



Important Information at a Glance

Watch the introduction video in the lecture channel!

Attending the Inverted Classroom Lectures

- **Passive** Slot: Monday 12:15-14:00
Watch the videos of the current learning unit in this slot. This is just a recommended slot – of course you can watch and read the content at any time you like. But if you have motivation issues, setting a fixed time might help!
- **Active** Slot: Wednesday 12:15-14:00
Discuss the current learning unit in a Teams session. Ask questions beforehand or during the live session.
- Introductory Meeting: Wednesday, **12.04.2023**, 12:15 sharp
Your opportunity to discuss any organisational or general questions.
- First Discussion: Wednesday, **19.04.2023**, 12:15 sharp
Discussion of Learning Unit 01, watch the video beforehand.

Tutorials

- your individual choice: weekly face-to-face tutorials or online
- Discuss class room work assignments in a group of up to 3 students. (12 points)
- Hand in homework assignments in the same group. (24 points)
- **Feel free to use the organisation channel to find a group or message Karl Schrader to join the group roulette (random team assignment)!**

Exams

- admission: 288/432 tutorial points (12 tutorials)
- open book: You can bring this year's printed script and handwritten notes.
- first exam: Monday, July 31, 2023, 2 pm, Building E1.3, Lecture Hall 002
- second exam: Monday, October 16, 2023, 2 pm, Building E1.3, Lecture Hall 003
- The better mark counts.
- **Exams require LSF registration!** (Starts a few weeks into the semester.)

In the rest of the document you find very detailed organisational information.

A Word of Welcome

The lecture *Image Compression* covers my own research area and I hope that I can spark your interest in this field of image processing. This comprehensive document is intended to provide you with the organisational information that you need in this semester. Together with the introduction video, it should also help you decide if you want to take this lecture.

After positive feedback in the last semester, you can partially once more decide both the format and pace of the lecture yourself! You can either attend the group work in person, or you can choose a fully online experience (except for the exams).

The virtual inverted classroom model with pre-recorded lectures has been well-received so far, but every semester I try to improve it further. I intend to try some modifications to the discussion sessions to foster more active participation and encourage all participants to provide feedback throughout the semester.

Note that the lecture concept allows you to study at your own pace: Only the tutorials are time-gated, while most of the lecture content will be available at day one. Just make sure to watch at least the videos for the current learning unit weekly (or read the script). Otherwise it might be very difficult to catch up later.

I hope you will enjoy this lecture and look forward to fruitful discussions.

– Pascal Peter



Teaching Goals

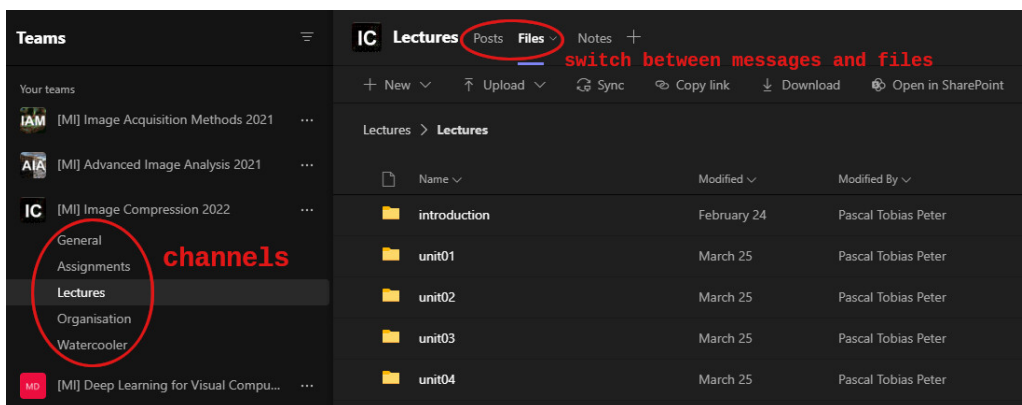
After attending the lecture you should ...

- ... know the basics of information theory and its relevance for compression.
- ... understand a wide variety of compression algorithms for general data.
- ... be able to apply those algorithms for lossless image compression.
- ... gain an overview of major families of lossy codecs and know important ones in detail.
- ... be able to select the right methods for practical compression problems.

Inverted Classroom in Teams

Step 1: Prepare by Watching/Reading Lecture Materials

- Every week is dedicated to a *learning unit* focussing on a specific topic.
- **You should prepare this content before the active discussion sessions.**
- Find the lecture content by navigating to the *file* tab of the *lecture channel*.



- Most of the content is available from day one. Go ahead and watch content at a faster pace, if you like. However, meetings still focus on one unit each week.
- The native video player in Teams is sluggish or you don't like the subdivision of each learning unit into bite-sized videos? Download the video files and watch them with your favourite player!
- Note: Much of the video content is from previous semesters, only new parts are edited in (sorry, production costs a **lot** of time.) Thus, slide numbers are not always identical with the pdf scripts!

Step 2: Join the Weekly Meeting in the Lecture Channel

- Meetings in the *lecture channel* are dedicated to your questions and ideas.
- The meetings take place every Friday at 14 c.t., which means 14:15 sharp.
- Submit questions before the meeting (direct message, mail) or during the meeting.
- Use video/voice chat if possible. This makes the meetings much more lively.
- Ask anything (at least broadly course-related) you like, no matter how basic or broad.
- Feel free to ask questions about previous learning units, too.
- We might experiment with some external tools that also allow anonymous questions.
- Since active attendance is the goal, the meetings are **not** recorded.

Tutorial Details

Groups

- Organise in groups of up to three students for the tutorials.
- You can use the organisation channel to look for groups.
- Alternatively, join the group roulette by messaging Karl Schrader.
- Once your group has formed, send a message to Karl Schrader to receive your own private channel. (Staff can still read it, though.)

Tutor



Karl Schrader

Homework

- Each week: theory or programming assignments worth 24 points on average.
- Submit via the assignment tab of teams. Only one submission per group. (Teams does have a group submission feature, but it is not very useful.)
- Programming only requires basic C knowledge. You only fill in missing lines of code.
- Solutions will be available for theory assignments, but not for programming.

Classroom Work

- There are additional assignments each week intended for group work.
- You get 12 points for participation with either of these 3 options:
 - Option 1:** Attend in person tutorials.
 - Option 2:** Work together online in your private channels.
 - Option 3:** Submit solution attempts (not graded, do not have to be complete)
- Please tell us early in the semester, if you want to participate in face-to-face tutorials or online. More information about group registration to come in the *organisation channel* of Teams.
- **First tutorial:** 26.04.2022.
- Solutions will be available also for classroom work.



Exam Rules

Detailed Rules for the written Exams. These might be augmented with additional rules such as e.g. covid safety measures towards the end of the exam period.

Please also consider the self-test problems in the assignment channel to get a better idea of the exam contents.

- **Written and oral exams will be conducted in person unless stated otherwise. Oral exams are only possible if the student cannot take part due to reasons beyond their control (e.g. sickness).**
- All content from the lectures and tutorials is relevant unless explicitly stated.
- The scripts, videos, and tutorial materials contain all content you need to solve the exam. No external sources (e.g. books) are required.
- The time limit for the exam is 120 minutes.
- **No** pocket calculators or other electronic devices are allowed in the exam.
- You can bring the printed lecture materials **from this year only**. This includes the lecture slides/script, the homework and classroom work exercises and also the sample solutions. Make sure you have the latest version of all documents.
- In addition, you can also bring your handwritten notes.
- Dictionaries are also allowed, if you don't trust your English.
- **Any additional materials you bring will count as cheating.**
- **HISPOS/LSF registration is mandatory.** If you cannot register (e.g. Erasmus students) please contact Pascal Peter.
- If you take the exam, you have to stay till the end, you cannot leave early.
- Only write on the paper that is provided by us. If you run out of space or need a scrap sheet, we will provide you additional blank sheets.
- You may not take the exam or any written solutions with you. Also your scrap sheets have to be handed in.