Examples of Climate Ontology and LLM Integration

Michael DeBellis

michaeldebellis.com

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.

A screenshot of a computer

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A screenshot of a computer

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Here are 3 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

A diagram of a forest

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