Examples of Climate Ontology and LLM Integration

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These are just some very basic examples of what can be done with AllegroGraph and LLMs. All I needed to do for the following was run a Linux script on my PC and set up AllegroGraph with my Open AI API key. The first examples are some basic NLP. Note: this is why it would be useful to use excerpts from the book. I’ve been including excerpts from the book as property values using a property called skos:definition. When I run the Linux script I tell it to create embeddings for all the strings that are the value of that property (as well as the rdfs:label), then ChatGPT can use those strings to answer questions. It can also do things like return specific objects of the graph that are relevant to a question. There are examples of doing this with a custom UI for another ontology here: <https://www.michaeldebellis.com/post/integrating-llms-and-ontologies>

A screenshot of a computer

Description automatically generated

These examples are a little repetitive because there is so little info in the ontology right now.

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Here are two examples of graphs in Gruff.

A diagram of a diagram

Description automatically generated

A diagram of a group of people

Description automatically generated with medium confidence

This is the new ChatBot capability. Although in this session, it’s not working. It’s just using ChatGPT not the ontology. This is a new feature and I’m pretty sure there is something extra I need to do to make it see the ontology because I used it a bit more and clearly it was just using ChatGPT. All this UI stuff is new, in the old version you just did SPARQL queries. That’s why in the RAG system I used a Python Servlet, although even with this new capability, I think ultimately creating a custom UI is better.

A screenshot of a chat

Description automatically generated