



# TRACK: Geospatial Technologies and Geographic Information Science for Crisis Management (GIS)

<https://iscram2022.enit.fr>

## INTRODUCTION TO THE TRACK

With crisis and hazardous events being an “inherently spatial” problem, geospatial information and technologies frequently support disaster and crisis management. This has been further highlighted in response to the current Coronavirus pandemic, which relies extensively on spatial analysis to identify the virus dissemination pathways and fight against the virus propagation. Therefore, geospatial methods and tools - such as Spatial Decision Support Systems (SDSS), Geographic Information Systems (GIS) architectures, Volunteered Geographic Information (VGI), spatial databases, spatial-temporal methods, as well as geovisual analytics technologies - have a great potential to contribute to understanding the geospatial characteristics of a crisis, such as to estimate damaged areas, define evacuation routes, and plan resource distribution. New forms of data such as sensor data, social media, and OpenStreetMap (OSM) have also been employed to support disaster management (e.g., near real-time mapping). Nevertheless, all these geospatial big data pose new challenges for geospatial data visualization and data modeling and analysis. Existing technologies, methodologies, and approaches now have to deal with data shared in various formats, velocities, and uncertainties.

In line with this year’s conference theme, the GIS Track particularly welcomes submissions addressing aspects of geospatial information in disaster risk and crisis research, and how this geospatial information should embrace the interdisciplinary nature of crises. This includes exploring bridges between geospatial data science methods and tools and other related fields, including (but not limited to): computing disciplines (e.g., AI and machine learning), social sciences (e.g., socio-spatial aspects of risk and resilience, community resilience, participation, and governance) and humanities (e.g., spatial humanities and spatial digital arts). We seek conceptual, theoretical, technological, methodological, empirical contributions, and research papers employing different methodologies (e.g., design-oriented research, case studies, and action research). Solid student contributions are particularly welcome.

## TRACK TOPICS

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Track topics are therefore focused on but not limited to the following list.

1. *Geospatial data analytics and geospatial artificial intelligence for crisis management*
2. *Spatially explicit machine learning and artificial intelligence for crisis management*
3. *Location-based services and technologies for crisis management*
4. *Geospatial ontology and linked data for crisis management*
5. *Geospatial big data in the context of disaster and crisis management*
6. *Urban computing and geospatial aspects of smart cities for crisis management*
7. *Spatial Decision Support Systems for crisis management*
8. *Individual-centric geospatial information*
9. *Remote sensing for crisis management*
10. *Geospatial intelligence for crisis management*
11. *Spatial data management and infrastructure for crisis management*
12. *Geovisual analytics, mapping, and geovisualization for crisis management*
13. *Spatial-temporal modeling in disaster and crisis context*
14. *Collaborative and participatory disaster mapping, citizen participation*
15. *Geoethics, privacy and spatial justice in crisis management and disaster risk reduction*
16. *Public policies and governance for geospatial information*
17. *Case studies of geospatial analysis/tools during a pandemic situation*
18. *Empirical case studies*

## TRACK CO-CHAIRS

	<p>Professor João Porto de Albuquerque*, j.porto@warwick.ac.uk, <i>University of Warwick</i> <i>Institute of Global Sustainable Development, Coventry, United Kingdom</i></p> <p>Professor João Porto de Albuquerque is Director of the Institute of Global Sustainable Development at University of Warwick. He is also a Fellow of the Alan Turing Institute (UK). João is a geographer and computer scientist with an interdisciplinary background. His research is situated within an interdisciplinary problem space that intersects urban geography, data science, information management, and science &amp; technology studies. He works in the fields of Digital Geography, Geographic Information Science and Global Sustainable Development. João has served as program co-chair, co-track chair, reviewer and author in the ISCRAM community since 2015. His interests span wide-range research topics that include GIS, citizen science, urban analytics, smart cities, crowdsourced and volunteered geographic information, decision support systems, disaster studies, urban resilience, and information technology for development.</p>
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Dr. Flávio Horita, [flavio.horita@ufabc.edu.br](mailto:flavio.horita@ufabc.edu.br)  
*Federal University of ABC, Center of Mathematics, Computation, and Cognition, Santo André, Brazil*

Flávio Horita is an Assistant Professor at the Center of Mathematics, Computation, and Cognition of Federal University of ABC, Brazil. He held a position as a Visiting Research Fellow at Warwick Business School of the University of Warwick, United Kingdom (2019-2020). Previously, he did a PhD. in Computer Science and Mathematical Computing at the University of São Paulo, Brazil (2017). He has been contributing with the ISCRAM community as reviewer and author since 2013, and he served as a co-track chair of GIS Track in 2018-2021. His research interest lies in an interdisciplinary spectrum of software system engineering (i.e., software architecture, system-of-systems, and applied software engineering), digital transformation (i.e. society and business transformation) and disaster risk management. Results of his work have been published in *Decision Support Systems*, *International Journal of Disaster Risk Reduction*, as well as in international conferences.



Dr. Michael A. Erskine, [michael.erskine@mtsu.edu](mailto:michael.erskine@mtsu.edu)  
*Middle Tennessee State University, Jones College of Business, Murfreesboro, Tennessee, USA*

Michael A. Erskine is an Assistant Professor in the Department of Information Systems and Analytics of the Jones College of Business at Middle Tennessee State University. Michael received his Ph.D. in Computer Science and Information Systems from the University of Colorado Denver. His research interests include disaster management, geospatial decision-making, technology governance, and workforce competencies. His research has been presented at various international, national, and regional conferences. Additionally, his work has been published in *Information Systems Frontiers*, *International Journal of Human-Computer Interaction*, *Computers in Human Behavior*, *Journal of Computer Information Systems*, and *International Journal of Electronic Government Research*, among others.

\* Corresponding Chair