



Lightning Talk 1



Project Overview

- What It Is: An AI-powered tool designed to assist power grid operators in writing and refining distribution system simulator (DSS) scripts for power grid design and modification.
- Technology: Utilizes Generative Pre-trained Transformers (GPT) models for natural language processing, enabling the translation of operators' instructions into efficient DSS scripts.



Problem Statement

- Traditionally, Power grid operators have to analyze grid data through these same DSS files. Sometimes, they are difficult to interpret. This could raise the possibility of human error in these grid analysis
- The objective of this project is to explore the technologies that Artificial Intelligence provides, and how it can be used/leveraged to assist power grid operators in interpreting, editing and changing complex power grid data.

Description of Users

- **Technical Tom - Field worker**
 - Perform maintenance, repairs, and inspections on physical grid infrastructure. This requires accessing detailed information about grid components, historical maintenance data, and technical manuals while on-site.
- **Power plant Pete - Grid Engineer**
 - Engage in the technical planning and development of the grid, including capacity planning, integration of renewable energy sources, and grid modernization projects. They require tools for simulation, data analysis, and project management.
- **Utility Ugo - Utility Operator**
 - Manage and maintain the power grid's day-to-day operations.
 - Require accurate and actionable data for grid management, maintenance, and repair.



Users and their needs

- Technical Tom
 - Doesn't understand technical jargon and needs a user manual
- Power plant Pete
 - Needs a way to automate paper work faster
- Utility Ugo
 - Needs a way to detect outages or electrical theft



Conclusion

Our project will implement AI technologies to effectively utilize data from grid simulation files (.dss files) with more clarity on the side of substation employees.

It will provide actionable data for maintenance to equipment, outage mitigation, and new component additions.

The application of GridGPT is best suited for the management of a station by a utility operator and the hands on work done by a group of technicians.