## Self-reflection report on the use of large language models

Utilizing ChatGPT in our work brought about several benefits. One advantage was its capacity to resolve minor coding errors that occasionally occurred while addressing the more substantial challenge of the exercises. Additionally, it also was very valuable in solving error messages by offering potential solutions and helpful tips. This both enhanced our productivity immensely. However, although error-solving can be very time-consuming, it can still be very insightful to figure out by yourself what causes the errors in your code, to get a more thorough understanding of your code. This understanding can be slightly undermined by ChatGPT, since it figures out the errors for you. It is important to acknowledge that ChatGPT is an aid, not the solution. Caution needs to be exercised to prevent excessive reliance on the tool.

The extent to which ChatGPT can be harmful depends on the nature of the question posed to it. When dealing with theoretical subjects (especially if they are extremely specific within a certain field), we believe the tool has a negative impact. Rather than encouraging students to engage in extensive literary research and develop skills like critical reading and the ability to comprehend complex academic texts, it opposes to do so. In addition, the given information by ChatGPT is sometimes also incorrect or not well-founded with literature sources. Besides, the training data only includes documents up until September 2021, so any new research or coding tools are not taken into consideration when generating an answer. The tool can sometimes be helpful however when answering simple, generic questions that one may have forgotten, for example how a certain grammar rule worked.   
ChatGPT can also be useful in providing writing assistance. This can be educational if the user thinks about why some corrections are suggested and how to remember errors made for next time. Furthermore, by offering academic phrases, terms, and sentence structures, students’ academic vocabulary and writing skills can be improved. Students’ creativity may be compromised however when offering writing assistance, since the student may no longer think themselves how to formulate a sentence.  
In the context of resolving programming queries, ChatGPT can be a powerful asset. It boosts moral and presents the user with alternative approaches to solving programming errors/issues, thereby greatly benefiting the user. However, when ChatGPT is used to code entire programming assignments, the user will not learn any new programming skills and the code may also not be entirely correct for the assignment provided.

Regarding our productivity, we saw a significant boost by using ChatGPT. Rather than getting stuck by minor, easily resolvable errors such as missing commas, we could allocate more time and focus to addressing the bigger challenge of our weekly assignments. It was for example useful for attempting to better understand the question asked. We sometimes ran into the issue that questions within the weekly assignments could be interpreted in multiple ways. ChatGPT helped in getting a better understanding of what the question was. It was also useful in providing methods to visualize multiple figures in one. It was also useful for example in solving the issue in one of the exercises in which a file could not be found by the code, because an appended string could not be read.

The overall accuracy of ChatGPT in solving errors or providing partial answers, were accurate in our case. The provided code frequently required modification/adaptation to align with our code and there is a need to cross-verify any given code obtained through the tool. Nevertheless, ChatGPT excelled in providing us with foundations upon which we could refine our solutions.