

Guest Editorial Preface

Special Issue on Visualizing Crisis – Part II

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INTRODUCTION

This second special issue of IJISCRAM includes a collection of high quality, completed research presented at the 15th International Conference on Information Systems for Crisis Response and Management (ISCRAM 2018). The theme of ISCRAM 2018 was “Visualizing Crisis” and the papers, posters, and workshops presented at the conference covered a wide range of topics regarding the development and design of information systems that enable better crisis planning, response, mitigation, recovery, and training through visual representation and reasoning.

The first two papers in this special issue look at visualization through the lens of better understanding and designing for how open data is collected and analyzed to inform situational awareness and decision making. The third paper focuses on how we can better assess and thus visualize capabilities across cooperating crisis management organizations. Finally, the fourth paper examines how crisis management can better find and visualize disease outbreaks, and then include public health officials in the response to those events. Combined, these papers offer varied and important perspectives on visualizing crises and disasters.

We summarize each paper in the special issue below.

IDENTIFYING CRISIS-RELEVANT TWEETS

The first paper in this special issue, entitled “A Hybrid Domain Adaptation Approach for Identifying Crisis-relevant Tweets,” was contributed by Reza Mazloom, Hongmin Li, Doina Caragea, Cornelia Caragea, and Muhammad Imran. The paper addresses the challenge of acquiring sufficient labeled data to train machine learning classifiers for a crisis event. The research takes a hybrid approach, using a subset of labeled data from a past similar event and unlabeled data from the new event, to learn self-training domain adaptation classifiers for the new event. This new hybrid approach shows performance gains over prior work.

TECHNOLOGY DESIGN REQUIREMENTS TO SUPPORT DISASTER RESILIENCE ANALYTICS

The second paper, “Discovering Requirements for the Technology Design to Support Disaster Resilience Analytics,” was contributed by Kathleen Moore and Hemant Purohit. This paper identifies a gap in the research literature regarding information system design for crisis management phases

beyond response, such as the preparedness and mitigation phases. To help fill this gap, the authors offer a conceptual framework that shows how information systems design for these disaster phases might be accomplished using open data sources.

ASSESSING INTERORGANIZATIONAL CRISIS MANAGEMENT CAPABILITY

The third paper in this special issue is entitled “Assessing Interorganizational Crisis Management Capability - A Systematic Literature Review,” and is written by Magdalena Granåsen, Mari Olsén, Per-Anders Oskarsson, and Niklas Hallberg. This review explores how interorganizational crisis management capability has been evaluated in the scientific literature and it presents the applicability and limitations of the different methodological approaches.

STAKEHOLDER INVOLVEMENT IN OUTBREAK MANAGEMENT

The last paper in this collection is entitled “Stakeholder Involvement in Outbreak Management - to Fear or Not to Fear?” and it was contributed to the special issue by Magdalena M. Kraaij, Lianne G. C. Schol, Tjerk Jan Schuitmaker-Warnaar, Aura Timen, and Jim E. Van Steenbergen. This paper presents a process for identifying stakeholders connected to public health and communicable diseases and including them in response efforts. Using two case studies in the Netherlands, the authors demonstrate that deliberate stakeholder analysis can reduce the risk of missing potentially relevant actors when handling disease outbreaks.

SUMMARY AND CONCLUSION

The papers presented in this special issue demonstrate the importance of visualization in crisis management. We see how visualization can be a powerful tool for understanding and extracting actionable insights from large, diverse, and complex datasets. We also see that visualizing how current crisis management procedures function can enable critical reflection and lead to improved response efforts. This collection of papers helps us better understand the insights that visualization techniques can offer to the crisis management domain, while also offering important contributions to the diverse and interdisciplinary ISCRAM community.

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