Internet of Things
Introduction into Scientific Work

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Agenda

■ Organizational

■ Scientific Writing

■ Presentations

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■ Scientific Writing

■ Presentations

Registration

- You have to register for the course via the HIS
  until **April 29, 2024**!
- Registrations are **binding**
  ⇒ you cannot withdraw from a registration after this date
- If you do not register before the deadline you cannot pass the course

External Workshop

- One of the hands-on sessions will be replaced with an external workshop
- Intended date: June 11, 2024

Agenda

Organizational

Scientific Writing

Presentations

How to write a scientific paper?

How would you start?
What are your biggest uncer-
tainties right now?

Scientific workflow

1. Choose your research topic
2. Identify your problem statement
3. Create your hypothesis
4. Review the literature
5. Optional: conduct research
6. Evaluate
7. Identify publication target
8. Write
9. Submit (and pray!)
10. Receive reviews
11. Finalize

Types of Publications

Content/Style

- Original Research
- Review/Survey Article
- Position/Opinion Paper
- Case Study
- Problem Statement

Format/Publication

- Conference/Workshop Proceedings
- Journal Paper
- Short Paper
- Poster
- Demo
- Non-scientific Publication

What to read?

What should I read?
How do I read?
Where do I find it?

Research Literature

- Library
- Google Scholar
- ResearchGate

Correct Citation

- Back your statements
- Insert a reference for any direct or indirect citation
- Direct citations must be marked with quotation marks

No Plagiarism!

Plagiarism will not be tolerated! Plagiarism will be reported to the examination office and can lead to exmatriculation in case of repetition.

Writing a Paper

- Define the scope
- Develop a *red thread*
- First Draft
- Iterations and getting feedback
- Polishing

Organization

- Title and authors (with affiliation and contact data)
- Abstract
- Introduction (including a TOC)
- Body
- Conclusion
- Optional: Outlook
- Bibliography

Structure

Example Structure (Original Research)

- Introduction
- Problem statement
- Related work
- Main idea
- Spotlight
- Evaluation
- Conclusion

Example Structure (Survey)

- Introduction
- Definition of key terms
- Classification/Categorization
- Case studies
- Discussion
- Conclusion

Visualizations

- Graphs and figures can help understanding
- Tables are valuable for categorizations and comparisons
- Always put captions and labels to graphs, figures, and tables
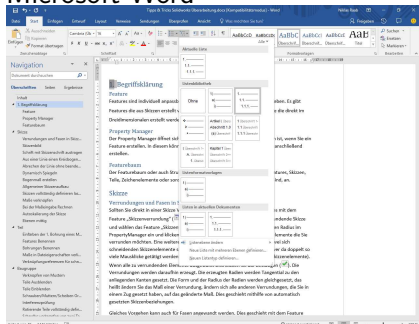- Refer to them in the text
- Readability is key!

Style

- Be concise
- Be objective and accurate
- Keep sentences and paragraphs short
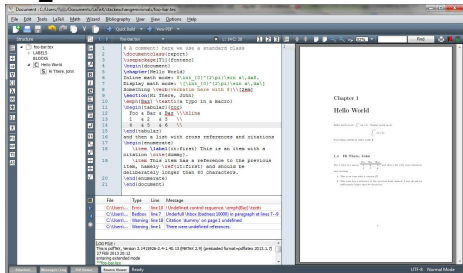- Use a simple language
- Avoid indirect (passive) statements

Tooling

Microsoft Word

Source: https://superuser.com

LATEX

Source: https://tex.stackexchange.com

Happy writing!

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Organizational

Scientific Writing

Presentations

Presentation Format

- Presentations will happen during the semester
- One or two presentations per session
- Each presentation should be 20–25 minutes + 5 minutes Q+A
- We all want to learn something

What is a good presentation?

Preparing your Presentation

- Present the highlights from your work

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    - $\rightarrow$ Motivate your topic

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  - $\rightarrow$ Motivate your topic
  - $\rightarrow$ Convince them that your paper is worth reading

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    - $\rightarrow$ Ensure they understand why you present each piece of information

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  - $\rightarrow$ Ensure they understand why you present each piece of information
- Target your audience

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- Do not leave anyone behind

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- Do not leave anyone behind
- Conclude your talk

Typical Structure

- Motivation
- Overview over your talk
- Related work
- Contribution
- Key insights (or evaluation)
- Conclusion

Checklist wrt the Content

☐ What is the key thing the audience should remember?

Taken from "Writing for Computer Science" by Justin Zobel

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☐ What were the limitations of the research? Where are they discussed?

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☐ Do you have the right to use the figures and illustrations?

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☐ Do you know how to use the equipment?

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Any Questions?