Seminar Algorithmentechnik
Geometry, Graphs and Algorithms

Introduction and Topic Distribution

Tamara Mchedlidze · Torsten Ueckerdt · Lukas Barth · Lars Gottesbühren · Sascha Gritzbach · Marcel Radermacher · Franziska Wegner · Matthias Wolf · Tim Zeitz

19.10.2018
Overview

1. Organizational issues
   - Structure
   - Your Participation

2. Topics
   - Presentation of the topics
   - Distribution
   - Meeting your advisor
Supervisors

Institute of Theoretical Informatics, Algorithms Group

• Tamara Mchedlidze
• Torsten Ueckerdt
• Lukas Barth
• Lars Gottesbürren
• Sascha Gritzbach
• Marcel Radermacher
• Franziska Wegner
• Matthias Wolf
• Tim Zeitz
Participants

Short presentation:
• Name
• Direction of studies/Semester
• Background in Graphs, Computational Geometry and Algorithms
Seminar Summary

• independent work on a recent research topic
• extraction of the highlights of the topic and their short presentation
• investigation of the topic and scientific presentation of it
• actively discuss the topics of the other participants
• present the details of the topics in your own words in a written document
• evaluation of a scientific text
Seminar Summary

• **independent work** on a recent research topic
• extraction of the **highlights** of the topic and their **short** presentation
• investigation of the topic and **scientific presentation** of it
• **actively discuss** the topics of the other participants
• present the details of the topics in **your own words** in a written document
• **evaluation** of a scientific text

→ Opening of your horizont on the various topics in theoretical computer science
→ Basic skills of scientific work
→ Preparation for the Master thesis and its presentation
today: Topic distribution
today: Topic distribution

Get familiar with the topic
literature review

9.11. Short presentations
Structure

today: Topic distribution

- Get familiar with the topic
- Literature review

- 9.11. Short presentations
- 16.11 Presentations
- 23.11 Presentations
- 7.12 Presentations
- 14.12 Presentations
- 21.12 Presentations
today: Topic distribution

Get familiar with the topic
literature review

9.11. Short presentations
16.11 Presentations
23.11 Presentations
7.12 Presentations
14.12 Presentations
21.12 Presentations

Selection/structuring
lecture content,
Creating the slides

Choice of the material
structuring the document,
writing

20.1 Submission of the written documents (first round)
Structure

today: Topic distribution

Get familiar with the topic literature review

9.11. Short presentations
16.11 Presentations
23.11 Presentations
7.12 Presentations
14.12 Presentations
21.12 Presentations

Selection/structuring lecture content, Creating the slides

Choice of the material structuring the document, writing

20.1 Submission of the written documents (first round)
Review of two other documents

24.2 Submission of the reviews
today: Topic distribution

Get familiar with the topic
literature review

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16.11 Presentations
23.11 Presentations
14.12 Presentations
21.12 Presentations

20.1 Submission of the written documents (first round)

24.2 Submission of the reviews

Revision of your own document

24.03 Final submission of the written document

Choice of the material
structuring the document, writing

Selection/structuring
lecture content,
Creating the slides

Review of two other documents

Get familiar with the topic
literature review
Introduction and Topic Distribution

Structure

- Today: Topic distribution
- Get familiar with the topic literature review
- OCT
  - 9.11. Short presentations
  - 16.11 Presentations
  - 23.11 Presentations
  - 7.12 Presentations
  - 14.12 Presentations
  - 21.12 Presentations
- NOV
- DEC
- JAN
- FEB
- MARCH
- JANUARY
- FEBRUARY
- MARCH

Approximate time
Read, do research, understand 40h
Making presentations and practicing 30h
Writing and structuring 30h
Read another work and evaluate 10h
Presentations 10h

Selection/structuring
lecture content, Creating the slides

Review of two other documents
Revision of your own document
20.1 Submission of the written documents (first round)
24.2 Submission of the reviews
24.03 Final submission of the written document
Your Participation

- **Short presentation** of the highlights of the topic
- **Main presentation** of the topic
- **Presence** on the presentations and **participation** in the discussions
- **Written document** of the topic, formulated in your own words with concentration on your own questions
- **Review/correction** of two documents of other participants
- Following the deadlines (help to keep the flow of the seminar)
Your Participation

• **Short presentation** of the highlights of the topic
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Grade

• Quality of the **main presentation** (content, structure, presentation skills)
• Quality of the **final written document**
Your Participation

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• **Main presentation** of the topic
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• Following the deadlines (help to keep the flow of the seminar)

*short presentation and the first version of the document are not graded*

Grade

• Quality of the **main presentation** (content, structure, presentation skills)
• Quality of the **final written document**
Familiarization phase

1) first look through the paper, and then read thoroughly
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2) Make overview of the related work
   • Which works and results are cited? → Related Work
   • Which of these are fundamental?
   • What is the state of the art of the research area of the paper?
   → Article search Google Scholar or DBLP; Access from the university network
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3) Assess the significance of the paper
   • Who cites this paper?
      → in Google Scholar use the function ”cited by”
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4) What should you read in the literature?
   • Title and Abstract – Is the content relevant?
   • if yes – Introduction, Conclusion, Main results
   • Only if details are relevant – read all
   • Keep notes!
Short Presentation

Idea: Communicate early what you have understood...

Learning Effects:

- Better understanding of the topic
- Early feedback and ideas for possible directions
- Train for the main presentation - feedback from the advisor
Short Presentation

Content

• “Advertisement“ of the main presentation
• **Motivation:** why the particular problem is studied? (fills the holes in the knowledge, applications?)
• **What results you will concentrate on:** Model, Algorithms and used techniques, main theorems?

... 

Form

• 5 Minutes
• structured and clear slides: examples instead of a lot of text, intuition instead of formal definitions
• Use any software you prefer (**Ipe**, PowerPoint, Keynote)
  *ipe7.sourceforge.net
Main Presentation

Learning Effects:

• Deepen the understanding by communicating the details of the topic
• Develop presentation slides - multiple feedbacks from the advisors
• Develop your presentation skills
• Get feedback from the audience and improve in the future
Main Presentation

**Timing:** 30 minutes + 15 minutes discussion

**Content:**
- Motivation of the topic
- Details of your topic
Main Presentation

**Timing:** 30 minutes + 15 minutes discussion

**Content:**
• Motivation of the topic
• Details of your topic

**Struct.:**
• What can be explained clearly in 30 minutes? Make a selection of the essential issues. **Talk to your class-mate**
• What is your target group?
• Clear, logical, concise structure, illustrative examples
Main Presentation

Timing: 30 minutes + 15 minutes discussion

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Slides:
• bullet points, no complete sentences
• graphics use
• not too many and not too overloaded slides (about 2 min / slide)
• clear design (suitable colors, uniform font, . . . )
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Timing: 30 minutes + 15 minutes discussion

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• Motivation of the topic
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Struct.:  
• What can be explained clearly in 30 minutes? Make a selection of the essential issues. Talk to your class-mate
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Present.:  
• practice, measure time
• eye contact with the audience
• keep the listeners “awakened”, arouse their curiosity
• speak freely, slowly and clearly
• remain calm, control nervousness
Learning Effects:

- Structure and write scientific text
- How to produce formal enough but still readable text: balance between formal definitions and intuition
Writen Document

**Size:** 12–15 in a given \textsc{LaTeX}-format
Writen Document

**Size:** 12–15 in a given \LaTeX-format

**Structure:**
- short and clear Abstract
- Introduction, state of art, applications
- Selected topics in detail
- Summary / Conclusion
- complete references (BibTeX)
Written Document

**Size:** 12–15 in a given \LaTeX-format

**Structure:**

- short and clear Abstract
- Introduction, state of art, applications
- Selected topics in detail
- Summary / Conclusion
- complete references (BibTeX)

**Writing:**

- Do not copy text: express in your own words
- Logical structure, keep the red line
- Avoid very long sentences
- clear and consistent formulation
- avoid too long paragraphs
- Use pictures
- Cite and specify all sources correctly
- Check grammar and spelling
Mutual Reviews

Learning Effects:

• critical reading of scientific texts, constructive critiques
• deeper understanding of two(?) other seminar topics
• you and your class-mates get meaningful feedback and suggestions for improvement
Mutual Reviews

Form: • written statement (form provided)
• short summary of the content
• strengths and weaknesses of the work
• review of the text (comprehensibility, structure, accuracy, language, topic coverage, ambiguities, . . . )
• be constructive: detailed comments and correction instructions
• as detailed as you would like to get review for your work
• anonymous, objective and fair
Supervision

Your supervisor is your **contact** in all matters, both regarding the content, topics and the preparation presentation. It is **your** responsibility to approach him / her.
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**Informal meeting with the supervisor:**

- \( \geq 2 \text{ Weeks before the main presentation} \):
  - discussion of the concepts to present
- \( \geq 1 \text{ Week before the main presentation} \):
  - discussion of the slides
- **The latest till 20.12 (a month before the write-up submission):**
  - to discuss the content of the written document
- **The latest till 10.3 (two weeks before the final submission):**
  - Discussion of the corrected version of the document
Overview

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   • Presentation of the topics (note down the number of the topic you like, you will vote for three of them)
   • Distribution
   • Meeting your advisor
Next Meetings

now:

   personal communication with your supervisor

9. November 9:45 am:
   Short Presentations

16. November 9:45 am:
   Presentation of two topic

23. November 9:45 am:
   Presentation of two topics

Check web page for the following meetings
Next Meetings

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Next Meetings

now:

personal communication with your supervisor

9. November 9:45 am:
  Short Presentations

16. November 9:45 am:
  Presentation of two topic
  always in this room

23. November 9:45 am:
  Presentation of two topics

Check web page for the following meetings