Dear participants of the Deep Learning Course for Image Analysis,

this **in-person** course runs from **Monday, October 20th to Friday, October 24th, daily from approximately 9:00 to 17:00**.

Our goal is to teach you how to use and evaluate deep learning for image analysis of microscopy images using PyTorch, a Python library for deep learning, and other popular tools. The course includes lectures, exercises, and a project utilizing participant data. Basic Python knowledge is required (see resources below).

Practical Information & Location

- **Location:** ENI (Griesebachstraße 5, Nord Campus). Please enter from the back entrance of the building.
- **Timetable/Map/Preliminary info:** Find the online Timetable, a map, and other information here **Timetable**.
- **What to Bring:** Your own laptop (no software installation needed; we'll use GWDG resources).

Before the Course: Action Items

1. **Check GWDG Login ASAP:** Confirm access to the computing resource. Go to **https://jupyter.hpc.gwdg.de/** and log in with your AcademicCloud. Contact us immediately if you have problems.
2. **Prepare Project Data:** Bring data you want to apply the methods to. Please upload it to your ownCloud or similar cloud storage.
3. **Recap Python Basics:** Familiarize yourself with Python basics, data science (especially NumPy), and basic image processing in Python (e.g., *skimage* examples like Thresholding, Connected Component analysis).
    - Python basics: **https://www.learnpython.org/en/Welcome**
    - Data Science in Python: **https://jakevdp.github.io/PythonDataScienceHandbook/**
    - Image processing in python: Check some modules of the course **Basics Bioimage Analysis** and the “skimage napari” examples within
4. **Optional Background:** Watch last year's machine learning videos: **https://owncloud.gwdg.de/index.php/s/ajgmYEkpwmRcbt9**

We look forward to seeing you! Please reach out with any questions.

Initial draft:

Our course will start on Monday 20th of October. Our goal is to teach you how to use and evaluate deep learning for (microscopy) image analysis. The course will consist of lectures, exercises and a project, in which you will work on data from you or another participant. We will learn how to use popular tools and use PyTorch, a Python library for deep learning. You should have some Python knowledge to participate, see below for some resources to improve your Python skills.

The course will run from the 20th to the 24th of October and will be in person. It will run from ca. 9:00 to 17:00 each day and will take place at the ENI (Griesebachstraße 5, Nord Campus). On the online Timetable you can also find a map of the ENI, a photograph on which entrance to use (the back entrance), and a link to the GitHub repo we will use during the course.

You have to bring your own laptop to the course, but you don't need to install any software on it. We will use resources provided by the GWDG.

Before the course:

- As soon as possible, check that your login to the GWDG computing resource works. If you encounter problems please contact us before the course. From a browser go to https://jupyter.hpc.gwdg.de/ . Login on the website with your AcademicCloud. You should land on a page that looks like this

- Prepare some data you would like to bring to the course to apply the methods we introduce you to to it. Some of you have done this already in preparation for the previous course data in June.
    - Please Upload the data you want to bring to your ownCloud or a similar cloud storage.
- Recap the basics of Python programming, if you don't use Python regularly. Here are some links for topics you should be familiar with:
    - Python basics: https://www.learnpython.org/en/Welcome
    - Data Science in Python: https://jakevdp.github.io/PythonDataScienceHandbook/ (here especially the part on NumPy is important)
    - Some image processing in python. Good starting points are the modules in the course Basics Bioimage Analysis and the "skimage napari" examples within (e.g. Thresholding, Connected Component analysis, Object Intensity Measurements)
- Check out these videos we prepared for last year's course to give you some background on machine learning: https://owncloud.gwdg.de/index.php/s/ajgmYEkpwmRcbt9

Looking forward to the course, please reach out with any questions.