

## Guidlines for the Paper

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Original Slides: PD Dr. David Sabel

29. November 2023



# Form and Format

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- Length: 20.000 - 30.000 Symbols (ref Terms of Study)
- Maybe move long proves/programs to the appendix
- No strict rules on formatting
- Some guidelines/suggestions on the following slides

# Form and Format: Justification instead of Left-Aligned

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# Form and Format: Leave Space for Corrections/Comments

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## Form and Format: Fontsize

- 11pt or 12pt are pleasant

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# Form and Format: Frontpage

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Frontpage should contain

- Topic
- Author
- Title of seminar
- Supervisor

The HoTT topics of Type Theory  
Schwiedhard Schlau

Seminar paper in the Seminar  
„Type Theory rules“

Supervisor: Prof. Dr. Clara Clever

# Form and Format: Indexing

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- Index your pages
- Frontpage does not have an index
- Professional:
  - Reference tables with roman numerals (starting with i)
  - Proper part with arabic numerals (starting with 1)
- Index chapters, sections and subsections!

# Form and Format: Reference Tables

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## **Mandatory:**

- Table of Contents with indices of pages
- Bibliography

## **Optional:**

- Table of tables
- Table of images
- Table of shortcuts
- Glossary
- Index
- ...

Suggestion:  $\text{\LaTeX}$  and Bibliography With BibTeX



# Content of Seminar Paper

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- Topic: mostly determined by one or multiple literary sources
- Elaboration on paper  $\neq$  Simply translate original source
- Elaboration on paper = Summarization and critical (scientific) discussion of topic and source(s)
- Most of the time original papers are dense.

Your elaboration (and your talk) should **not** be similarly dense!

Thus **very useful**: Examples, illustrations etc.

# Suggestions on Process

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- **Structured** process (make a plan, e.g. a Gantt-Diagramm (sugg. by DS))
- Find out:
  - What is **important**, what is not?
  - What do I understand / do I not (yet) understand?
  - Where do I need more Literature?
  - Sometimes: What software so I need (z.B. Haskell-Compiler)?
- Make a **concept** (table of contents) and fill in the sections after
- From time to time during work:
  - Read and correct work, preferably also by **others**
  - Manage your sources (don't "do it later" !)

## Suggestions on Process (2)

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- Keep reader in mind
  - Is the structure understandable (**throughline**)?
  - Give examples and/or illustrations to convey your points step by step
- If the original discusses a **program**:
  - Try it out yourself
  - Test your own examples with the program
  - Measure efficiency if applicable
  - Try to find programs on page of author, or simple re-type them

Showcases in the talk/ including output in the paper **help with understanding!**

## Suggestions on Process (3)

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### Length

- You don't need to cover everything
- Long proves, chapters on very specific topics, etc. might be left out
- Do mention and give a reason why you leave something out and reference the source
- When leaving out big parts: Ask Supervisor first

## **Always**

- Introduction (motivation, goals, overview)
- Main part (might be more than one chapter!)
- Ending (summary, conclusion, future work)
- Bibliography

# Citation with text-integrated abbreviations

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- Computer science papers mostly use text-integrated abbreviations
- Note: Other manners of citation exist

## **Text-integrated abbreviation:**

- If citing indirectly
- Reference is identified by Key
- Key is integrated into text

Example:

*Dijkstra's algorithm solves the problem of finding the shortest path on directed graphs with non-negative weights on edges [Dijkstra, 1959].*

Wrong (Key outside of sentence):

*Dijkstra's algorithm solves the problem of finding the shortest path on directed graphs with non-negative weights on edges. [Dijkstra, 1959]*

## Citation with text-integrated abbreviations (2)

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Variation with “see” (or “ref.”):

*Dijkstra's algorithm solves the problem of finding the shortest path on directed graphs with non-negative weights on edges (see [Dijkstra, 1959]).*

Variation: Integrate author into sentence

*Dijkstra [1959] formulated an Algorithm that solves the problem of finding the shortest path on directed graphs with non-negative weights on edges.*

Bad: use reference as “thing”:

*In [Dijkstra, 1959] an algorithm that solves the problem of finding the shortest path on directed graphs with non-negative weights on edges is defined.*

## Key: Author-Year

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- As in examples so far: Author-Year-Key
- Bibliography then sorted by last names and years:

### *Bibliography*

...

*Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein: Algorithmen – eine Einführung. Oldenbourg, München, Wien 2004*

*Edsger W. Dijkstra: A note on two problems in connexion with graphs. In: Numerische Mathematik. 1, 1959, S. 269–271*

*Paul Erdős: Some recent problems and results in graph theory. Discrete Mathematics, Edition 164(1-3), 1997, S. 81-85*

...



## Key: Sequential Numbers

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- Sequentially enumerate sources in Bibliography  
(Order most of the time also by last names and year)
- Key is the number (in square brackets)

*Dijkstra's algorithm solves the problem of finding the shortest path on directed graphs with non-negative weights on edges (see [10]).*

...

*Bibliography*

...

9. *Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein: Algorithmen – eine Einführung. Oldenbourg, München, Wien 2004*
10. *Edsger W. Dijkstra: A note on two problems in connexion with graphs. In: Numerische Mathematik. 1, 1959, S. 269–271*
11. *Paul Erdős: Some recent problems and results in graph theory. Discrete Mathematics, Edition 164(1-3), 1997, S. 81-85*

## Key: Alpha-numerical

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- First letters of last names (for multiple authors) or first three letters of last name for only one author, as well as year of publishing as key.
- Bibliography alphabetically ordered by Keys

*Dijkstra's algorithm solves the problem of finding the shortest path on directed graphs with non-negative weights on edges (see [Dij59]).*

*Bibliography*

...

*[CLRS04] Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein: Algorithmen – eine Einführung. Oldenbourg, München, Wien 2004*

*[Dij59] Edsger W. Dijkstra: A note on two problems in connexion with graphs. In: Numerische Mathematik. 1, 1959, S. 269–271*

*[Erd97] Paul Erdős: Some recent problems and results in graph theory. Discrete Mathematics, Edition 164(1-3), 1997, S. 81-85*

...

# Bibliography

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## Some Guidelines

- Names of authors/publishers with out titles (Dr, Prof, Priv-Doz, etc.)
- If the source is available online, provide a link:
  - Link to publication, e.g. through DOI (Digital Object Identifier)
  - **Not** just some googled link!
- Generally: Mention availability of source **in general**
- **Not**: How did I find the source?

Wrong:

*Edsger W. Dijkstra: A note on two problems in connexion with graphs.*  
*<http://www-m3.ma.tum.de/foswiki/pub/MN0506/WebHome/dijkstra.pdf>*

Correct:

*Edsger W. Dijkstra: A note on two problems in connexion with graphs. In: Numerische Mathematik. 1, 1959, S. 269–271, <https://doi.org/10.1007/BF01386390>*

# Bibliography: Necessary Content

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- **Papers of scientific journals:** Authors, title of paper, name of journal, year of publication, number of edition, page numbers
- **Conference talks:** Authors, title of conference, year of publication, page numbers  
Optional: Publisher, place of conference
- **Books:** Authors, title of book, publisher, year, if applicable: Entry number, edition
- **Technical reports:** Authors, title of report, year of publication, number of report, publishing institution (e.g. „LMU München“)
- **Theses:** Authors, title of thesis, year of publication, institution, type (Bachelor's thesis, Master's thesis, Doctoral thesis, etc.)
- **Websites:** Authors, title of website, URL, website last visited at

# Bibliography: Quality of sources

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Quality:

- Peer-reviewed sources are the ones of the highest quality:  
Journal entries, conference proceedings, books (mostly)
- Non peer-reviewed: Technical reports, websites

Only use non-reliable sources if no others are available!

Further:

- No unnecessary quotes to fill the Bibliography
- Every source contained in the Bibliography needs to be cited in the text!

# Further Tipps

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- **Title and sectionheaders:**  
Neither too long, nor too short and meaningful!
- **Beginning of chapter:** Introduction as to what the reader can expect from the chapter
- **Paragraphs, Sentences, Enumerations:**
  - One piece of content per paragraph.
  - Use enumerations sparingly.
  - Avoid bullet lists, write text.
  - Avoid complex sentences (not literary work!)
- **Unambiguous:**  
Avoid ambiguity, e.g. „Der Junge trocknet das Pferd mit Tuch.“

## Further Tipps (2)

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- Consistency:

Notation should be consistent.

Negative examples:

- $\mathbb{N}$  and  $\mathbb{N}_0$  for  $\{0, 1, \dots\}$
  - Lambda-calculus and lambdacalculus
- Foreign language words (specifically when writing in german):

If possible, translate. Don't translate names/special terms.

Examples:

- Translate „Features“ as „Eigenschaften“ or „Merkmale“
  - Don't translate „Quicksort“
- Zusammengesetzte Substantive:  
In German: Write as one word or with hyphen, not as two words (in english that is fine)
  - Correct: Standardalgorithmus und Standard-Algorithmus
  - Incorrect: Standard Algorithmus

## Further Reading

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- Lots of literature about scientific writing exists
- Pay attention to the **field of study**!

Small collection:

Axel Bänsch, Dorothea Alewell, und Tobias Moll. *Wissenschaftliches Arbeiten*. De Gruyter Oldenbourg, Berlin, 12. Aufl., 2020.

Markus Deininger, Horst Lichter, Jochen Ludewig, und Kurt Schneider. *Studienarbeiten : ein Leitfaden zur Erstellung, Durchführung und Präsentation wissenschaftlicher Abschlussarbeiten am Beispiel Informatik*. vdf Hochschulverlag, Zürich, 6. Aufl., 2017.

Justin Zobel. *Writing for Computer Science*. Springer, 3. Aufl., 2014.