Department of Informatics

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S2024 Document Image Analysis

Assignment 1

Deadline: Tuesday, Marsh 5, 2023 (end of day)

Objective

In this assignments, you will create a small Python project that can load an image, apply certain image transformations, and save it back as an image.

Task: Down-scaling an Image

(a) Create a Python program that can load and save image files (see pillow package). If you want to use an IDE, we recommend PyCharm. Students can get PyCharm Professional for free via https://www.jetbrains.com/community/education

(b) In your program add a down-scaling functionality that can down-scale an image by factor of 3, e.g., a 600x900 image becomes a 200x300 image. This function should not use an existing method to down-scale the image e.g. Image.rezise(). You should write your own algorithm. However you can use an existing package to open and save an image.

(c) Apply your algorithm on an image. Some images are provided on ILIAS: https://ilias.unibe.ch/goto_ilias3_unibe_fold_2997197.html

(d) Submit on ILIAS (https://ilias.unibe.ch/goto_ilias3_unibe_exc_2997193.html):

- Your code (one file should be enough),
- Two images: the original image and the rezised image.
- A file text with your name, surname and a brief description of your algorithm.

Resources

- 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