

Proposal for workshops – AGILE 2025

Dresden, Tuesday 10 June 2025

<https://agile-online.org/conference-2025>

1. Workshop name/title (and acronym is applicable)

Large Language Models for Conversational Geodata Search

2. Description of the workshop by listing topic(s), objective(s) and planned outcome(s)

2.1 Topic(s)

GeoAI, LLMs, Dataset Search, Spatial Data Retrieval

2.2 Objective(s)

The objectives of this workshop are the following:

- Attendees will learn how to use LLMs for search tasks involving geographic datasets
- Attendees will learn how to apply and instruct LLMs for handling spatio-temporal queries
- LLM-prompts necessary to guide the models will be tested interactively, and evaluated

2.3 Planned outcome(s)

The workshop is a hands-on tutorial in which participants gain experience using state-of-the-art LLMs in the context of geodata search. We will test different prompts, gather feedback, and refine them to enhance their functionality. The slides, notebooks and prompts used during the workshop will be made available to the GIScience community as open educational resources.

3. Abstract

Traditional geospatial data search in research data repositories relies on basic full-text search and filters, which often fail to handle complex user queries effectively. While commercial AI providers like Perplexity AI have introduced conversational search engines

using Large Language Models (LLMs), similar tools for research datasets, particularly geospatial data, are lacking.

This workshop will address this gap by exploring the methods of a conversational search system tailored to spatial data. Participants will learn how to design and test LLM prompts that effectively instruct models for spatio-temporal queries, improving the way users interact with geospatial data repositories. Through interactive testing and feedback, the attendees will gain practical experience in designing prompts for a more intuitive and efficient search experience, enhancing their ability to develop solutions for real-world geodata search challenges.

4. Short description of the intended length (half or full day) and the format of the workshop

Half day.

5. Brief statement of the relevance of the workshop for AGILE

The outcomes of the workshops are useful for the geospatial community as new search approaches can increase the findability of datasets and thus positively impact the reuse of open geographic datasets, the design of spatial data infrastructures, and the realization of the Digital Earth Vision.

6. What is the approximate number of expected participants?

10-20

7. Names and e-mail addresses of the organizing member(s)

Leading AGILE member (or sponsor) and contact person:

Simeon Wetzel, TU Dresden, simeon.wetzel@tu-dresden.de

Contributing AGILE members (including the persons involved) – at least one seconding AGILE member is needed:

Dr. Auriol Degbelo, TU Dresden, auriol.degbelo@tu-dresden.de

Dr. Stephan Mäs, TU Dresden, stephan.maes@tu-dresden.de

Persons involved: Simeon Wetzel, Dr. Auriol Degbelo, Dr. Stephan Mäs

Contributing non-AGILE members (including the persons involved) – if applicable: N/A

Organizing Committee (if applicable): N/A

Programme Committee (if applicable): N/A

8. Additional information about previous workshops, if held.

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9. Expected resources needed

A room with internet connection is needed, as well as the possibility present slides. If possible, a few power sockets should be available for attendees.

Attendees will need their own computer and basic knowledge of python.

10. Other information

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Submission by e-mail to: agile2025@tu-dresden.de