



Welcome to the “Deep Learning (L+E)” examination on
June 14, 2024, from 08:00 to 10:00

Please read carefully!

1 General information about the examination

- The examination is carried out as a Bring-Your-Own-Device exam.
- The room for this examination is **HAH-E-03**. Please arrive at the location **at least 15 minutes before the examination starts**. Physical presence will be recorded, **you need to bring your student id card**. You will be seated.
- The exam will take place directly in the OLAT examination environment.
- Log in from 7:45 at <https://fs.epis.uzh.ch/dmz> with your edu-ID.
- Start of examination: **08:00**
- Exam time: **115 minutes**
- Maximum number of points achievable in the examination: **96 points**
- The distribution of questions/points is as follows:
 - 22 / 96 from true/false questions, which are in randomized order
 - 26 / 96 from free text questions
 - 48 / 96 from code implementations in Jupyter notebooks
- Unless otherwise noted, the notation and the assumptions made in the lecture and exercise apply to the questions.

2 Resources

- This is an open book examination, i.e., you may use teaching materials or other documents, but you do not have to. In any case, you must adhere strictly to the time constraints.
- The use of generative artificial intelligence such as ChatGPT and similar tools is forbidden. Violations will be punished as examination fraud.
- Collaborations of any kind during the examination and the use or attempted use of any means capable of serving this purpose is not permitted. This includes, for example, chats, text messages, e-mails, or any other means of jointly solving examination tasks or exchanging results online.
- The following tools are recommended:
 - Student ID card (Legi)
 - Beverages and food
 - All learning materials (scripts, lecture slides, exercise materials, books, etc.)
 - Online documentation of PyTorch: <https://pytorch.org/docs/stable/index.html>
 - Google Colaboratory: <https://colab.research.google.com>
 - OR local installation of python, PyTorch, jupyter, as well as a text editor/browser



- Local installation instructions:
 - If you plan to use Google Colaboratory, you can skip this part entirely.
 - Install Conda for your operating system: <http://docs.conda.io/en/latest/miniconda.html>
 - Open a console with Conda support (e.g. an Anaconda Prompt)
 - Create a local environment: `conda create --name DL python=3.10`
 - Activate environment: `conda activate DL`
 - Install packages: `conda install numpy scipy pytorch torchvision pytorch-cuda=11.8 matplotlib jupyter -c pytorch -c nvidia`
 - Run from console (opens in web browser): `jupyter notebook [file].ipynb`
 - Alternatively: set up Jupyter notebook to work with your preferred text editor, e.g. Visual Studio Code: <https://code.visualstudio.com/docs/datascience/jupyter-notebooks>
 - Finally, the Jupyter notebooks are set up such that they automatically download the data for the exam.

3 Supervision

- There will be supervision during the examination.
- Wearing headphones is not permitted. Violation will be punished as examination fraud.
- In principle, you are not allowed to leave the room during the exam. However, if you must do so due to a reason that cannot be postponed, please contact the examination supervisor.
- You cannot hand in and leave the exam early. Please remain seated until the exam is officially over.

4 Examination questions

Text questions with direct input of the answer (9 questions, total 26 points)

- Keep answers short.
- No special characters may be used at the beginning of the line.
- Structured text can be added if desired. Especially, LaTeX markup to write equations can be used. If mathematical notation is required, you can also write them in ASCII characters. For example, $\frac{\partial a_k}{\partial w_{k,d}}$ can be written as `dak/dwkd` or `d a_k / d w_k,d`. Use parentheses in case of ambiguities. Any recognizable equation will be counted.
- Attention: The automatic saving only takes place every minute. Click on "Submit answer" in time before the end of the exam to save your submission.
- Attention: Always save before going to the next question, otherwise the last autosaved version is in the system as the solution.
- **Evaluation:** The points per task are explained in the respective question.



True/false questions (4 questions, total 22 points)

- For the true/false questions, the accuracy of 5-6 statements must be assessed.
- For each statement, you choose whether to classify it as true or false or whether you do not want to answer it at all.
- **Evaluation:** 1 point is awarded for each correct answer. **0.5 points are deducted for each incorrect answer.** If no answer is given, 0 points will always be awarded. A question cannot end up with a negative overall score.

Single-choice questions (10 questions, total 48 points)

- Single-choice questions are mainly used to structure the **coding tasks**. There are no points given for answering these questions. **Points are provided for the implementation of the answers into the provided Jupyter notebooks that need to be uploaded at the end of each assignment section using the file upload questions (see below).**
- For single-choice questions there is **one statement for selection**, of which only **one is applicable**.
- In all single-choice questions, please indicate whether you have included the implementation into the Jupyter notebook.
- **Evaluation:** Points are given only for the implementation that is uploaded in the file upload task. Even when you did not indicate that the solution is included, points will still be distributed for correct implementations.

Questions with file upload (3 questions, total 0 points)

- Here, Jupyter notebooks containing all implementations from the current section will be uploaded, **one for each section**.
- For the questions with file upload, the solution to an entire assignment must be uploaded, including the answers to several single-choice questions as defined above.
- **There is no need to wait for any network training to finish.**
- If you use Google Colaboratory, **make sure that you have downloaded the file first, in form of the .ipynb notebook.**
- If you are using your local installation, **make sure that you have saved the file first, before uploading.**
- **Upload** the file by clicking in the upload field and selecting the desired file.
- **Click** on “Submit answer” to submit the file definitively.
- **Evaluation:** The points per task are explained in the respective single-choice sections (see above).



5 Temporary storage, end of examination and submission of the examination

- During the regular examination, after each question is completed, your answers are automatically saved as you click “Submit answer”.
- Answers can be given in an arbitrary order. You can use the navigation bar on the left to switch between Assignments and Tasks. Tasks that are finished are marked with a green hook. **It is advisable to work on the easier assignments/tasks first. It might be worth keeping the implementations toward the later part of the exam.**
- Once you have answered all the questions, the “Finish test” button will appear. Clicking the “Finish test” button will end the examination and you will **not** be able to change your results. With this in mind, only press the “Finish test” button if you are sure that you definitely want to submit the questions.
- If the time runs out without having pressed "Finish test", the examination will be automatically ended. The "Finish test" button will no longer appear.
- Please note: If you still have a question in progress at the end of the examination time, it will **not** be taken into account or saved. With this in mind, do not exceed the examination time under any circumstances.
- The filling out and completion of the MC questions must take place within the examination time. The end time no longer belongs to the examination period (i.e. submissions accepted until 09:59:59).
- Files must be uploaded within the examination period. At the end of the exam, the uploaded documents are automatically collected. The end time no longer belongs to the examination period (i.e. submissions accepted until 09:59:59).
- Only exam solutions that are submitted within the duration of the exam via the examination platform will be accepted (**alternative submissions via e-mail or similar afterwards will not be accepted**).



6 Code of Honor

Please read this Code of Honor carefully before you start the official assessment. With your confirmation, the University of Zurich (UZH) assumes that you are aware of its content as well as the possible consequences of any academic misconduct.

A. Academic Misconduct

Academic misconduct as laid out in the Framework Ordinance of your Faculty is constituted by fraudulent or dishonest action.

Students at the UZH are committed to upholding honesty and integrity. In particular, this means that you must comply with the following principles:

1. You may not claim someone else's work as your own.
2. You may not use unauthorized aids or receive or provide inadmissible support when completing official assessments.

B. Measures and Consequences

1. Please be aware that the UZH may, according to the prevailing legal provisions, take organizational and technological measures to detect and document academic misconduct during official assessments.
2. Any academic misconduct during an official assessment will result in a failing grade.
3. Disciplinary proceedings may be initiated against you for academic misconduct. Disciplinary measures for academic misconduct may include temporary exclusion from the UZH.

C. Confirmation

"I hereby confirm that I will complete this official assessment myself and will not receive any inadmissible support."