

Student: Sami Zadoud
Teacher: Dr. Gabriel Vigliensoni

CART 498 C 2244 – Gen AI
Due: Wednesday, 05 February 2025

Arithmetic Assistant - The Worst Mathematician Ever

The bot is likely failing due to the *max_completion_tokens=60* parameter, which restricts the length of the responses it can generate. In the case of this model, it is limiting when dealing with more lengthy calculations. Essentially, what is asked from us is to $n.pow(n.pow(i))$, which can twice exponentially ramp up. As a result, the model might not be able to process or deliver the required information in the limited token range. This is what lead the ai to incomplete or erroneous results.

Additionally, the way the bot is constructed, it can take either an arithmetic task, or the request to self-deprecate. The combination of two tasks could further reduce the available tokens for the actual result needed for the task is prompted. The two applications on the model could cause confusion.

To improve the bot's performance, *max_completion_tokens* need to be increased. A stronger mathematical logic could also improve the correlation between the Python code and AI calculations.

157 words