Information Systems Frontiers
A Journal of Research and Innovation

CALL FOR PAPERS: Special Issue on "Exploitation of Social Media for Emergency Relief and Preparedness"

INTRODUCTION

In recent years, there have been several emergency events in various regions of the world, which includes natural disasters like earthquakes, cyclones, floods, fire, epidemics, as well as man-made disasters like terror attacks, riots, socio-political movements, and so on. During and immediately after an emergency event, one of the primary challenges faced by responding agencies is the lack of situational and actionable information, which affects coordination of relief operations. In such scenarios, the Information Systems (IS) community has an important role in developing methodologies and systems for collecting, aggregating, and analyzing situational information in real-time, for helping *emergency relief* operations [Janssen10]. Further, though it might not be always possible to prevent emergency situations, being prepared for impending emergencies can go a long way towards limiting the damage and casualties. IS are also important for *emergency preparedness*, such as cyclone and tsunami warning systems, surveillance systems, identifying accident-prone infrastructures / regions, signaling potential epidemics, and so on [Fedorowicz10].

In today's world, Online Social Media (OSM), such as Twitter, Facebook and WhatsApp, are important sources of real-time information related to emergency events. The ever-increasing amounts of user-generated content posted on OSM platforms in the aftermath of an emergency event can assist emergency relief operations. For instance, crowd-sourced information from OSM has been successfully used to guide relief operations during the 2015 Nepal earthquake. OSM content can also be utilized for emergency preparedness, such as for developing early warning systems, coordinating emergency-resilient communities, and so on.

Effective exploitation of the crowd-sourced content posted on OSM requires reliable real-time Information Systems (e.g., information extraction, summarization, and visualization systems) and integration of OSM content with other information sources. The objective of this special issue is to explore the multifarious aspects of effective information extraction and exploitation from social media, for emergency relief as well as emergency preparedness. The special issue will aim to bring together diverse research communities -- such as Information Retrieval, Data Mining and Machine Learning, Natural Language Processing, Computational Social Science, Human Computer Interaction, and so on -- who can potentially contribute towards building Information Systems for utilising social media for emergency relief and preparedness.

TOPICS

The special issue solicits the submission of high-quality research papers related to the theme, which includes (but is not limited to):

- Retrieval and extraction of situational and actionable information from noisy OSM content
- Applications of data mining, NLP and machine learning on OSM content related to emergency events, including text and image content
- Aggregating information from multiple OSM and online / offline resources
- Addressing the code-mixed and informal vocabulary of OSM content
- Detection of events and emerging themes
- Real-time management and summarization of dynamic content streams
- Detection of rumors, and identification of trustworthy sources and information
- Geo-tagging and geo-localization of content and sources
- Social network models for information diffusion in emergency situations
- Identifying disaster-prone or accident-prone regions and infrastructures
- Crowdsourcing systems for emergency preparedness and disaster relief
- Mining interactions among emergency preparedness and relief groups
- Information Systems for visualization of emergency related information

High quality research papers that have neither been published previously nor are under consideration currently for publication in any other journal or conference are invited. Survey papers with superior quality are also invited in this area.

SUBMISSION INSTRUCTIONS

Paper submissions must conform to the format guidelines of Information Systems Frontiers, available at: http://www.springer.com/business/business+information+systems/journal.

Submissions should be at most 30 double-spaced pages using 11-point font size, including all references.

IMPORTANT DATES

Call for papers: February 1, 2017
Submission deadline: July 1, 2017
Notification of first round reviews: October 1, 2017
Revised Manuscripts due: December 1, 2017
Second Round Notification (if necessary): February 1, 2018
Final Version Due: March 1, 2018
Final Acceptance Notification: April 1, 2018

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BIOs OF SPECIAL ISSUE EDITORS

Marie-Francine Moens (https://people.cs.kuleuven.be/~sien.moens/): Marie-Francine (Sien) Moens is a full professor at the Department of Computer Science at KU Leuven, Belgium. She is head of the Language Intelligence and Information retrieval (LIIR) research group and is a member of the Human Computer Interaction unit. She is currently also head of the Informatics section of the Department of Computer Science at KU Leuven. She is currently a member of the Council of the Industrial Research Fund of KU Leuven and is the scientific manager of the EU COST action iV&L Net (The European Network on Integrating Vision and Language). She is a member of the editorial board of the journal Foundations and Trends® in Information Retrieval. In 2011 and 2012 she was appointed as chair of the European Chapter of the Association for Computational Linguistics (EACL) and was a member of the executive board of the Association for Computational Linguistics (ACL). From 2010 until 2014 she was a member of the Research Council of KU Leuven. She has numerous research projects under her supervision.

Gareth Jones (http://www.computing.dcu.ie/~gjones/): Gareth J. F. Jones is an Associate Professor in the School of Computing, Dublin City University (DCU), Ireland and a Principal Researcher in the SFI ADAPT Centre. He holds B.Eng. and PhD degrees from the University of Bristol, UK. He has previously held posts at the University of Cambridge and University of Exeter, U.K., and in 1997 was a Toshiba Fellow at the Toshiba Corporation Research and Development Center in Kawasaki, Japan. He conducts research on multiple topics in information retrieval, including multimedia, multilingual and personal content across a wide range of application areas. Much of his research encompasses the design of tasks for the evaluation of this research, including test collections and evaluation metrics. Gareth has published more than 400 research papers, and has received a number of Best Paper Awards for this work. In 2010, together with Martha Larson, Delft University of Technology, The Netherlands, he co-founded the MediaEval Multimedia Benchmarking initiative to provide a platform for the development and evaluation of novel tasks in multimedia indexing and search. He has served

as co-Programme Chair for ECIR 2011, Information Retrieval Chair for ACM CIKM 2010, and co-Chair of ACM SIGIR 2013 hosted in Dublin. He is co-Chair for CLEF 2017 which will be co-located with the MediaEval 2017 Workshop in Dublin.

Saptarshi Ghosh (http://mpi-sws.org/~sghosh): He is an Assistant Professor at the Department of Computer Science and Engineering, Indian Institute of Technology Kharagpur, India. He obtained his Ph.D. from the same institute, and has been a Humboldt postdoctoral fellow at the Max Planck Institute for Software Systems (MPI-SWS), Saarbruecken, Germany. He has also been an Assistant Professor at the Department of Computer Science and Technology, Indian Institute of Engineering Science and Technology, Shibpur, India. He has published papers at several prestigious conferences and journals such as SIGIR, WWW, CIKM, ICWSM, ACM T. Web, IEEE JSAC, etc. He has won awards like the Humboldt postdoctoral fellowship, and the Max Planck-India Mobility Grant. He has co-organised the Workshop on Dynamics On and Of Complex Networks (DOOCN) with NetSci Conference 2015, and with the Conference of Complex Systems 2016 (http://doocn2016.wixsite.com/homepage). He has also co-organized the "Information Extraction from Microblogs Posted during Disasters" track at the 2016 Annual Conference of the Forum for Information Retrieval Evaluation (FIRE - http://fire.irsi.res.in/fire/2016/home).

Tanmoy Chakraborty (umiacs.umd.edu/~tanchak): He is a Post-doctoral researcher at the Department of Computer Science, University of Maryland, College Park, USA. Prior to this, he completed his Ph.D as a Google India Ph.D fellow in the Dept. of Computer Science & Engineering, Indian Institute of Technology, Kharagpur, India. His primary research interests include social media, complex networking, and natural language processing. He has published papers in several prestigious venues including SIGKDD, ICDE, EMNLP, WWW, CIKM, COLING, Nature Scientific Reports, Communications of the ACM, IEEE TKDE, ACM TKDD and received several awards including best PhD thesis award by Xerox Research India, IBM Research India, Indian National Academy of Engineers (INAE); best paper runner up in ASONAM 2016, best paper award in COMSNETS 2014, best poster award in Microsoft TechVista 2015. He has served as a program committee member/reviewer in several journals / conferences including ACM TKDD, IEEE Intelligent Systems, IEEE TKDE, AAAI, IJCAI, WWW, PAKDD. He has organized the TextGraphs-10 workshop, collocated with NAACL 2016.

Debasis Ganguly (http://www.computing.dcu.ie/~dganguly/): He is a researcher at IBM Research Labs, Dublin, Ireland. He completed his PhD and postdoctoral research from the ADAPT centre, Dublin City University. His research interests primarily include incorporating term relationships, including the use of topic models and word/document vector embeddings, into retrieval and feedback models for improving search effectiveness. He is also interested in cross-language and multilingual document search, a particular example of which is the case of retrieving relevant information from a collection of code mixed documents. As an academic researcher, he is keen to commercialize his research with industry partnerships and is actively involved in managing academia-industry partnership projects.

Kripabandhu Ghosh (http://www.cse.iitk.ac.in/users/kripa/): Kripabandhu is a postdoctoral researcher at the Department of Computer Science and Engineering, Indian Institute of Technology, Kanpur, India. He obtained his Ph.D. from the Indian Statistical Institute, Kolkata, India. He has been

an International Scholar at KU Leuven, Belgium, working with Professor Marie-Francine Moens. He has been in the Organizing Committee / Program Committee of the Forum for Information Retrieval Evaluation (FIRE: http://fire.irsi.res.in/fire/2016/home) since 2011. He has co-organized sevral tracks at FIRE annural conferences, including "Information access in legal domain" track at FIRE 2013 (http://www.isical.ac.in/~fire/2013/legal.html) and "Information Extraction from Microblogs Posted during Disasters" track at FIRE 2016 (http://fire.irsi.res.in/fire/2016/home). He also co-organized ISI/IRSI/DAIICT Winter School on Information Retrieval Systems and Experimentation, December 2010, ISI Bangalore, which was a workshop organized to offer basic guidance of IR techniques and methodologies to young researchers and faculties across the country. He has also organized the Personalised AdveRtisements buIlt from web Sources (PARIS) workshop in 2016 (http://www.parisproject.be/workshop_pic/program_schedule.pdf).

BIO OF SPECIAL ISSUE GUEST EDITOR

Muhammad Imran (http://mimran.me/**)** is a Research Scientist at the Qatar Computing Research Institute (QCRI). His research focuses on understanding the role of Social Networks (e.g. Twitter) during mass convergence events such as natural or man-made emergencies, by using big data analysis techniques such as text classification, data mining, machine learning, and deep neural networks. Moreover, he is interested in developing novel computational models, techniques, and technologies which can help stakeholders gain situational awareness and actionable information to improve their decision-making processes during time-critical events. Dr. Imran has published over 35 research papers in top-tier international conferences and journals. Among them two of his papers have received the "Best Paper Award". He is a co-chair of the Social Media Studies track at the ISCRAM international conference and served as PC of many major conferences. Dr. Imran has worked as a PostDoctoral researcher at QCRI (2013-2015). He received his PhD in Computer Science from the University of Trento (2013), where he also used to co-teach various computer science courses (2009-2012). Dr. Imran holds a Master of Science in Computer Science degree with a distinction (1st position) from Mohammad Ali Jinnah University (new name: Capital University of Science and Technology) Islamabad campus, 2007. He also holds an Oracle Certified Professional (OCP) certification from the Oracle Corporation, California, USA.

REFERENCES

[Fedorowicz10] Jane Fedorowicz, Janis L. Gogan (2010), Reinvention of inter-organizational systems: A case analysis of the diffusion of a bio-terror surveillance system, Information Systems Frontiers, 12 (1), Springer, Pages 81-95.

[Janssen10] Marijn Janssen, JinKyu Lee, Nitesh Bharosa (2010), Advances in multi-agency disaster management: Key elements in disaster research, Information Systems Frontiers, 12 (1), Springer, Pages 1-7.