

## Exercise Instructions

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There are 3 sets of exercises in total and for each one you have 60 minutes to solve. **No one is expected to finish all 5 problems in each exercise's session.** Exercise sessions have been designed so there is something for each level of pre-knowledge in statistics/ML and programming. You are free to choose any programming language to solve the problems, knowing that the solutions will be provided in `python`. The last set is divided into two different versions, **3a**, for beginners/intermediate students, and **3b**, for advanced ones.

When devising the exercises, we thought about three students levels. See which one suits you best:

- **Beginner level.** Concepts discussed during lectures are new to you. You don't have many experience with classical Machine Learning. You are expected to try solving Problems 1 & 2 in each set of exercises, and to do **3a** for the last set. If you finish before the time is up, feel free to move on to the next problem! If you get stuck ask us for help or if we are busy ask colleagues that are at the intermediate or advanced level.
- **Intermediate level.** Concepts discussed during lectures are known to you. If some are new, you feel confident that you understand them. You have some experience with classical ML and Deep NN. You are expected to try to solve most problems in each set of exercises, apart from the ones marked with a \*, and to do **3a** for the last set. If you finish before the time is up feel free to move on to the advanced problem!
- **Advanced level.** You should be giving the lectures instead of us! You have a solid background with the topics covered in the lectures. Feel free to skim through the exercises set 1 and 2 and see if you can solve the problems marked with a \*. You can also tackle **3b** for the last set, even though **3a** could still be a good refresher. We look forward to your solutions.

**The most important thing is that you understand what your code does and what is needed to get to the final solution.** You are free to help yourselves with Google, Stack Overflow, and even with Copilot/ChatGPT! Be mindful of how you interact with these tools: you should only offload simpler tasks to them while you are building the bigger picture, trying to get to the final solution.

It is also strongly encouraged to discuss the code and the results among yourselves. You will be working in pairs, but please also discuss with other groups. Especially those that are dealing with the same problem as you are. We will be roaming around trying to help as much as we can.

The last 5/10 minutes of each exercise session are reserved to discuss results. We will show you our results and discuss some of the problems or difficulties you have encountered. Solutions in `python` will be provided after the exercises are finished, but we strongly advise you not to look at them until you have tried a bit more to solve them yourselves. We are also happy to discuss the exercises outside our exercise sessions.

And one more important thing... **Have fun** and we hope you **learn something new and useful!**