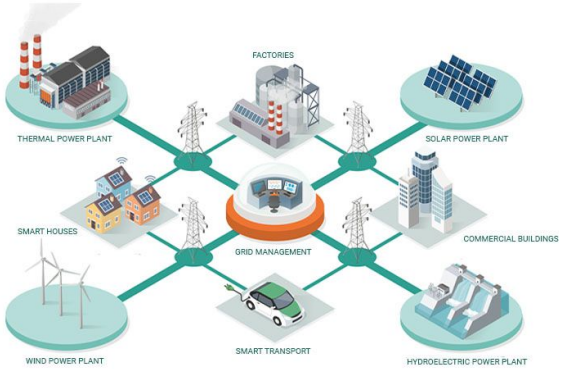
Lightning Talk 3

SD-May25-42

Project Overview

The goal of our project is to develop an AI-driven virtual assistant that integrates with GridAI, assisting our users with understanding and interacting with complex electric power grid data to make well informed decisions.



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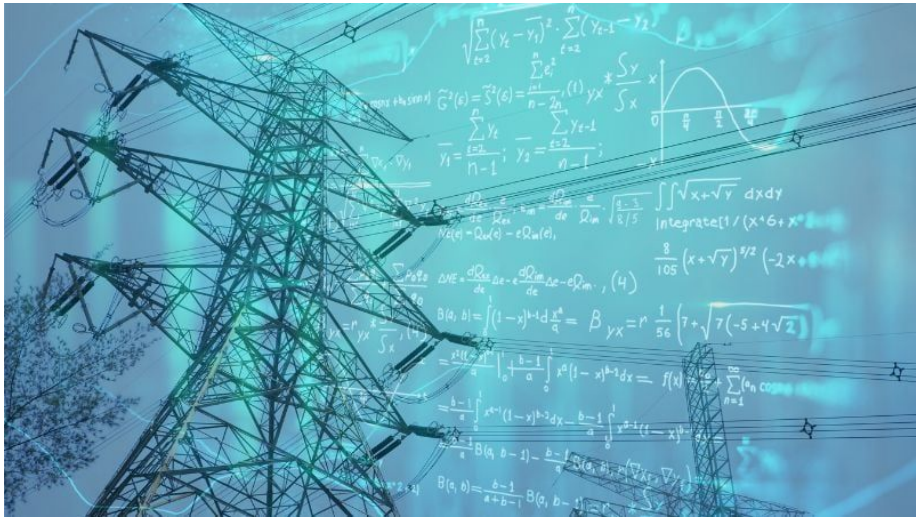

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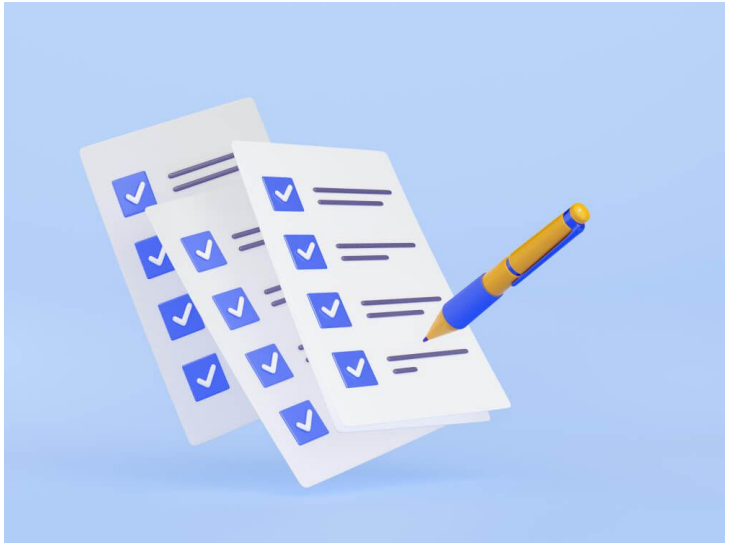
User Needs

- **Utilities**
  - Utilities need to be able to accurately forecast load and generation
  - Utilities need information about how to group DERs together to form aggregate DERs
- **Independent System Operators (ISOs)**
  - ISOs also need to be able to accurately forecast load and generation.
  - ISOs also need to be able to accurately price the electricity in the market based on forecasts
- **Prosumers**
  - Need accurate information about how much money they will generate from their rooftop solar or wind

https://www.ifleaderboard.com/profile/9523/miso

Functional Requirements

- The system must interact with GridAI to retrieve, process, and present grid data to users.
- The AI assistant must be able to interact with grid modelings software like OpenDSS



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Non-Functional Requirements

- **Performance**
  - The system should be able to process natural language queries and produce responses within a few seconds.
  - The system should handle multiple threads of user requests without significant degradation in performance.
- **Scalability**
  - The system should accommodate an increasing number of users and grid complexity
- **Usability**
  - The system must be easy to use and allow users of varying technical skills to interact with the system effectively

Engineering Standards

- **IEEE 1547**
  - This standard covers how DERs will interconnect to the grid
- **IEEE 3081**
  - This standard covers the electricity market operations. Which will be important to the Independent system operator persona
- **IEEE 2030**
  - This standard covers smart grid operations. Which will be important for utilities and prosumers as most DERs are part of smart grids.

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Conclusion

- Use GPT models to analyze and modify DSS files
- Prompt GPT to analyze data from files for users and calculate metric and data for its users
- Have Interface for each user type to interact with GPT models and display relevant information