

# Geospatial Semantics Modeling and Visualization; the First Workshop of the International Cartography Association Commission on Geospatial Semantics

Workshop organizers:

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## Description

Geospatial ontologies formalize representations for sets of interrelated concepts based on their semantics from theoretical and applied perspectives. The representation and reasoning of geographic knowledge must be cohesive with many interrelated disciplines, including: language, logic, cartography, social theory, geospatial analysis, and programming. To advance research in geospatial knowledge representation and reasoning, the International Cartography Association (ICA) is sponsoring a Commission on Geospatial Semantics (CGS). The CGS will solicit abstracts for presentations on both theoretical and applied aspects of geospatial and cartographic ontologies for the First Workshop of the CGS. This half-day workshop will bring together expert and newly interested specialists and technologists from across geospatial informatics to network and develop an agenda to advance the broad role of semantic technologies in geographic information science.

Prior to the meeting we encourage prospective attendees/participants to examine the agenda and guidelines at the CGS web site (to be provided with the announcement). A range of potential topics will be suggested for the workshop and opportunities will be provided for those interested in the day's agenda to register a topic or an issue to be included. We will accept and cover complex issues for discussion. Participants will have the opportunity to develop papers within this framework for publication by the ICA prior to the International Cartography Conference in Florence, Italy in 2021.

A secondary activity immediately before the research workshop is to offer participants a hands-on tutorial addressing basic concepts of geospatial semantics with the aim of expanding the community of scholars interested in the field. This workshop will also offer an opportunity for semanticians to formalize concepts using a compatible technology where more widespread forms of geographic information systems (GIS) are inflexible. The tutorial is open to everyone attending AutoCarto 2020.

## Proposed Agenda

Tutorial (8:00 am – 9:00 am)

The tutorial will include an informal 'handbook' that focuses on the following learning objectives

1. Overview of applied geospatial ontology using Protégé
  - Background to triples, Web Ontology Language (OWL) vocabulary, inference reasoning
  - Point geometry data for Linked Open Data
  - GeoSPARQL for coordinate geometry topology
  - Property restrictions for qualitative geospatial models, for example, 'Place'
2. Unstructured time to allow an opportunity for hands-on practice alongside experienced peers to make progress on an issue of interest

Participants registered for the tutorial will bring their laptop computers with Protégé ontology design software and data files installed in advance. In addition to ontology design, Protégé supports SPARQL queries and inference reasoning. Dalia Varanka will lead the tutorial. Other experts will be invited to join the tutorial team.

Presentations (9:00 am – 10:30 am)

Presentations will be scheduled on topics including, but not limited to

- Spatial and spatiotemporal knowledge modeling, analysis, formalization, and validation (thesauri, vocabularies, and ontologies)
- Management of geospatial Semantic Web systems, data, and linked data on the cloud
- Data fusion and semantic interoperability across knowledge domains, cultures, ethnicities, languages, and time, spatiotemporal models
- Geospatial visual vocabularies (maps as knowledge bases)

Discussions (10:45 am – 12:00 pm)

After a 15-minute break, the workshop will continue as a forum for discussion focused on

- Identifying individuals or forming working groups around topical subjects or themes
- Providing oral and written commentary on the scope of related work
- Having a general discussion to form an outline for publication and knowledge sharing
- Concluding with a summary and closing statements.

### **Abstract submissions**

Scholars interested in presenting a paper or participating in the session as a discussant will be able to submit their abstract through the standard submission procedures whose guidelines will be provided. The CGS will cooperate and correlate all activities with the AutoCarto 2020 organizers.