Statistical Computing with R

Lecture 14: information about the exam + question time + practice exam

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Information about the exam

Where and when

- ▶ Exam dates:
    1. exam: January 4 (Thursday) from 9.00 onwards
    2. resit: January 25 (Thursday) from 9.00 onwards

- ▶ Exam duration: usually between 2.5 and 2.75 hours (depending on exam length - you will be informed of the exact duration at the start of the exam)

- ▶ Rooms: see myTimeTable. I will send an announcement about the room you should go to a few days before the exam (once I get the list of registered students)

Exam registration

- Please make sure to register for the exam / resit, if you plan to attend it (at least 10 days before the exam date)

- NB: exam registration is completely managed by the Science Student Administration (SSA), and I cannot help you solving problems about it. If you have issues with exam registration, please contact SSA instead of me ☺

What can I expect?

- The exam will have a structure similar to that of the practice exam

- It will comprise exercises (between 2 and 4) similar those seen during the lectures and coding sessions

- Write your solutions using `R` Markdown on your own laptop and create a `pdf` report with your solutions
    - If there are questions involving mathematical notation, you are allowed to answer them using pen and paper (but you may also answer them using LaTeX inside `R` Markdown!)

- At the end of the exam, please don't forget to:
    1. submit both the `Rmd` source file and the compiled `pdf` through Brightspace
    2. hand in the exam sheet to the invigilator

What should I bring?

Remember to bring along:

1. your LU-card (for identification purposes)
2. if you have been granted the right to extra time: the "green pass" that certifies that
3. a pen
4. a laptop with R and RStudio installed
5. a local copy of the lecture slides, without notes / comments added to it

Please make sure that:

1. you are able to compile R Markdown files to pdf
2. you have a working connection to the WiFi network to upload your solutions to Brightspace

What are we allowed to use?

During the exam, you are allowed to use the following things:

- ✓ `R`, RStudio, functions' help pages

- ✓ pen & paper (if an exercise involves math notation / derivations)

- ✓ lecture slides without any notes / annotations. Please download the pdfs with the slides to your laptop before the exam, and use the local copy you downloaded - you are not allowed to consult them through Brightspace!

- ✓ internet: only to download exam datasets (if any) at the beginning of the exam, and to upload your solutions at the end of the exam

What things are forbidden?

What is not allowed?

✗ using exercises and solutions of the coding sessions

✗ using any other file (scripts, notes, ...) beyond the lecture slides

✗ using any generative AI tool (ChatGPT, Bard, ...)

✗ smartphones, tablets, using internet on laptop

✗ copy / ask for help from a fellow student

✗ and everything not explicitly allowed in the ✓ list

Invigilation during the exam

- Background: the advent of generative AI has made invigilation during exams more challenging and complicated

- This is particularly true for exams (like ours) where a laptop is needed

- For this reason, during this exam invigilation will be stronger than usual, with random checks to ensure that you are only using allowed material:

  1. invigilators may ask you to control your laptop at any moment, so that we can check that you are not using forbidden material / resources

  2. please cooperate with any request from the invigilators

- Notice that cheating will not be tolerated. If discovered, cheating cases will be reported to the Board of Examiners

Information about the exam

FAQs

Question time

Practice exam

FAQs (1)

- Can I use cheatsheets / handwritten notes? Can I use annotated slides?
  - No, this is not allowed
- Can I use any form of generative AI (ChatGPT, Bard, . . .) to generate code?
  - Absolutely not. This is not allowed, and we will be performing checks during the exam to verify that you are not using any generative AI tool

FAQs (2)

- In Lecture 10 we saw examples of how to write a (log-)likelihood function. Are we expected to know how to do that?

  - Yes. Likelihood theory was covered in Probability and Statistics (course prerequisite), and you are expected to know how to apply it by now

- In Lecture 10 you showed how to optimize functions both analytically and numerically. Are we expected to know how to solve such problems analytically (when possible)?

  - Yes. Derivatives and analytical optimization were covered in Mathematics for Statisticians (course prerequisite), and you are expected to know them by now

- Do I need to know how to write such analytical derivations using LaTeX formulas inside the R Markdown file?

  - No, that's not expected from you. You may answer questions involving analytical computations using pen and paper

FAQs (3)

- What if some exercises require external files that we need to import in R?
  - If that happens, we will make such files available at the beginning of the exam

- If the exam comprises an exercise involving the EM algorithm, can we use the extra script that you used during lecture 11 to estimate the EM from multiple starting points?
  - No, because you will not need it. Should mixture models / the EM be part of the exam/resit, it will be for shorter tasks - you will not be asked to estimate an EM using multiple starting points

FAQs (4)

- Can I use functions from `R` packages not discussed during the course?
  - Please keep this to a minimum, doing it only if you believe that it's truly necessary. If you do that, please add an explanation of why you think it was necessary. The exam is designed to test the knowledge that you gathered during the course, so please make use of the things we saw in the course during the exam!

- Can I submit an `html` report instead of a `pdf` one?
  - No, because the `pdf` format ensures that we grade exactly the same document that you saw upon submission, and it's also better for the archiving of the exam. Please make sure (before the exam) that you are able to compile `Rmd` files to `pdf`!

Question time

- Any further exam-related question?
- Questions about course contents?

Practice exam

- We have made a practice exam available through Brightspace
- Goals of the practice exam:
  - give you an idea of how the exam will be structured
  - make sure you read the instructions at the beginning of the exam! They explain how to prepare and submit your solutions