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Good Scientific Practice in Computer and Data Science

Introductions

Motivation - Why this course?

What do you think?

Learning Goals I - Good Scientific Practice

After successfully completing this course, participants...

- apply basic principles of good scientific practice.
- place scientific work in a broader context.
- act with integrity and responsibility in mind.
- deal intensively with aspects of quality assurance.
- critically scrutinize scientific statements.
- resolve ethical challenges in research.
- develop strategies to avoid conflicts and misconduct a the scientific environment.

Actually learning this requires **applying it in practice**!

Learning Goals II - Actually Doing Good Science

Taking GSP into practice, you will also be able to...

- effectively structure a research papers,
- are familiar with formal and structural norms regarding outlines, formatting, bibliographies, etc.,
- identify the principles of good scientific writing, apply them to their own writing and revise the manuscripts of others accordingly,
- participate in technical and scientific discussions,
- give constructive feedback to colleagues,
- present a research project they have worked on and lead a technical discussion about it.

You already know a lot about this!

Goals summarized

This course...

- gets you **started** into your PhD
- gets you **ready** for your PhD
- teaches you to do science **right**
- teaches you to do **good** science
- sharpens your skills

We cover:

1. Good Scientific Practice
2. Working with literature
3. Scientific writing
4. Reviews, Feedback, Revising
5. Scientific discussion
6. Presenting

You are at the center of this course!

- Be active participants, not passive observers!
- Bring your research to this course.
- Work on your research in the homeworks – you benefit directly from this.
- Exchange experience **with each other**.
- Make contacts with other PhD students here $\rightarrow$ Networking
- There is enough room to get to know each other.

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Good Scientific Practice isn't *just rules* but a lot of **Practice**!
Therefore, practice is this courses' focus.

Practical Tasks

- Many small practical tasks $\rightarrow$ workshop, not lecture
- Group work $\rightarrow$ we provide frame and guidance, it's your task to fill it
- 3 major assignments, simulating a peer-reviewed conference
  1. Writing and submitting a paper(-like)
  2. Reviewing other papers $\rightarrow$ Revising own paper
  3. Presenting and discussing research

Schedule

1. 2025-10-25 Day 1: How to PhD, Good Scientific Practice
2. 2025-10-25 Day 2: Working with Literature, Scientific Writing
3. 2026-01-16 Deadline for Paper submission
4. 2026-02-06 Deadline for Reviews
5. 2026-02-23 Day 3: Reviewing, Feedback, Presenting
6. 2026-03-23 Day 4 (Online): Final Session, Presenting, Reflection

Criteria: Paper, Review, Presentation, Presence

Mock conference

Depending on your progress the mock conference should:

- Teach you about the publishing process.
- Get you started with writing papers.
- Get feedback from outside your group about your ideas & topics.
- Sharpen/Improve your writing skills.
- Get early feedback for you next paper and thesis.

Getting to know each other

First topic: **How to PhD**

Let's start with a little game:

https://research.wmz.ninja/projects/phd/index.html

Closing

Assignment: Mock conference paper

Your paper should be from your PhD's area, e.g.

1. real/planned paper
2. hypothetical paper from your area
3. paper about your master thesis

In short - something that moves your PhD forward!

It's ok, if there are gaps - work around them. Ideas / preliminary results are ok.
Your paper need not be complete in content, but should be *complete in form*.

How to submit

- We use easychair for submitting your papers
- https://easychair.org/conferences?conf=gmc25