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Location Analytics in Information Systems: Innovative Applications & Research Opportunities

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Location Analytics in Information Systems: Innovative Applications & Research Opportunities

Panel

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ABSTRACT

Some organizations have found competitive advantages through location analytics, yet such methods are rarely taught, applied, or researched within the information systems discipline. Instead, questions about location or analysis of location data are frequently treated as an afterthought or special case rather than an integral part of most business processes. Hence, organizations rarely adopt location analytics as a core enabler for remaining competitive or gaining a competitive advantage. Location analytics is an exciting opportunity for information systems programs to discover innovative industry applications, expand research approaches, and meet a critical workforce need through curricular enhancements. Many industries have yet to discover the capabilities of practical analyses of location-based data to drive decisions and inform strategy. Similarly, most information systems research (analytical, organizational, and behavioral) does not include spatial methodologies and theories. Finally, industries that hire information systems majors expect them to be able to work with a variety of data, including spatial data. Therefore, exposing information systems students to advanced spatial problem solving and analysis is critical. Our panel will share ideas for implementing innovative spatial analysis within industries, present examples of how spatial dimensions can inform richer and more rigorous research methodologies, and discuss how to best ensure that information systems students are exposed to spatial analysis. We invite those curious about bringing innovation to the IS curriculum to join us on an exploratory journey about location analytics in industry, research, and the classroom.

Keywords (Required)

Location analytics, spatial data analysis, GIS, applied innovative research, enhancing the IS curriculum.

SESSION DESCRIPTION

Organizations have found location-based data to present benefits ranging from more efficient services, improved marketing, and more intelligent deployment of assets. However, while most business databases contain spatial or spatially referenced data, organizations do not have workers with the requisite knowledge to effectively analyze and make decisions with spatial data. Indeed, most information systems programs do not emphasize spatial data analytical techniques. Often business programs consider location-based information and decision-making using such information to be in the domain of geography departments. Nevertheless, employers expect information systems graduates to be able to work with a variety of data – including spatial data – and rarely hire data scientists, systems analysts, data engineers, and business analysts from geography departments. As a result, business and

management schools' involvement with the study, research, and development of location analytics remain slight despite its opportunities and increasing relevance in many industries' operations.

Our panel will first introduce innovative applications for spatial analysis in organizations by discussing the importance of location intelligence in public policy and how location analytics can help solve wicked social problems. Exciting possibilities for bridging location analytics and business practices will be shared.

Spatial analysis also promises a whole new range of research opportunities. Popular theoretical models are rarely tested with location analyses. For instance, location analytics is rarely mentioned as part of the research agenda for social inclusion within the information systems workforce (Trauth, 2017). The importance of location data and its context is rarely mentioned to explain technology adoption (Straub, 2009). Moreover, in the context of digital transformation, the importance and effectiveness of location intelligence in identifying transformation opportunities is underrepresented (Nadkarni & Prügl, 2021). To demonstrate the efficacies and capabilities of location analytics, we will explore spatial analysis for various business disciplines and even delve into research-driven geo-medicine applications.

Given the historical prerogative of teaching and researching data analytics within the information systems domain, it is natural to believe that it is essential to explore and uncover reasons for the hesitance or reluctance of information systems and analytics programs from exploiting the opportunities afforded through innovating with, researching, and teaching critical location analytics skills. Innovative applications of spatially oriented techniques must be conveyed in the classroom to prepare students for new challenges. The panel will encourage discussion of novel ideas on implementing effective location analytics teaching through examples, including spatial aspects of privacy and ethics, the role of location in cybersecurity, and innovative curricular enhancements focused on location analytics.

LEARNING OBJECTIVES

The panelists will address these and other emerging issues on the importance and applicability of location intelligence in the field of information systems and spark comments and ideas among attendees. Furthermore, the panelists intend to raise awareness and audience commentary about innovative teaching opportunities afforded. Expected audience outcomes for this panel include:

1. Bridging location-based research and business practices;
2. Identifying how information systems research can benefit from location analyses; and
3. Proposing innovations to the curriculum to address competency gaps.

PANEL FORMAT

Our moderator will introduce the topics and panelists. Next, panelists will be invited to discuss location analytics in the industry, information systems research, and the information systems curriculum. In addition to addressing the questions, the panelists will have a conversation about each of these topics, devoting approximately 15 minutes to each topic. Following the three conversations, the moderator will briefly summarize the conversations leading to audience questions and comments for 20-25 minutes. To ensure audience engagement, if the audience does not jump in right away, the moderator will have pre-defined questions for each panelist to get the conversation started and ensure exciting audience participation. To conclude the session, each panelist will summarize the outcomes for the remaining 10-15 minutes.

PANELISTS

The panelists bring more than 60 years of collective experience in tech consulting, founding GIS-focused tech startups, higher education teaching, academic research on GIS and location analytics, and organizing and editing contributions in this field. Faculty perspectives include those from a long tradition of embracing location analytics as part of a business school and those of programs recently adopting business analytics as part of the business curriculum. Given below is a quick credentials summary of our panelists.

Avijit Sarkar: Professor of Business Analytics and Operations Management at the University of Redlands, School of Business. His primary research interests include analysis of the use of the internet to advance digital societies worldwide, business use of GIS and location analytics, and spatial patterns of the sharing economy. He is a co-

author of the forthcoming book: Horan, T.A., Pick, J.B. and Sarkar, A. (2022). *Spatial Business: Competing and Leading with Location Analytics*. Esri Press.

Dr. James Pick: Professor of Business and founding Director of the Center for Spatial Business in the University of Redlands School of Business & Society. Past chair of the Department of Management and Business and the School's faculty assembly. He is the author or co-author of 175 journal articles, book chapters, and peer-reviewed papers in IS, GIS, population, and urban studies, and author or co-author of fourteen books, four on GIS topics.

Dr. Michael A. Erskine: Assistant Professor at the Jones College of Business of Middle Tennessee State University. Previously, he served as the Director of the Educational Technology Center at the Metropolitan State University of Denver. He currently teaches IT project management, business web development, and location analytics courses. His research interests include location analytics, technology workforce competencies, and disaster management.

Dr. Asish Satpathy: Lecturer at the Department of Information Systems at the W. P. Carey School of Business, Arizona State University. He has co-authored over 200 peer-reviewed publications. His current research interests include location analytics, sentiment analysis, big data analytics, teaching and learning analytics, and technology entrepreneurship. Prior to this role, he co-founded and consulted several GIS-based tech startups.

Dr. Andrés Díaz López: Clinical Assistant Professor at Arizona State University. He brings an eclectic professional experience covering marketing, project management, consultancy, and international sales & negotiations to his teaching and research areas of interest: location analytics, data visualization, cybersecurity, and innovation. He has taught at universities in Colombia, China, and The United States.

TARGET AUDIENCE

All information systems faculty and doctoral students who are curious about engaging and meeting industry needs, exploring new methodologies for their current and future academic research, and bringing innovation to the IS curriculum are encouraged to join our conversation.

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