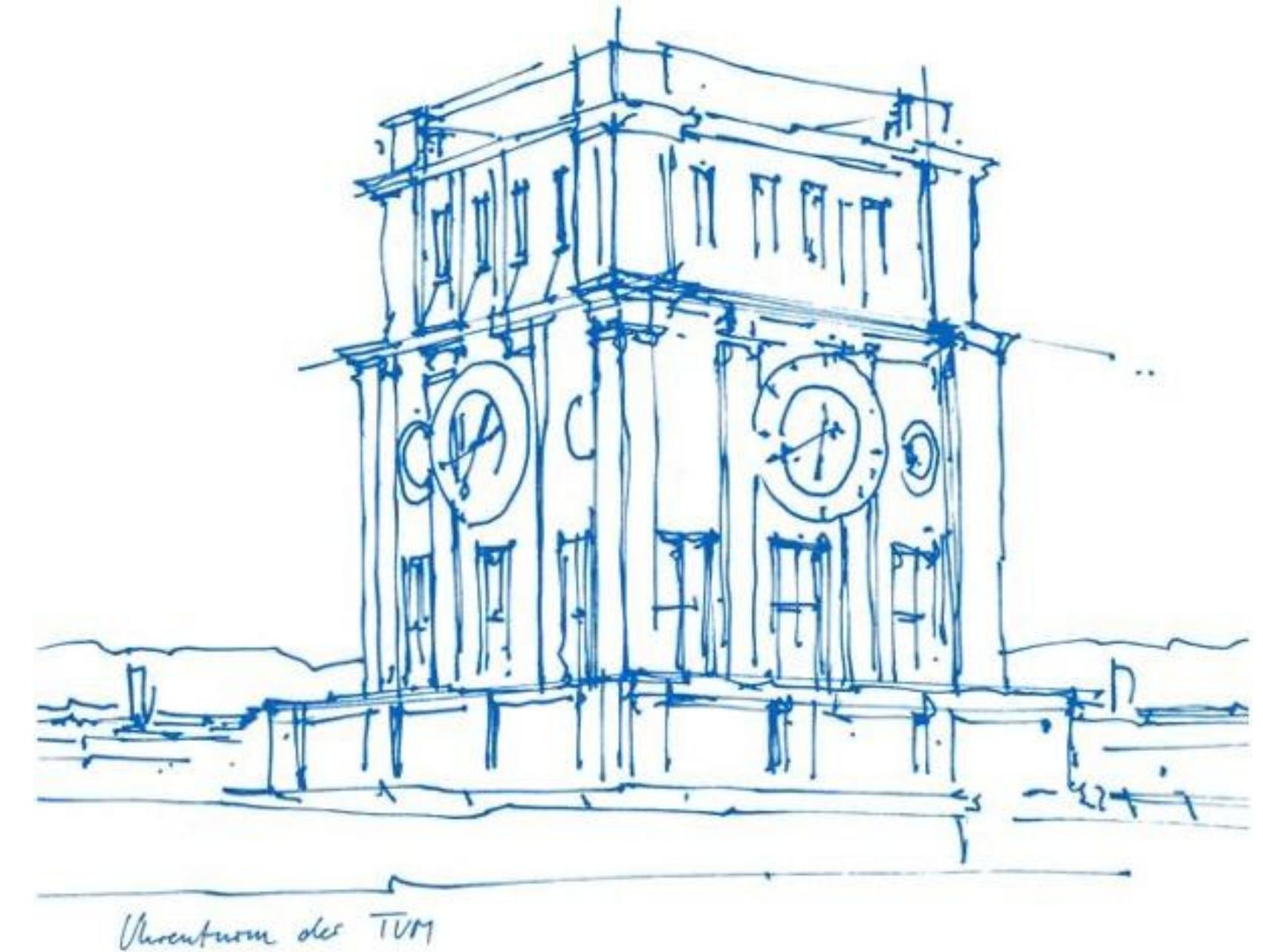


Master Seminar AI for Vision-Language Models in Medical Imaging (IN2107)

Cosmin Bercea, Jun Li, Ha Young Kim
Prof. Julia Schnabel



Uhrenturm der TUM

I32 – Chair for Computational Imaging and AI in Medicine - **CompAI**
Faculty of Informatics and Institute for Advanced Study

<https://github.com/LijunRio/Master-Seminar-AI-for-Vision-Language-Models-in-Medical-Imaging-IN2107-IN45069-?tab=readme-ov-file>

30/04/2025



Intro

Who we are

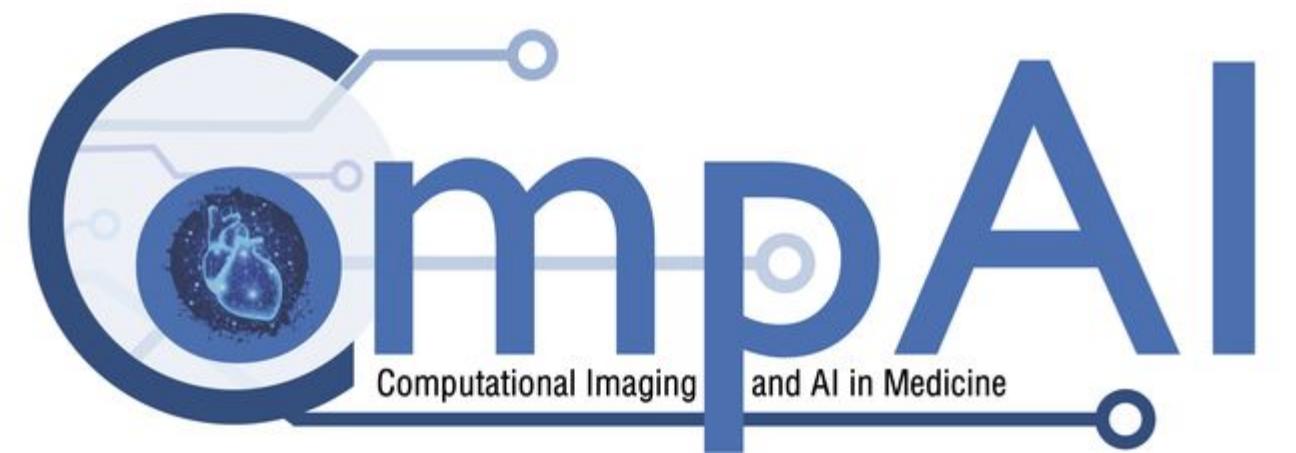


Julia A. Schnabel

Professor for Computational Imaging and AI in Medicine, Director of the Institute of Machine Learning in Biomedical Imaging



Computational Imaging and AI in Medicine



Jun Li

PhD Student

june.li@tum.de



Cosmin I. Bercea
Postdoctoral Researcher
cosmin.bercea@tum.de



Ha Young Kim

PhD Student

hayoung.kim@tum.de

Intro

Who we are



Cosmin I. Bercea
Postdoctoral Researcher
cosmin.bercea@tum.de



Jun Li
PhD Student
june.li@tum.de

Intro

Who we are



Coffee-loving Cosmin

Postdoctoral Researcher

cosmin.bercea@tum.de



Jun Li

PhD Student

june.li@tum.de

*Image edited with Pixlr <https://pixlr.com/>

Intro

Who we are



Coffee-loving Cosmin

Postdoctoral Researcher

cosmin.bercea@tum.de



Jasmine tea-loving Jun

PhD Student

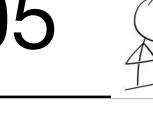
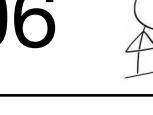
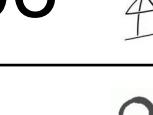
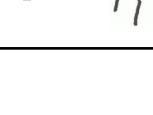
june.li@tum.de

Throwback to last semesters



Seminar structure (Preliminary)

Outlook

30.04		Welcome and Introduction to VLMs-L1
07.05		How to read papers make posters
14.05		VLMs-L2
21.05		Guest talk:
28.05		Student Presentations
04.06		Student Presentations
11.06		Guest talk:
18.06		Student Presentations
25.06		Guest talk:
02.07		Student Presentations
09.07		Guest talk
16.07		Student Presentations
23.07.		Student Presentations
30.07		Poster Session (All groups)



Room: 00.08.059



On Zoom*

Deadline Paper Selection

Model Selection

Deadline Poster Submission

The academic life.

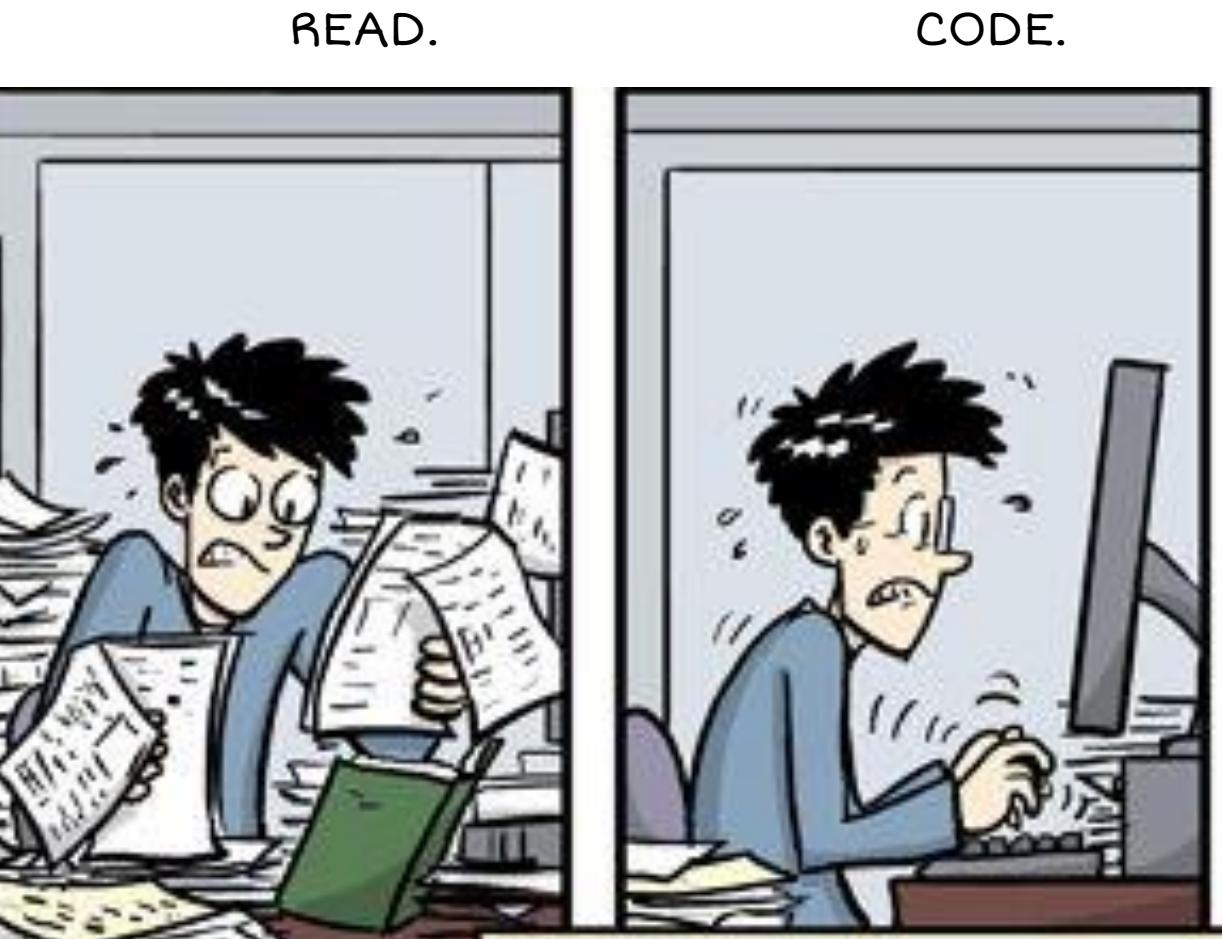
READ.



READ.

- Individual work
- Choose a topic & paper
- Present the paper
 - How the method works
 - Critical evaluation of the results
 - **15 min talk + 5-10 min Q/A**

The academic life.



READ.

- Individual work
- Choose a topic & paper
- Present the paper
 - How the method works
 - Critical evaluation of the results
- 15 min talk + 5-10 min Q/A

CODE.

- Individual work
- Implement and test your selected method on our data
- Deliver: **Code**

The academic life.



READ.

- Individual work
- Choose a topic & paper
- Present the paper
 - How the method works
 - Critical evaluation of the results
- 15 min **talk** + 5-10 min Q/A

CODE.

- Individual work
- Implement and test your selected method on our data
- Deliver: **Code**

PRESENT.

- Group work (2 students)
- Compare the strengths and weaknesses of the methods
- Prepare **group poster**
- Individual **pitch**: 3 min/person

Deliverables

Read Paper :)

Paper Selection

- We'll upload the **recommended paper list** on Moodle by
07.05.2025

Register your chosen paper on Moodle (first come, first served!)

- Voting opens: **07.05.2025, 00:00**
- Deadline: **14.05.2025** (before the next session)

Others:

- If you want to choose a paper **not on the list**, just write to us **in advance** (not the night before)



PRESENT THE PAPER

Format or Template

- No strict template. You are free to use the template you like.
- Recommend: Slides should guide your talk-not just wall of text.

Content (What you can include)

- Explain What, Why and How clearly.
- Also good have your own insights and discussion from the paper.

Final Submission

- Present your paper in the seminar.
- After presentation, you need to update your presentation PowerPoint to us.



Deliverables

CODE.

From ours:

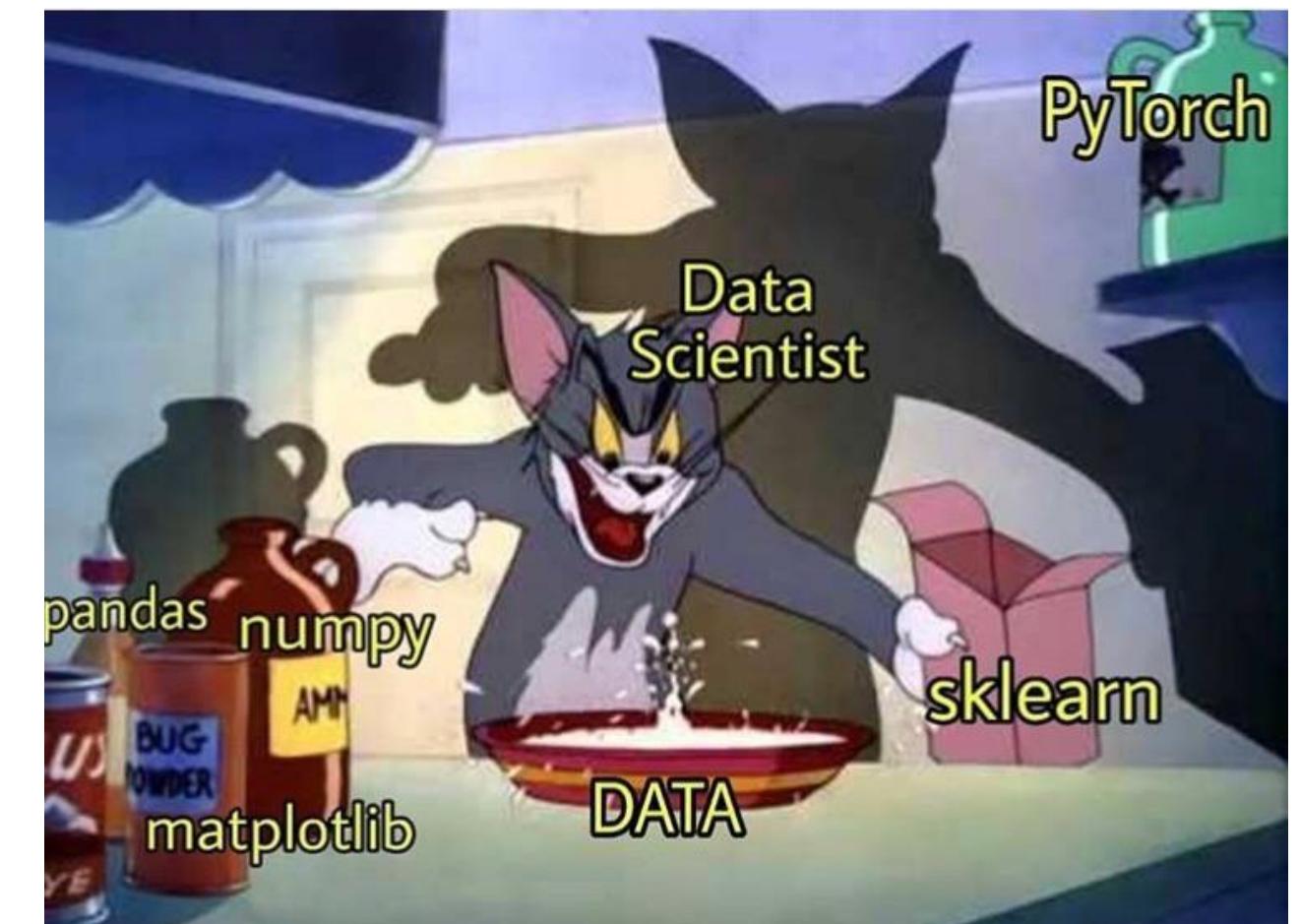
- We will provide recommended frameworks for working with LLMs and VLMs, including guidance on data formatting, training, and inference.
- You will also receive access to medical datasets for training or evaluation.

Your task:

- Test a model
- Develop a solid understanding of how it works
- Present your results in the form of a poster
- If implementation code is available on GitHub, you are welcome to use it.
- The focus is not on achieving high performance, but on demonstrating your understanding of the method, deep thinking of the limitations and challenges

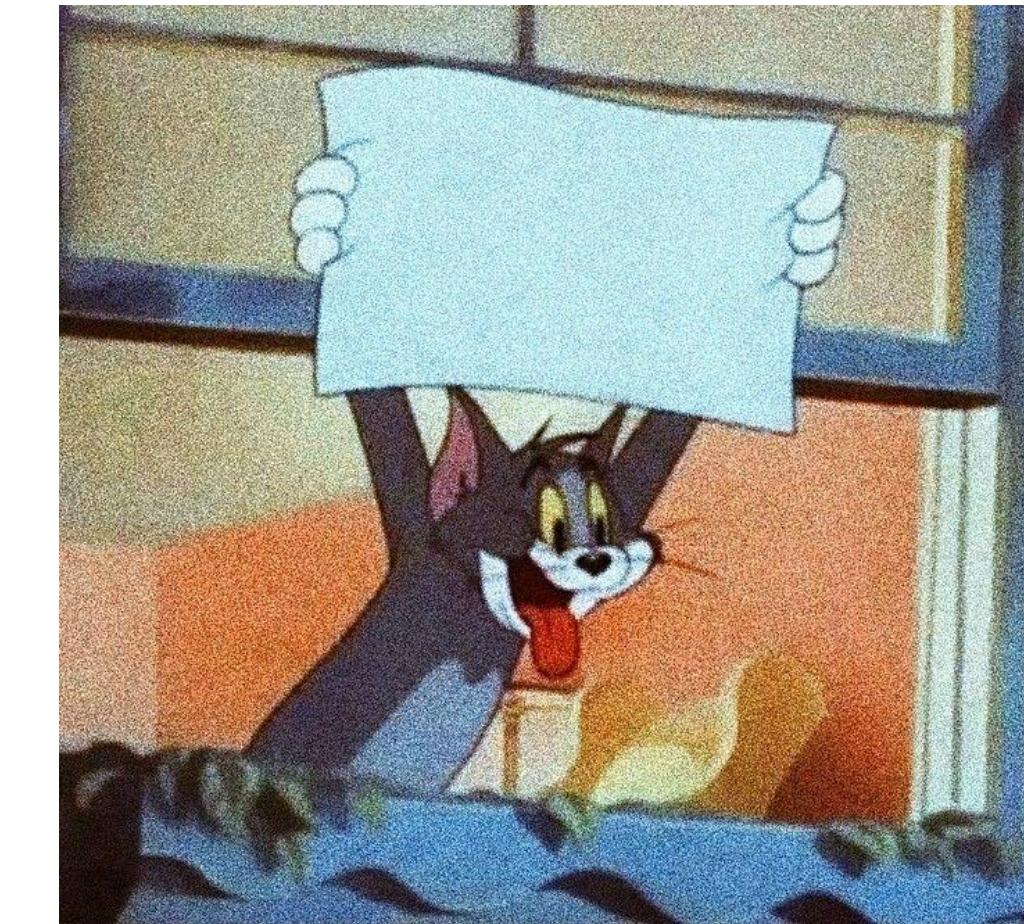
Deadline for both the code and the poster is **23.07.2025.**

- Start working early — we're happy to support you along the way.



POSTER.

- Provide a poster with your main results from the coding projects. (one poster/group) deadline **23.07.2025.**
- As a presenter: Pitch (~3min) with a focus on individual contributions (one pitch/student)
- As audience: Active participation



How to Submit Your Materials.

- Organize all materials (presentation slides, poster, and code) **in your GitHub repository**.
- Share your repository link with us (both email and on the seminar Repo), fork our Seminar 25 repo, and update your link in the README.md.
- All materials (presentation, poster, and code) are due **by 23.07.2025.**
- You can update your **presentation in advance after your talk**, and update the other materials later.



Deliverables

Invited Talks

We will invite **experts Professors** and in the field to present for you!

Please be **present** and **engage** in discussions!



That's all folks!



Coffee-loving Cosmin

Postdoctoral Researcher

cosmin.bercea@tum.de



Jasmine tea-loving Jun

PhD Student

june.li@tum.de