

17th International Conference on Spatial Information Theory

COSIT 2026, September 22–25, 2026, York, UK

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■ Preface

COSIT 2026 is the 17th Conference on Spatial Information Theory and was held from 22–25 September 2026 in York, United Kingdom. Established in 1993, COSIT is a biennial international conference series concerned with theoretical aspects of space and spatial information. It provides a forum for research on how space, time, spatial information, and temporal information are represented, reasoned about, communicated, experienced, and used by humans, agents, and computational systems.

COSIT takes place at a time when spatial information theory is increasingly asked to mediate between formal models, empirical studies of spatial cognition and behaviour, and rapidly developing computational systems. Current debates around GeoAI, geospatial knowledge graphs, embodied and agent-based spatial reasoning, foundation models and large language models, multisensory spatial cognition, and human–machine interaction all raise renewed theoretical questions about representation, interpretation, explanation, and situated spatial action.

Yet, spatial information also sits within a broader context. In response to pressing global challenges, researchers are being increasingly asked to consider and contribute to the understanding of people and space. Mapping our potential contributions – from spatial representation to production of spatial patterns – must become part of the practice of spatial information research. The theme for COSIT 2026, *“From Cognition to Flows”*, manifests this transition. It reflects on how the cognitive foundations of human behaviour hold an intrinsic role in shaping large-scale geographic flows and interactions, pertaining to complexity theories. Taken broadly, the theme challenges us to consider how representation impacts and interacts with the production of global phenomena.

As with tradition, COSIT 2026 is organized as an intensive single-track meeting. This format is central to the COSIT community: it encourages shared intellectual experience, sustained discussion across disciplinary boundaries, and the formation of new collaborations.

This year, the conference received 27 full paper submissions, a record number of 73 short paper submissions, and 9 submission for presenting journal papers. Each submission was reviewed by at least two members of the Programme Committee as well as the Programme Chairs. Where a submission was co-authored by a Programme Chair, the review and decision were handled by the remaining Chairs, and the conflicted member was excluded from all related discussions. Based on these reviews and subsequent discussions amongst the Programme Chairs, 14 full papers and 22 short papers were accepted for presentation and publication in this volume. An additional 19 submissions were accepted as posters, and 7 journal papers were accepted for presentation at the conference. Overall, the acceptance rate of submissions amounted to 36 %, with almost 48 % for full papers and 30 % for short papers. We also needed to desk-reject one submission due to improper use of AI and hallucinated references.

The papers in this volume demonstrate the breadth of contemporary spatial information theory. They address a variety of themes such as geospatial semantics, qualitative spatial reasoning, language and foundation models, spatial cognition, wayfinding and navigation, geographic information retrieval, spatial analysis and modelling, and spatial simulation.

As with the last COSIT, workshops and tutorials were incorporated as thematic sessions into the programme. We had four workshops during the conference on topics of responsible GeoAI, physical and perceived safety, spatial Human-Computer Interaction, and indoor

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spatial information. Alongside, we ran a Doctoral Mentorship Programme, encompassing 18 students in different stages of their PhD, with a special session featuring their research.

The programme is complemented by invited keynote talks from Professors Hugo Spiers, Laura Alessandretti, and Krzysztof Janowicz, addressing spatial cognition, mobility flows, and GeoAI, respectively. Together with workshops, the doctoral programme, and posters, these events broaden the scope of the conference and provide additional spaces for networking and discussion, especially for early-career researchers.

We thank all authors for submitting their work to COSIT 2026 and for contributing to the rigorous scientific quality of the conference. We are grateful to the Programme Committee and additional reviewers (see below) for their careful and constructive reviews. We also thank the local organizing team, the COSIT Steering Committee, the invited speakers, workshop and doctoral-colloquium organizers, sponsors, and Dagstuhl Publishing for their support in preparing this volume.

July 2026

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