

Utility of Social Media Information in Response to Natural Disasters

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Abstract: In this talk, I will explore how we can use social media information to improve responses to natural disasters. Drawing from our own experiences using AIDR, a tool that enables information gathering for disaster response, I will show how social media information can be used effectively to help. Our work in this area addresses questions of how we can classify tweets in real-time using volunteers who assist in training a machine-learning based system. We explored whether and how we can utilize our existing datasets from previous disasters to effectively enable disaster relief. Then, I will show how reports can be generated in natural language utilizing information from the tweets; these reports must be generated to satisfy the different perspectives and information needs of different first responders and volunteers who help orchestrate and co-ordinate disaster relief. Finally, I will outline how images can be processed automatically and help improve the response. Finally, I will examine the issue related to the veracity of the information obtained during disasters and the limits of using information from social media with an eye towards the future.

Speaker Bio: Prasenjit Mitra (<http://www.personal.psu.edu/pum10/>) is a Professor in the College of Information Sciences and Technology; he serves on the graduate faculty of the Department of Computer Sciences and Engineering and is an affiliate faculty member of the Department of Industrial and Manufacturing Engineering at The Pennsylvania State University. His current research interests are in the areas of big data analytics, applied machine learning, and visual analytics. In the past, he has contributed to the areas of data interoperation, data cleaning, and digital libraries especially in tabular data extraction, and citation recommendation.

Mitra received his Ph.D. from Stanford University in 2004 where he investigated issues related to modeling data and the semantics of data in an information integration system. At Penn State, he has pursued research on a broad range of topics ranging from data mining on the web and social media, scalable data cleaning, political text mining, chemical formula and name extraction from documents, and the extraction of data and metadata from figures and tables in digital documents. He was the principal investigator of the DOES project funded by the NSF CAREER Award. He has also been the co-principal investigator of the CiteSeerX, ChemXSeer, and ArchSeer digital library projects, the Regional Visualization and Analytics Center (NEVAC), and the GeoCAM visual analytics projects. Mitra serves as the director of the Cancer Informatics Initiative at Penn State. His research has been supported by the NSF, Microsoft Corporation, DoD, DHS, DoE, NGA, and DTRA. He has served as a consultant for several startups including the Board of Advisors of Global IDs, Inc. Mitra has co-authored approximately 150 articles at top conferences and journals. His work along with his co-authors has resulted in a visual analytics system that was awarded the IEEE VAST '08 Grand Challenge award in the Data Integration area. He has served as the co-chair of the IEEE SOCIETY conference, and as an area chair, and a senior program committee member at top conferences such as CIKM, and IJCAI, respectively.