Proposal for workshops – AGILE 2025

Dresden, Tuesday 10 June 2025

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

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

> 2nd Workshop on CartoAI: AI for Cartography

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

2.1 Topic(s)

- Novel deep learning techniques applied to maps or to cartographic data
- AI techniques for map generalization, map schematization, text placement
- Pattern recognition in maps
- Cartographic style transfer
- AI techniques for map vectorization and map label interpretation
- Large language model for map interaction
- Evaluation of AI techniques and results
- Review of AI studies in cartography
- Explainable AI (XAI) for AI in Cartography

2.2 Objective(s)

> The workshop aims to bring together researchers and practitioners to discuss the integration of AI techniques in cartography. It will explore advancements, share ongoing research, and foster collaboration.

2.3 Planned outcome(s)

> *An outcome can be e.g., the publication of a report, a special issue of an International Journal, a white paper, a book, etc. If you already know the publisher, please provide this information as well. The workshop can also be a hands-on tutorial in which the participants are taught a new method or software relevant to one of the conference topics.*

Online proceedings and presentations of the workshop will be published on the website of the ICA Commission on Multi-scale Cartography. It may also result in a joint journal special issues on AI in cartography.

3. Abstract

This is how you want your workshop to be presented on the conference webpages (maximum 1000 characters)

In recent years, the development of Artificial Intelligence (AI) in the field of cartography has been truly inspiring. AI technology has demonstrated immense potential in areas such as map generalization, automated map-making, map design, user interaction and many more. With these advancements, cartography is undergoing an unprecedented transformation.

Following a successful CartoAI workshop in 2023, this workshop seeks to gather the researchers working on AI techniques applied to cartography. For this workshop, contributions on all AI-related techniques are welcome. The workshop will give the participants the opportunity to give short presentations on recent and ongoing research. It will also include a keynote and time for discussions.

The workshop is endorsed by the ICA (International Cartographic Association) Commission on Multi-scale Cartography and the DGfK (German Cartographic Society) Commission on Cartography and Artificial Intelligence.

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

We intend to have a half-day workshop, to allow sufficient time for questions after presentations. It is the same duration as for the previous workshop.

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

The Cartographic communities (ICA, DGfK) and AGILE research communities clearly overlap but are not the same, and the workshop would also attract the workshop attendees to the main conference. The workshop aligns also with the theme of the conference, particularly with the AGILE conference topics:

- Artificial Intelligence, Machine Learning, Geo-AI
- Map Generalization and Multi-Scale Mapping

6. What is the approximate number of expected participants?

20 - 30

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

Leading AGILE member (or sponsor) and contact person:

- IGN France, contact person: Guillaume Touya (guillaume.touya@ign.fr)

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

- HafenCity University Hamburg, contact person: Güren Tan Dinga (gueren.dinga@hcu-hamburg.de)
- University of Zurich, contact person: Zhiyong Zhou (zhiyong.zhou@geo.uzh.ch)

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

- Technical University of Munich, contact person: Yu Feng (y.feng@tum.de)

Organizing Committee (if applicable):

- Yu Feng; Güren Tan Dinga; Guillaume Touya; Zhiyong Zhou

Programme Committee (if applicable):

- Cheng Fu, China Agricultural University
- Yuhao Kang, University of Texas at Austin
- Quentin Potié, IGN, Univ. Gustave Eiffel
- Jochen Schiewe, HafenCity University Hamburg
- Monika Sester, Leibniz University Hannover

8. Additional information about previous workshops, if held.

The 1st workshop on CartoAI (https://cartoai.github.io/giscience2023/index.html) was held in 2023, jointly with the GIScience 2023 conference in Leeds, UK. The event was a significant success, featuring 12 presentations selected from 13 submissions representing diverse research contributions from France, the USA, China, Switzerland, Poland, and Germany. A total of 18 researchers actively participated, fostering engaging discussions and collaborations.

We aim to establish CartoAI as a biennial series of workshops, primarily held in European countries, to create a sustained platform for exploring the integration of AI in cartography and advancing geospatial science. Additionally, we aspire for CartoAI to become a flagship event under the International Cartographic Association (ICA) and the German Cartographic Society (DGfK), further enhancing its international recognition and impact.

9. Expected resources needed

Explain here if you have any special needs (e.g. internet connection, break-out room(s), etc.), what are the expected resources needed. Please take into account that the fixed fee for the workshop (1 day) only covers the basic expenses made (coffee breaks, …). If you need additional support, this request should be directed towards the AGILE Council, but this support cannot be guaranteed.

We would need an Internet connection sufficient to allow live streaming of the workshop.

10. Other information

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