may ultimately be possible to encode images using “high-level” machine vision concepts such as 3-D object recognition, but it will be many years before such techniques can be applied to arbitrary images.”

- Mention other people who contributed to your thesis and clarify who contributed what:

The results reported in this section have been obtained in a joint project with Jochen Talberg. While he had the main idea and wrote all the code, I was responsible for the robotics experiments.



Source: Felzenszwalb et al.

In our implementation we built upon the source code provided by Werlberger et al. [13].

- If you cheat as a student, your exam will be marked as “failed”
- In severe cases, you can get exmatriculated!
- You can get sued for copyright violations
- You can lose your academic degrees even years after your misbehavior
- You can lose the right to submit grant proposals
- You can lose your job and your reputation



➔ Never cheat on purpose and avoid mistakes or misinterpretations