EE/CprE/SE 492 WEEKLY REPORT 6

4/3/2025 – 4/17/2025

Group number: 42

Project title: Grid GPT 2.0 AI Virtual Assistant

Client &/Advisor: Dr. Gelli

Team Members/Role:

Luke Eitzmann - Power Co-Lead

Ian Louis - Power Co-lead

Scott Rininger - Power Co-lead

Aditi Nachnani - Full Stack AI Co-Lead

Ian Bussan - Full Stack AI Co-Lead

- **Weekly Summary**
  - We got together as a group and created a game plan for our client meeting. The Grid team began integrating our altDSS code with the openDER library. Our goal is to use altDSS to get the needed information to utilize openDER for useful applications. The Grid team also worked on implementing code from the AI team into dso_GPT. The AI team continued the development of gpt models, improving the context models to make GPTs models more accurate. The AI team also worked on compressing context and masking models for accurate context models.

- **Past week accomplishments**
  - **Luke Eitzmann**: Succeeded in implementing certain functions of altdss into altdss_interface.
  - **Ian Louis**: Ian finished implementing the VPP script using altdss. He will now work on implementing the VPP using openDER. Ian also finished code to prompt the user to input the needed information.
  - **Ian Bussan**: Implemented a masking model for user questions not to show sensitive data to OpenAI. Also connected db-gpt docker application to Go Backend endpoint to seamless connect.
  - **Aditi Nachnani**: Worked on fixing bugs and issues with dss_gpt - the params were

not getting passed through the code properly so worked on fixing that. Also addressed the issue of efficiently sending context to the LLM - modified the code so only question relevant context is passed by compressed documents.
- **Scott Rininger**: Took code from the AI team, studied the code, and worked to implement the code to connect OpenAI with dso_GPT.

- **Individual contributions**

NAME	**Individual Contributions** *(Quick list of contributions. This should be short.)*	**Hours this week**	**HOURS cumulative**
Ian Bussan	Added masking model for user questions, Added Go backend endpoint.	8	44
Ian Louis	Implemented VPP using altdss. Wrote a script to prompt the user for input needed to run the VPP script.	8	44
Aditi Nachnani	Fixed issues with params, worked on compressing documents	8	44
Luke Eitzmann	Implemented new functions into altdss_source code	8	44
Scott Rininger	Implemented code from the AI team	8	44

- **Plans for the upcoming week**
  - **Luke Eitzmann**: Continue to implement new functions for altdss_interface.
  - **Ian Bussan**: Will continue to develop db-gpt, will improve the accuracy of the model, and will use the newest neo4j model. Will also add Firebase context management.
  - **Aditi Nachnani**: Aditi will continue working on dss_gpt. Currently, the code compresses everything in the folder. The client wants to change that so it compresses the masterfile first, then reads the other dss files in the folder if needed (if the question cant be answered using the master file). Also work on caching context if possible.
  - **Ian Louis:** Ian will continue working on the VPP script. His goal is to finish the portion of the script that utilizes the openDER interface.
  - **Scott Rininger:** Write test cases for the AI team. Learn about LangChain and how to implement it into dso_GPT.

- **Summary of weekly advisor meeting**

- Our team met with Dr. Gelli on 3/14 and 3/28 to discuss our progress so far this semester. Ian Louis discussed his progress with integrating the VPP optimization script with OpenDER. He currently has the VPP working with altdss library. Luke discussed complications with converting from py_dss to altdss, and Dr. Gelli was able to provide helpful instruction for him. Dr. Gelli was satisfied with their progress and plan for DSO_GPT. Scott presented his code for integrating openAI into dso_gpt and discussed plans for moving forward. The AI team got feedback about our implementation of db-gpt and dss-gpt. Dr Gelli told us to work on context state management. After finishing that, Dr. Gelli wants us to set up firebase to store and retrieve messages.