Contextualization / Design Check-in

SDMay25-42: GridGPT 2.0
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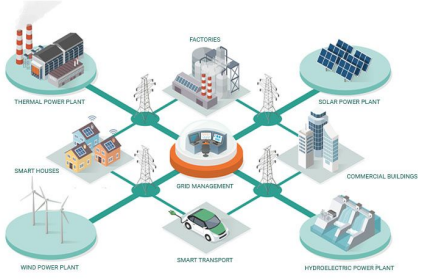
Project Overview

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.



AI and **IoT-Driven** Smart Grid Technologies for Smart Energy Management

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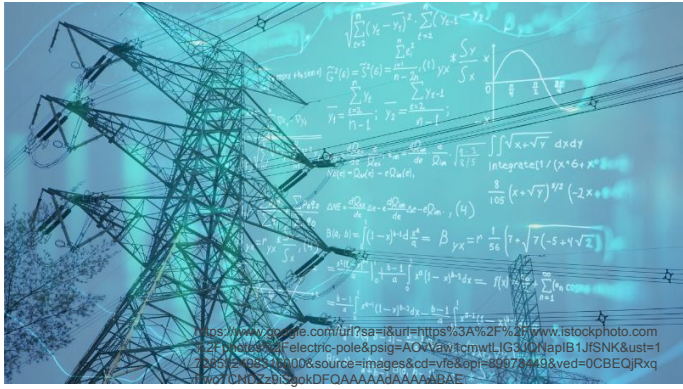
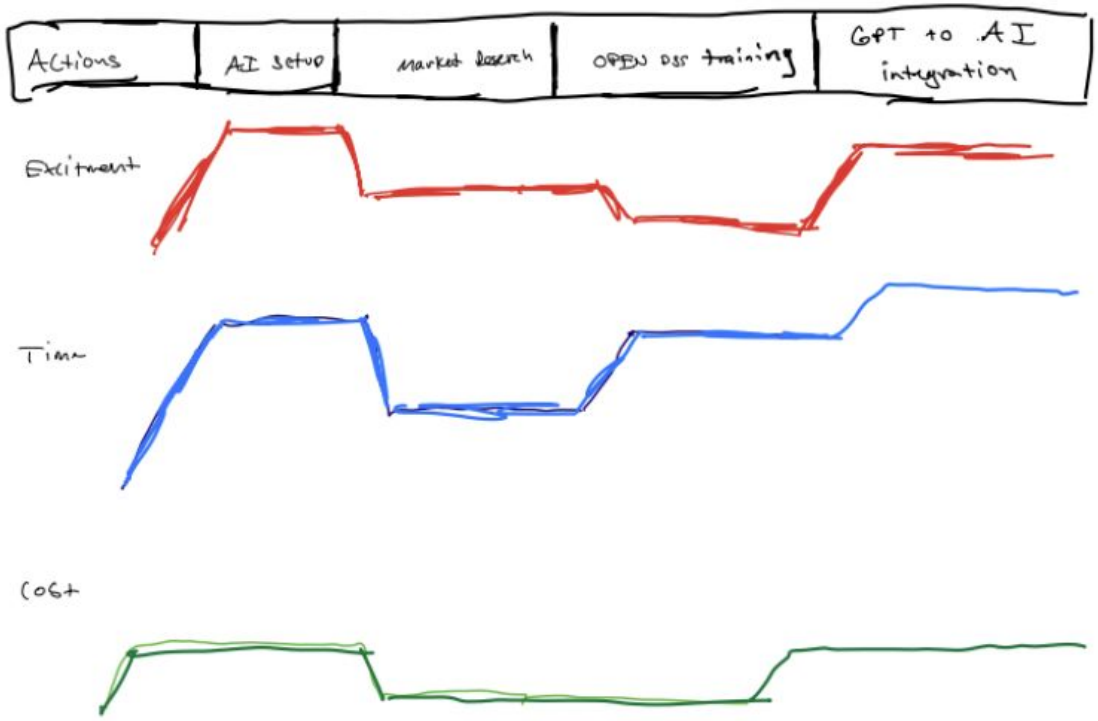


Journey Map


Actions
AI setup
market research
OPEN ASS training
GPT to AI integration
Excitment
Time
Cost

Pros/Cons Table

	Gridscale X	Opus One	AutoGrid
Pros	It offers distribution energy resource management as an additional feature to an already complete and powerful grid management software. Has automated grid model creation features to save time.	Is capable of forecasting and anticipating grid violations and can provide solutions.	Does demand response, Grid to Prosumers, Virtual Power Plants, Energy Asset Management, Microgrid Management, EV Grid Service.
Cons	Very expensive. Relies on simulations to match real-world power grid behavior. You have to give your grid data to the software company.	Complicated softwares like this can come at a high price, and when forecasting solutions, there is the possibility that the forecast is wrong. It's also	Expensive to buy. Struggles with multiple power sources. Uses AI which may be unreliable.

Technology Complexity Analysis

Technical complexity analysis

- Internal complexity
  - Large Number of technologies Involved (OpenAI, OpenDSS, Python)
  - Team unfamiliar with Technology(Never heard of OpenDSS)
  - We don't have access to certain project requirements (GridAI)

- External complexity
  - Lacking testable data
  - Lacking access to clients
  - Resources that are outside our understanding

Human

- Our current solution addresses the user needs by allowing easy access to results. This is done with LLM in a combination of grid models. Specifically, using NLP to help the user get fast and easy-to-understand results. One change that might improve the solution is reducing the scope of the problem so the solution can be more focused on

Economic

- Our solution is better than existing solutions because our LLM will be fine-tuned, which will eliminate errors and be more reliable. Our software will provide more in depth information about power grids and be less general like our competitors. By ensuring that the model is well-trained, we can eliminate any potential inaccuracies that other software might have. Moreover, this solution will be cheaper than other products since it does not use complex software, making it more appealing to customers.

Technical

- The internal and external complexity showcase the expertise we have developed using AI tools and grid-related applications. These include OpenAI, OpenDSS, Python, and GridAI. We have overcome internal and external complexities by researching technologies.

Conclusion

- Our project has provided internal and external complexities, such as our lack of knowledge on certain softwares, and our lack of testable data.

- Our Solution offers easy access to results, will be fine tuned for increased reliability, and will be cheaper than competitors due to our less complex software.