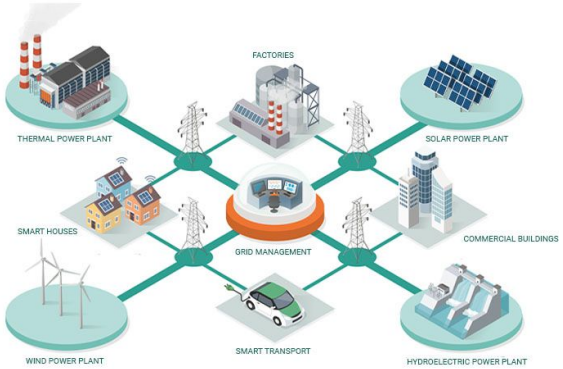
Lightning Talk 2

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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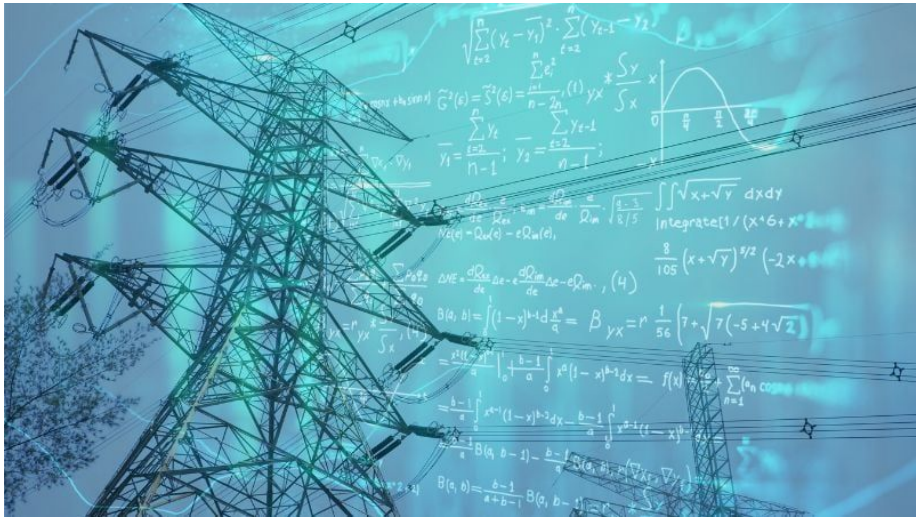

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Problem Statement

While the power grids are becoming more complex, the effort of managing them also is becoming much more complicated. Traditional approaches fail to cope with fast and dynamic developments of modern energy systems and fail to integrate new technologies and rising data streams effectively. Also, most of the existing grid management software is very slow in including new energy sources; hence, the new adaptation is cumbersome and prone to errors. This may cause inefficiencies, and even systems may fail due to this, which might threaten both reliability and safety.

GridGPT can solve these issues by enabling operators to use natural language to generate and modify Distribution System Simulator (DSS) scripts. This approach simplifies the management of complex grid data, reduces the likelihood of human errors, and enhances overall grid efficiency and reliability.

Users

- Prosumers
- Independent System Operators
- Utilities

https://www.google.com/imgres?q=prosumers%20clipart&imgurl=https%3A%2F%2Fwww.shutterstock.com%2Fimage-illustration%2Fprosumer-renewable-energy-selfproduced-sharing-260nw-1589245951.jpg&imgrefurl=https%3A%2F%2Fwww.shutterstock.com%2Fsearch%2Fprosumer&docid=zvi11tGUWvPxSM&tbnid=eRSn9iBbQpW9LM&vet=12ahUKEwjB-b23kYKJAxVYD9AFHYfELcwQM3oECFoQAA..i&w=450&h=280&hcb=2&ved=2ahUKEwjB-b23kYKJAxVYD9AFHYfELcwQM3oECFoQAA

Prosumers

- People, households, or entities that produce and consume power
- Households with rooftop solar

https://www.intermtnwindandsolar.com/how-a-rooftop-solar-array-creates-electricity-for-your-home/

Prosumer Needs

- They want to make a quick return on their investment
- They want to be able to save money on their power bill or make profit
- They want to sell their generation at the most opportune time

https://www.dreamstime.com/photos-images/money-rain.html

Independent System Operators

- Non-Profit entities that run the power grid and electricity markets
- Determine who generates power and how much power they can generate
- Determine the wholesale electricity prices

https://www.google.com/url?sa=i&url=https%3A%2F%2Fenergyfreedomco.org%2Felec-system.php&psig=AOvVaw3B9kaRB31d5TFzKpEOwNe6&ust=1728592124391000&source=images&cd=vfe&opi=89978449&ved=0CBEQjRxqFwoTCKChiNGRgokDFQAAAAAdAAAAABAE

Independent System Operators Needs

- Desire accurate software to allow them to predict the demands on the grid
- Accurate and efficient software will allow for a better operating electricity market

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Utilities

- Companies supplying electrical utilities
  - MidAmerican Energy
  - AEP
- Power utility companies generate, transmit, and distribute electricity and natural gas to homes and businesses

https://www.hanson-inc.com/Resources/3a720781-d04d-4bee-bb07-6bfe11e5dba8/Power-logos.png

Utility Needs

- These companies are looking for software that can accurately forecast power generation and load consumption.
- This allows for more efficient power flow, saving power and money

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Conclusion

- Procumers, Independent System Operations, and Utilities Companies can benefit from our product of GridGPT based on their user needs
- Procumers benefit by maximizing their energy investments and efficiency with the energy costs
- Independent System Operators benefit from access to accurate data and dynamic management solutions from GridGPT
- Utilities companies benefit from forecasting power and load. In addition to increasing efficiency and reducing errors.