

14th International Conference on Spatial Information Theory

COSIT 2019, September 9–13, 2019, Regensburg, Germany

Edited by

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To our colleagues who fostered and shaped this community.

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■ Preface

With this COSIT conference being held in Regensburg (Germany) in September, 2019, this conference series on spatial information theory has lasted for more than a quarter of a century. For a community that is made up of researchers from many different disciplines, this is a remarkable achievement - one, which will be given due consideration during the conference week of September 09–13, 2019. With the selection of Regensburg as the conference location, the series also returns to Germany 20 years after the last COSIT held in a German location, that of Stade, near Hamburg.

One of the hallmarks of COSIT (see the conference series website www.cosit.org) is the desire to hold the conference in a remote but still accessible location – accessibility being determined as at most 2 hours travel time from an international airport – in order to promote the building of a cohesive community. Towards this end, we have also been restricting COSIT to be a single track conference with (personal) presentations, trying to create a scientific event where participants share the same experiences (scientifically and socially) and are able to discuss these experiences in person. This is, we believe, one of the prerequisites for building such a tightly-knit community. Continuing in this vein, we eschew the use of Skype presentations or similar virtualization efforts, focusing on personal contact.

Putting together a single-track conference means that, unfortunately, there are fewer opportunities for presentation and a reduced number of paper acceptances. For this newest installment of the series, we received 30 full paper submissions, 48 short paper submissions and 7 vision paper submissions. Vision papers are a new category in which not only evidence-based ideas may be presented but also a broader view of COSIT topics as a whole may be expounded.

It is a remarkable fact about the early conferences in the COSIT series that they were successful at producing numerous seminal papers, which spelled out a research program or provided a synthesis of findings from an interdisciplinary perspective. To revisit visions that were suggested in the past and to stimulate the discussion of new research directions, we decided to solicit vision papers as a new type of submission for COSIT 2019. These are rigorously argued papers that identify emerging problems or questions for the geospatial science community as a whole to address. Vision papers were coordinated by Maria Vasardani.

All COSIT 2019 papers were reviewed by at least three members of the program committee and the program chairs selected 8 full (27% acceptance rate), 12 short (25% acceptance rate) and 4 vision (57% acceptance rate) papers for publication and oral presentation at the conference. Those paper authors that could not get a spot in the tight program were given an invitation to present a poster during a specially arranged poster session.

The 23 accepted papers show both breadth and diversity with respect to topics, chief among these *modelling and interaction* (4 papers), *spatial reasoning* (2), *reproducibility* (1), *spatial language* (4), *ontological modeling* (3), *diagrams* (2), *visualization* (2), *cognitive models of wayfinding* (3), *spatial knowledge* (2), and *learning* (1).

Looking back on more than 25 years of COSIT we can observe the re-occurrence of several by now established research areas such as spatial reasoning, ontologies, and wayfinding. More recent topics such as urban networks and reproducible research in geoinformatics are also represented in the program. The different disciplines involved at COSIT have learned from each other, which is an achievement in itself. As a result we see papers integrating

methodological approaches from disciplines present at COSIT, e.g., a geography and computer science or psychology and artificial intelligence. This year we observe an increased interest in spatial language as evidenced by two sessions as well as a workshop on the topic.

An important part of the COSIT conferences are the accompanying satellite events such as the Doctoral Colloquium (this year organized by Ioannis Giannopoulos and Hedda R. Schmidtke) and four workshops and a tutorial (coordinated by Toru Ishikawa and Johannes Scholz). These events serve as additional presentation platforms, and they also showcase the currently active interest of the research community. The topics of this year's workshops and tutorial range from Spatial Cognition and AI, quality aspects in the context of localization, computing techniques for spatio-temporal data in archaeology and cultural heritage, communicating about space, and the goodness of space (related to Alexander's notion of wholeness). In addition to these events focused on content, COSIT provides further opportunities for social interaction with the poster session and reception, the afternoon excursion and the conference dinner.

Organizing an event such as COSIT and making it a success is only possible with the help and commitment of many people. The program committee plays a pivotal role in ensuring a quality program, and we would like to thank all reviewers for their time and for the thorough and timely reviews they provided.

We would like to thank the University of Regensburg for supporting the conference by offering the location as well as technical and logistic support free of charge. We gratefully acknowledge the support of our sponsors, the Universitätsstiftung Hans Vielberth (Regensburg, Germany) which generously covered the travel expenses of the COSIT 2019 keynote speakers, as well as the financial support by Kronos AG (Neutraubling, Germany) and Number42 (Regensburg, Germany).

Finally, we would like to thank all who will attend COSIT 2019 to present their work, to discuss the work showcased at the conference, and to advance the state of the art in the field of spatial information theory, thus keeping this community vibrantly alive.

July 2019

Sabine Timpf, Christoph Schlieder,
Markus Kattenbeck, Bernd Ludwig, and Kathleen Stewart

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