

16th International Conference on Spatial Information Theory

COSIT 2024, September 17–20, 2024, Québec City, Canada

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■ Preface

Established in 1993, the Conference on Spatial Information Science (COSIT) is concerned with theoretical aspects of space and spatial information, aimed at advancing spatial information science and its emerging research frontiers. Here in are the proceedings papers for COSIT 2024, which was held from September 17–20 in Quebec City, Canada.

Spatial information theory is the interdisciplinary study of information about spaces and environments at the scale of human experience, including its representation and its role in communication. In particular, spatial information theory studies how the interpretation of spatial information influences the behavior of human and artificial agents. It draws together numerous threads between computational and formal models of space; the mental representation of space by humans and other animals; and the various ways human and artificial agents communicate information about space. Space is thereby studied on various scales, including the space in geographic maps as well as the space of the human body.

COSIT is an open community that encourages the adoption of interdisciplinary and multidisciplinary methodologies and theories to advance knowledge of space and spatial information. For the thirty years that COSIT has been around, participants have explored spatial information theory from a multitude of perspectives, showcasing original and impactful research in spatial language and linguistics, spatial cognition, neuroscience, spatial reasoning, navigation, movement analysis, geographic information systems, spatial data science, semantics, philosophy of space, geostatistics, cartography, environmental modeling and design, place and space, artificial intelligence, robotics, location-based systems, and human-computer interaction, just to name a few! In order to maximize engagement and dissemination of ideas at the conference, COSIT runs as an intensive, single-track conference consisting of paper presentations and special thematic sessions over four days.

Our use of spatial technologies in everyday life has changed dramatically since the first COSIT. Today, geospatial technologies are ubiquitous, we are drowning in spatial data, and recently AI tools that compute over language stand to significantly change how information systems communicate spatial information all while being generally opaque about what spatial knowledge they represent. At the same time the spatial environments that are represented in information systems reflect a reality of a world facing a series of complex and challenging social and environmental issues spanning from urban planning to climate change. It is with this context that the theme for this year's COSIT was chosen: spatial information theory for transparent translational research. In addition to original research papers on spatial information theory from any discipline, we sought papers that made the link between spatial information theory and benefits to humanity, the biosphere, and the planet.

We accepted two types of papers for the proceedings: full and short papers. We had 29 full paper submissions and accepted 11 (38% acceptance rate). We had 54 short paper submissions and accepted 20 (37% acceptance rate). In addition to these submissions, for the conference we also accepted 16 poster presentations and provided authors of six recently published journal research articles and books on spatial information theory the opportunity to present and share their work in front of the COSIT audience.

We would like to thank the following members of our international program committee who peer-reviewed submissions.

Benjamin Adams, Amy L. Griffin, Simon Scheider, and Grant McKenzie



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