Exercise Session 1

Image Processing

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Requirements for JMCS Students

- Register for BeNeFri network
- Make sure you request access for Academia
- Deadline: September 30th
  Request access as soon as possible.

- https://mcs.unibnf.ch/organization/registration-for-teaching-units/
- https://mcs.unibnf.ch/organization/

Assignments

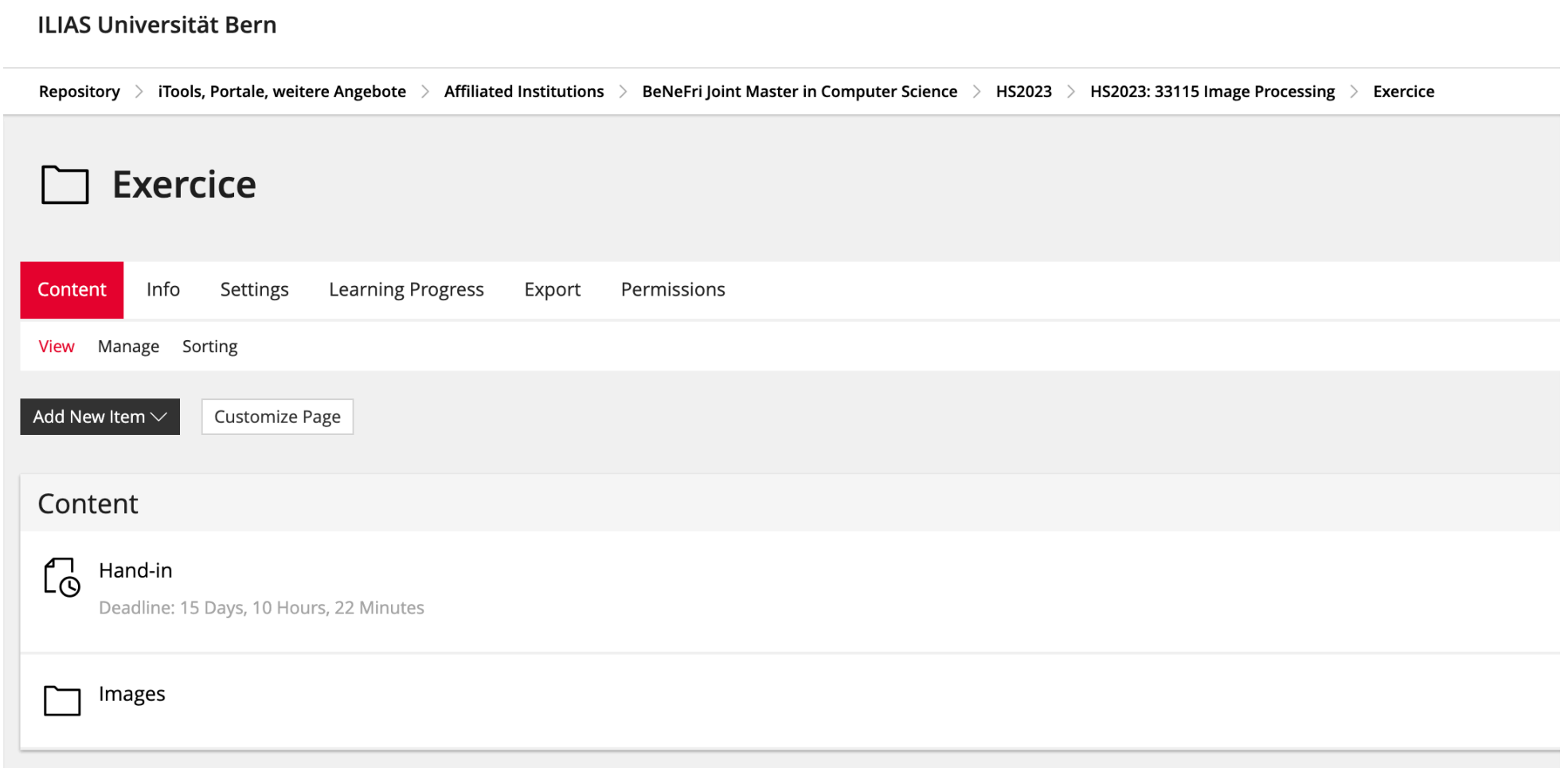
- During the semester you will be given several assignments that you have to solve **individually**.

- **80% of all** assignments are due and considered to be sufficient.

- Submit your work **before** the deadline even if not everything is working.
  - Just add a brief summary of what is and is not working and what you have tried.
  - If you can not submit your exercise, send us an email.
  - Please follow the instructions for hand-in

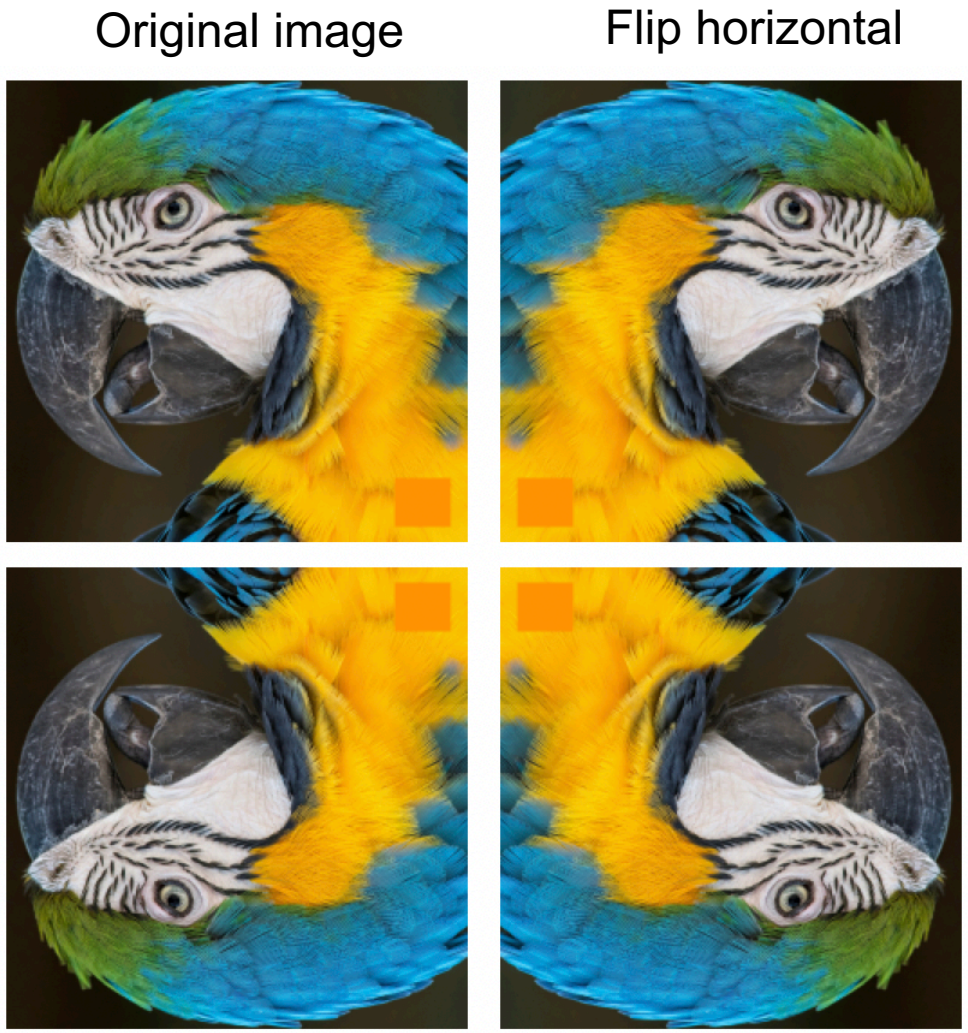
Assignment 1 – Flipping Images

- Deadline: Tuesday, October 3, 2022 (end of day)
- Instructions for assignment 1 are on ILIAS.
- “HS2023: 33115 Image Processing” → Exercise



Assignment 1 – Flipping Images

- Main part of assignment 1: **Implement your own flipping algorithm**
  - Your algorithm should flip an image horizontally and/or vertically.
  - Apply your algorithm one an image (example are provided on ILIAS)

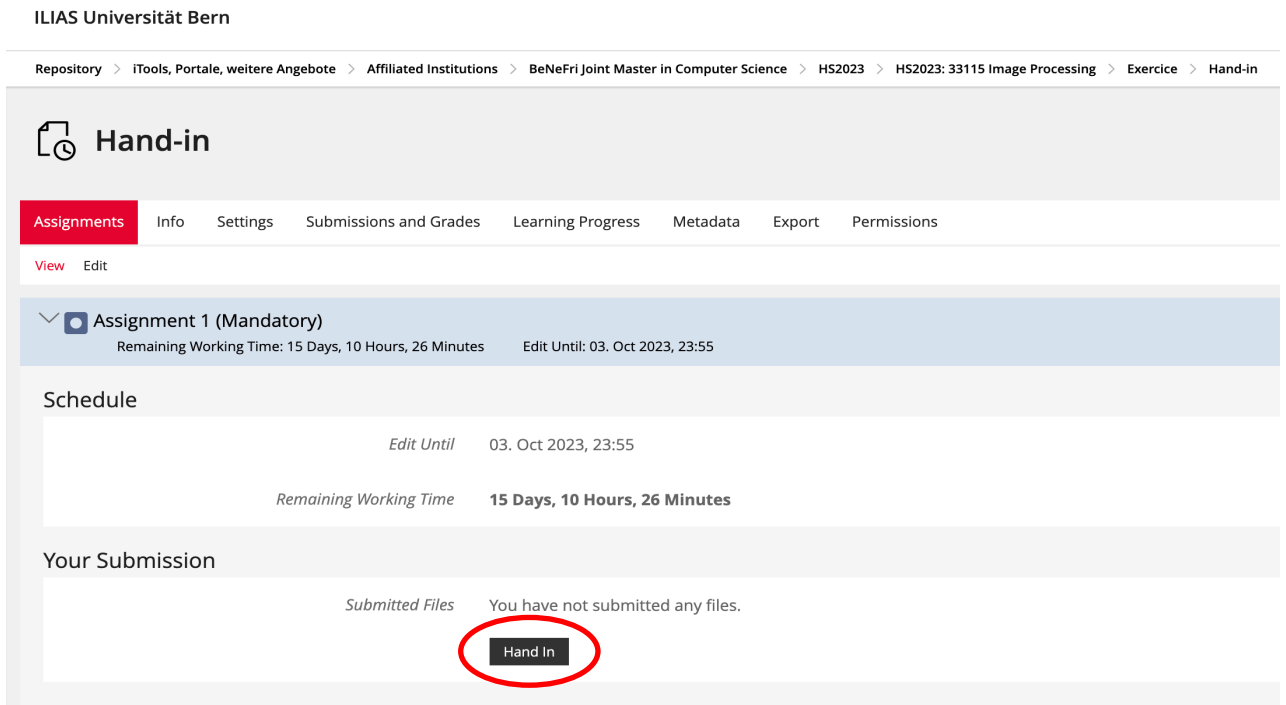


Assignment 1 – Flipping Images

- Create a program that can load, show and save image files
- Complete your program with a function that **can flip an image horizontally and/or vertically.**
- Write your **own algorithm** (without using a package).
- Your algorithm should be applied either vertically or horizontally or both together.
- Apply your algorithm on an image of your choices or one of the on ILIAS provided image: https://ilias.unibe.ch/goto_ilias3_unibe_fold_2851666.html

Hand-in

- You have to hand-in your solution on ILIAS only (no email).
- “HS2023: 33115 Image Processing” → Exercise → Assignment hand-in
- Submission:
  - one flip image horizontally and vertically,
  - the original image where you applied your flip algorithm,
  - a text file with your name, surname, the link to you GitHub, a brief description of your flipping algorithm.



Resources

- Tutorial “Create a Reproducible Research Environment”:
  https://github.com/lvoegtlin/ICDAR_CRRE_Tutorial
  - Especially the first two parts about Git and Conda environments are helpful:
    https://github.com/lvoegtlin/ICDAR_CRRE_Tutorial/tree/master/Part_1
    https://github.com/lvoegtlin/ICDAR_CRRE_Tutorial/tree/master/Part_2
- Pillow tutorial – Working with images in Python:
  https://pillow.readthedocs.io/en/stable/handbook/tutorial.html
- NumPy quickstart guide – Working with matrices in Python:
  https://numpy.org/doc/stable/user/quickstart.html

What to do if you are stuck?

- Try to look through the provided resources again
- Try googling it
- If you are still stuck, do not hesitate to email me directly:
  - anna.scius-bertrand@unifr.ch

Questions?