Consume data, quickly find relevant information, and gain meaningful and actionable insights for your daily tasks.

Maintain and curate heterogeneous data sources and map data to the domain knowledge model.

Translate end-user information needs into intuitive, model-driven interfaces.

Consume data, quickly find relevant information, and gain meaningful and actionable insights for your daily tasks.

Pinpoint your information needs

Model your domain

Connect your data

Build the user experience

Delight end users

Review your current processes, discuss your solution goals and current pain points, and define your users' information needs.

Collaboratively define a knowledge model. The knowledge model is validated with **business users** in an iterative manner.

Power your information needs

Model your domain

Connect your data

Build the user experience

Delight end users

Powered by metaphactory

metaphactory
The three layers of a semantic knowledge graph

- Vocabulary Layer
- Instance Data Layer
- Ontology Layer

Key features:
- Automated Reasoning
- Knowledge Democratization
- Reuse of Public Knowledge
- Shared Understanding
- Consistent Representation
- Concepts & Relationships
- Human & Machine Interpretability
- Interoperability & Reusability
- Standardized Format
Connecting the ontologies, vocabularies & instance data

**Benefits**

» Interlink ontologies & vocabularies to support reuse while separating management & governance tasks

» Improve stakeholder communication, asset documentation & governance

» Enable model-driven applications with e.g., auto-suggestions in semantic forms, runtime validation of user interaction, hierarchical facets in search, etc.

» Ensure data quality by running checks & validations against business logic

metaphactory knowledge graph approach - Layering of open W3C semantic knowledge graph standards as utilized & applied by metaphactory
All stakeholders are empowered to actively participate in the modeling process.

Agile processes for ontology design, implementation and documentation.
NeOn-GPT: A Large Language Model-Powered Pipeline for Ontology Learning*

Nadeen Fathallah¹, Arunay Das², Stefano De Giorgis³, Andrea Poltronieri⁴, Peter Haase⁵, and Liubov Kovriguina⁵

¹ Analytic Computing, Institute for Artificial Intelligence, University of Stuttgart, Germany
² King’s College London, UK
³ Institute of Cognitive Sciences and Technologies - National Research Council (ISTC-CNR), University of Bologna, Italy
⁴ Department of Computer Science and Engineering, University of Bologna, Italy
⁵ metaphacts GmbH, Walldorf, Germany

Abstract. We address the task of ontology learning by combining the structured NeOn methodology framework with Large Language Models (LLMs) for translating natural language domain descriptions into Turtle syntax ontologies. The main contribution of the paper is a prompt pipeline tailored for domain-agnostic modeling, exemplified through the application to a domain-specific case study: the wine ontology. The resulting pipeline is used to develop NeOn-GPT, a workflow for automatic ontology modeling, and its proof of concept implementation, integrated on top of the metaphactory platform. NeOn-GPT leverages the systematic approach of the NeOn methodology and LLMs’ generative capabilities to facilitate a more efficient ontology development process. We evaluate the proposed approach by conducting comprehensive evaluations using the Stanford wine ontology as the gold standard. The obtained results show, that LLMs are not fully equipped to perform procedural tasks required for ontology development, and lack the reasoning skills and domain expertise needed. Overall, LLMs require integration with the workflow or trajectory tools for continuous knowledge engineering tasks. Nevertheless, LLMs can significantly alleviate the time and expertise needed. Our code base is publicly available for research and development purposes, accessible at: https://github.com/andreamust/NeOn-GPT.