

Due March 19th , 5 pm

1. Title: Recreating up to date code in an out-of-date system
2. Research Question: Can we teach ChatGPT 3.5 how to use a custom function from 2024 when generating a script?
3. Objective: Our goal is to inform the out-of-date ChatGPT 3.5 with custom R-code and see if ChatGPT 3.5 can reproduce the work
 - a. Generate workable R code and inform ChatGPT of the code and its appropriate use
 - b. Can we improve reliability (workability) by reducing the variability of output?
 - c. Apply this analysis to current work
4. We will approach this case by using a functional r-code to complete an image analysis of organoids in which case we will feed ChatGPT with the information piece wise to inform the system. We hope to teach ChatGPT3.5 a new code, in turn it can use when returning to the chat at a later itme. We will then ask for a code to analyze the organoid size, structure, and morphology then produce a graph in hopes to develop an organoid anallysis method that is not currently available. We will look for variability in outputs by comparing GhatGPT produced code to functional R-code.
 - a. Does it save info from one chat to another?
 - b. Is it similar between human outputs (Is the output different depending on the person inputting?)
5. Selected References: (2 for prospectus and 12 for final)
 - a. Non article: (<https://outloud.co>), O. (2023, October 3). Chatgpt0-3.5: An overview and limitations. Blocshop. <https://www.blocshop.io/blog/chatgpt3-5-limitations>
 - b. Coello CEA, Alimam MN, Kouatly R. Effectiveness of ChatGPT in Coding: A Comparative Analysis of Popular Large Language Models. Digital. 2024; 4(1):114-125. <https://doi.org/10.3390/digital4010005>
 - c. Shoji, J., Davis, R. P., Mummery, C. L., & Krauss, S. (2023). Global meta-analysis of organoid and organ-on-chip research. *Advanced Healthcare Materials*. <https://doi.org/10.1002/adhm.202301067>

Data:

- Required to save conversations (clipboard icon for ChatGPT only not prompt: save prompt and output)
- Copy code from ChatGPT and paste into a text file

Performance of ChatGPT, human radiologists, and context-aware ChatGPT in identifying AO codes from radiology reports

<https://www.nature.com/articles/s41598-023-41512-8>

Empirical assessment of ChatGPT's answering capabilities in natural science and engineering

<https://www.nature.com/articles/s41598-024-54936-7>