

Using Technology in Disaster Management and Communication

Recent disasters, both natural and human-made, have highlighted the importance of technology in supporting disaster management and communication and, ultimately, how technology promises to strengthen societal resilience amid disasters. The use of contact-tracing apps during the COVID-19 pandemic, social media to share and access real-time information about 2023 California wildfires, are only two recent examples.

In the last decade, scholarship has particularly focused on so called “digital technologies” for collecting and sharing disaster-related information, including social media (Eismann et al., 2021; Kaufhold et al., 2020; Simon et al., 2015), mobile technology (Tan et al., 2017), IoT (Khan et al., 2020), or crowdsourcing platforms for leveraging collective intelligence (e.g., Ushahidi). Sustained scholarly attention has also been on traditional research areas in IS, which face unique challenges in the disaster management context. For example, information-sharing related issues (Allen et al., 2014), information flow and availability (Day et al., 2009), privacy concerns related to the use of technology during disasters (Sanfilippo et al., 2020) and interorganizational information flow (Jung & Park, 2016), as well as ontologies (Amaief & Lu, 2013) and data models for disaster events (Chen et al., 2013).

This conference track focuses on the pivotal role of IS in enhancing disaster management. Particularly, we are interested in research in the context of both natural and human-made disasters, such as earthquakes, flooding, social unrest, terrorist attacks, active shooting scenarios. Additionally, we are interested in “cyber-incidents” and “cyber-disasters,” which refer to cyberattacks that can significantly disrupt essential services and the critical infrastructure. This encompasses cyberattacks that exploit vulnerabilities exposed by disaster, such as weaker cybersecurity (i.e., “data looting”), the higher psychological vulnerability of the population, or vulnerabilities in disaster management and communication technology, such as the 2019 FEMA Survivor Privacy Incident¹.

The track aims to explore the latest technologies and strategies for disaster preparedness, response, recovery, and mitigation. It welcomes interdisciplinary contributions and submissions on the development and use of technologies that can improve disaster management, thereby enhancing societal resilience.

Track main topics

This track is open to full research papers as well as research-in-progress papers. Topics relevant to the track include, but are not limited to:

- **Early Warning and Risk Assessment:** Research on designing effective early warning systems and strategies for personal risk assessment. For example, behaviorally-informed design of emergency apps, including the use of digital nudges and persuasive technology solutions, information display, personalized emergency notifications (e.g., to address special populations), with the final goal of increasing compliance with authority guidelines during emergencies.
- **Disaster Mitigation, Management, and Response:** Research on the use of digital technologies for disaster mitigation. In particular, how technology can support public authorities or non-government organizations in resource allocation, information sharing, and find effective course of actions to manage disasters (e.g., decision support systems).
- **Emergency-Related Data Ecosystems:** Research on the development, recombination, and use of data streams for detecting and reporting disasters. This includes studies focusing on ontology development, data management,

¹ <https://www.fema.gov/survivor-privacy-incident>

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IoT. It also includes opportunities to generate valuable emergency-related data, such as through crowdsourcing or open-data repositories.

- **Cyber-disasters and incidents:** Research on cyberthreats and cyber security events, including attacks to the cyber-infrastructure as an instrument of warfare to precipitate conventional disasters, such as inciting social unrests, or ransomware or phishing attacks, particularly those targeting governmental bodies of first responders organizations (e.g., 2017 WannaCry ransomware attack).

References

- Allen, D. K., Karanasios, S., & Norman, A. (2014). Information sharing and interoperability: The case of major incident management. *European Journal of Information Systems*, 23(4), 418–432.
- Amailef, K., & Lu, J. (2013). Ontology-supported case-based reasoning approach for intelligent m-Government emergency response services. *Decision Support Systems*, 55(1), 79–97.
- Chen, R., Sharman, R., Rao, H. R., & Upadhyaya, S. J. (2013). Data Model Development for Fire Related Extreme Events: An Activity Theory Approach. *MIS Quarterly*, 37(1), 125–147. <https://doi.org/10.25300/MISQ/2013/37.1.06>
- Day, J. M., Junglas, I., & Silva, L. (2009). Information flow impediments in disaster relief supply chains. *Journal of the Association for Information Systems*, 10(8), 637.
- Eismann, K., Posegga, O., & Fischbach, K. (2021). Opening organizational learning in crisis management: On the affordances of social media. *The Journal of Strategic Information Systems*, 30(4), 101692. <https://doi.org/10.1016/j.jsis.2021.101692>
- Jung, K., & Park, H. W. (2016). Tracing interorganizational information networks during emergency response period: A webometric approach to the 2012 Gumi chemical spill in South Korea. *Government Information Quarterly*, 33(1), 133–141. <https://doi.org/10.1016/j.giq.2015.09.010>
- Kaufhold, M.-A., Rupp, N., Reuter, C., & Habdank, M. (2020). Mitigating Information Overload in Social Media during Conflicts and Crises: Design and Evaluation of a Cross-Platform Alerting System. *Behaviour & Information Technology*, 39(3), 319–342. <https://doi.org/10.1080/0144929X.2019.1620334>
- Khan, A., Gupta, S., & Gupta, S. K. (2020). Multi-hazard disaster studies: Monitoring, detection, recovery, and management, based on emerging technologies and optimal techniques. *International Journal of Disaster Risk Reduction*, 47, 101642. <https://doi.org/10.1016/j.ijdrr.2020.101642>
- Sanfilippo, M. R., Shvartzshnaider, Y., Reyes, I., Nissenbaum, H., & Egelman, S. (2020). Disaster privacy/privacy disaster. *Journal of the Association for Information Science & Technology*, 71(9), 1002–1014. eue.

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Simon, T., Goldberg, A., & Adini, B. (2015). Socializing in Emergencies—A Review of the Use of Social Media in Emergency Situations. *International Journal of Information Management*, 35(5), 609–619. <https://doi.org/10.1016/j.ijinfomgt.2015.07.001>

Tan, M. L., Prasanna, R., Stock, K., Hudson-Doyle, E., Leonard, G., & Johnston, D. (2017). Mobile applications in crisis informatics literature: A systematic review. *International Journal of Disaster Risk Reduction*, 24, 297–311. <https://doi.org/10.1016/j.ijdrr.2017.06.009>

Track Co-Chairs (one table for each track chair)

(From 2 up to 4 co-chairs; at least one international co-chair; no more than 2 Italian co-chairs; the first one is considered the primary contact of the track)

Name – Surname	Dario Bonaretti
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Short bio	Dario Bonaretti is an Associate Professor of Decision Sciences at Nova Southeastern University in Fort Lauderdale, Florida. His research focus is on how technology can support emergency management and communication, which has been published on journals such as the International journal of Disaster and Risk Reduction, Business and Business and Information Systems Engineering, and presented at conferences such as the International Conference on Information Systems..

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Short bio	Marcin Bartosiak is an Assistant Professor at the University of Pavia's Department of Economics and Management, holds a Ph.D. in Economics and Management of Technology. A visiting scholar at Sauder School of Business (University of British Columbia) and EM Strasbourg Business School, he also conducted research at Louisiana State University. Marcin’s expertise lies in persuasive technology, digital nudging, and artificial intelligence. He serves as the Co-chair of the Augmented Human Intelligence & Digital Ergonomics Lab at the Institute for Transformative Innovation Research in Pavia. His scholarly contributions have been featured in publications such as the European Journal of Information Systems, Information & Management, Harvard Business Review, and Tourism Management.

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